APPLETONS’

ANNUAL CYCLOPAEDIA

AND

REGISTER OF IMPORTANT EVENTS

OF THE YEAR

1884.

EMBRACING POLITICAL, CIVIL, MILITARY, AND SOCIAL AFFAIRS; PUBLIC DOCUMENTS; BIOGRAPHY, STATISTICS, COMMERCE, FINANCE, LITERATURE, SCIENCE, AGRICULTURE, AND MECHANICAL INDUSTRY.

NEW SERIES, VOL. IX.

WHOLE SERIES, VOL. XXIV.

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1885.
PRE FACE.

The new features introduced in the Annual Cyclopedia of last year are continued in the present volume, and some novelties will also be found in its pages. The account of the War in Egypt is accompanied by an unusually clear, full-page map, made for this work, and by illustrations of scenes on the Nile. The Franco-Chinese War in Tonquin is recorded, with illustrations, in the article on China. The reader will also naturally turn to the article on Afghanistan, where two great European powers seem likely to come into conflict. The always interesting subject of Arctic Exploration is illustrated with a map, and a landscape at the farthest point that has yet been reached by voyagers toward the pole. The engravings on steel this year represent President Cleveland, the King of Italy, and General Gordon, who perished at Khartoum. That of the President is accompanied by a carefully prepared biographical sketch. Among the other portraits are those of Vice-President Hendricks, Fanny Elsler, Sir Bartle Frere, Henry Fawcett, Arnold Guyot, Charles O'Connor, Wendell Phillips, Arthur Wellesley Poel (the new Speaker of the British House of Commons), Charles Reade, General Stewart, and General Todleben.

Our Astronomical article is contributed by Prof. Simon Newcomb, of the Washington Observatory; and our articles on Chemistry, Metallurgy, and Physiology, as usual, by Dr. Youmans. The construction and work of the Microscope, not very recently written upon for any cyclopaedia, are here treated fully, and brought down to date, with more than forty illustrations, by Dr. R. H. Ward, one of the best microscopists in the United States. Botany—another science not recently treated by cyclopedists—is contributed by Prof. Dudley, of Cornell University. The manias for Bicycling, Skating, and Tobogganing are recognized and discussed, with illustrations, by good authorities. The article on the Skate is especially interesting, as it exhibits the development of the instrument from the bone-skates of prehistoric man to the latest improved roller-skates. The Tonic Sol-fa System of Music is set forth by the President of the American Association, Prof. Theodore F. Seward; and the Ocarina, a new and peculiar musical instrument, is described and pictured. The disease-theory of Micro-Organisms is given with its latest developments. The other scientific subjects include Liquefaction of Gases, Cholera, the new disease called Miryacht, the new anaesthetic Cocaine, and—what, perhaps, is most immediately important of all—Sanitary Science. The last-named article is contributed by
PREFACE.

Charles F. Wingate, the well-known sanitary engineer, of New York. Under Adulteration of Food, and Canned Provisions, the housekeeper will find valuable information drawn from the most recent investigations.

In addition to the usual article on Geographical Discovery, we have this year one on the opening up to commerce of the great Congo country, illustrated with a map, and one on Mountain Exploration, noting some remarkable achievements; while recent discoveries in Archeology and Paleontology are chronicled and illustrated.

The peculiar Presidential contest of 1884 is recorded in the articles United States, Grover Cleveland, and James G. Blaine, with full statistics of the results; while the articles on some of the States and Territories exhibit movements and tendencies that may give shape to the political struggles of the near future. The topic of Reform in the Civil Service, an important factor in the great problem, is treated by Edward O. Graves, Assistant Treasurer of the United States, who has been among the foremost in the movement. This and the Reform article of our volume for 1883 make together an exhaustive history of the subject. What was done in the business world may be learned from the articles on United States Finances; Railway Service, from the pen of Edward Atkinson; Financial Review of 1884, contributed by Mr. Carey of the "Journal of Commerce"; and the analysis of the peculiar course of the Metal Market. The Exposition at New Orleans and the Electrical Exhibition at Philadelphia are described and illustrated.

Some important decisions in Constitutional Law that were reached in the course of the year are recorded, and the history of a novel question in jurisprudence is given under the title Mignonette Case. The wonderful recent development of taste in ornament is discussed under Decorative Art in America; the proposed Spelling Reform is presented by one of its devotees in its own peculiar style; and the subject of Photography for amateurs is suggestively treated.

Under Obelisk the reader will find not only a description of the New York monolith, but tabulated information concerning nearly all the known obelisks in the world, contributed by the venerable Dr. Weisse, who has made a long study of the subject. The completed Washington Monument is described in an article by itself. Among the other topics of curious interest, treated in occasional articles, are Navigable Balloons, Catamaran, Crape-Stone, Clubs, the Dynamite Gun, Dogs, and Net-Making.

While no yearly record can be absolutely complete within the compass of a single volume, it is hoped that this presentation of the world's progress in 1885 will be found reasonably full and judiciously presented. At the close of the book we give an analytical index that covers the nine volumes (including the present one) of the New Series.

New York, May 1, 1885.
THE
ANNUAL CYCLOPEY

LETTER OF MARCH. During recent years, the news of the discovery of various substances added to foodstuffs has been filled with a great deal of alarm. The public has learned that these substances are used to improve the appearance or shelf life of food products. It is necessary to distinguish between these two classes of substances and to estimate the danger from each. Some substances are harmful and must be avoided, while others may be found in food products.

1. There are two main factors to consider: the first is the presence of substances added to improve the appearance or shelf life of food, and the second is the presence of substances added to improve the taste or texture of food.

2. The largest percentage of substances added to food products is in the form of additives, such as artificial flavoring agents and coloring agents. These substances are often added to products to improve their appearance or shelf life.

3. The second largest group of substances added to food products is in the form of preservatives, such as sodium benzoate and sorbic acid. These substances are added to products to prevent the growth of microorganisms and to extend their shelf life.

4. The use of these substances is regulated by law, and manufacturers are required to label products that contain them. However, the public is often unaware of the presence of these substances in their food products.

5. It is important for consumers to be aware of the substances added to their food products. This knowledge can help them make informed decisions about the food they choose to eat. It is also important for manufacturers to disclose the presence of these substances on labels to help consumers make informed decisions.

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ADULTERATION OF FOOD. During recent years there has been a great popular outcry in regard to the injurious adulteration of various articles of food, and the newspapers and health journals have been filled with sensational statements of the vast amount of dangerous impurities to be found in our food-supply. As a fact, articles of food are so adulterated as to be harmful to health; they are more commonly mistified by the intermixture of other substances in a manner chiefly injurious to commercial interests. It is necessary to distinguish different between these two classes of deceptions, as to estimate the danger from adulteration, and to provide proper safeguards against it. Impurities of food may be divided into three classes: 1. Deleterious adulterations, such as the use of red-lead in cayenne pepper, or charcoal of lead in mustard. 2. By far the largest class, fraudulent adulterations, illustrated by the use of flour in mustard, chicory in coffee, and terra alba in cream of tartar. 3. Accidental adulterations, due to the mixture of all kinds of deleterious substances, owing to some imperfection in the process of manufacture. In these cases the amount of purity is limited, and the effect is unimportant.

The following statistics show the prevalence of adulteration of food as reported by recent official investigations abroad and at home. In March, 1883, out of 1,118 samples examined at the Paris laboratory by government officials, 271 were returned as bad, 281 as passable, 616 as bad, of which 545 were "not injurious," and 71 were pronounced injurious. Wines formed by far the largest portion of articles examined, and, as a rule, were reported as deficient in purity. Of 257 samples of milk, 86 were returned as good, 116 passable, and 158 as bad, but not injurious.

Great Britain, since 1875, the Government returns show the following number of articles analyzed, and the percentage of adulterations:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Number analyzed</th>
<th>Per cent. adulterated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1875-76</td>
<td>15,868</td>
<td>18.10</td>
</tr>
<tr>
<td>1877</td>
<td>11,608</td>
<td>17.70</td>
</tr>
<tr>
<td>1878</td>
<td>15,141</td>
<td>19.56</td>
</tr>
<tr>
<td>1879</td>
<td>15,124</td>
<td>19.35</td>
</tr>
<tr>
<td>1880</td>
<td>17,719</td>
<td>17.47</td>
</tr>
<tr>
<td>1881</td>
<td>17,350</td>
<td>15.56</td>
</tr>
<tr>
<td>1882</td>
<td>14,000</td>
<td>16.50</td>
</tr>
</tbody>
</table>

These totals do not represent foods exclusively, for drugs, wines, spirits, and beer are included, nor do they cover the whole of Great Britain. As a result of the past five years' official supervision in that country, the amount of adulteration was reduced only 1/2 per cent. Of the samples of milk analyzed, the per cent of adulterated varied from 26 in 1877 to 30-35 in 1882; butter, including oleomargarine sold as butter, 12 to 15 per cent.; groceries, 18 to 10 per cent.; bread and flour, 6-8 per cent.; and 10 to 4 to 32 per cent. In Canada, as a result of publishing the names of dealers in impure articles, the amount of adulteration has been greatly reduced. In 1876, when the work began, 51-66 per cent. of the articles examined were adulterated. In 1883, these figures had been reduced to 25-66 per cent.

The reports of State analysts in New York, New Jersey, Massachusetts, Michigan, and other States, all of late date, indicate that staple articles of food, such as are found in ordinary households, are rarely adulterated with injurious substances. The sophistication of such articles would be about as follows: Spices and condiments, 66 per cent.; ground coffee, 45 per cent.; tea, 48 per cent.; sugar, the highest grades rarely, the lower grades, 20 per cent.; sirup, 50 per cent.; milk, when not inspected, 50 per cent.; flour, none; bread, about 2 per cent.; cream of tartar and baking-powders, 44 per cent.; butter, 40 per cent. (by the substitution of other fats); vinegar is rarely adulterated, but is seldom made of cider; olive-oil, 60 per cent.

The character of the adulterants employed...
ADULTERATION OF FOOD.

is as follows: Spices and condiments are adulterated with exhausted spices; ground cereals with flour and buckwheat; bulks of coffee with chicory, rye, and other cereals; tea with exhausted tea-leaves, leaves of other plants, and damaged tea costed to improve the looks; sugar with grape-sugar; sirup with grape-sugar, in many cases all glucose; milk with water, alkaline salts to neutralize acidity, and preservatives, and it is often skimmed; bread with flour, added to increase whiteness, usually used in this country; cream of tartar and baking-powders with gypsum, starches, and "fillers" to increase bulk; butter, other fats are substituted for it, or it is adulterated with foreign fats; olive-oil with peanut and cotton-seed oil. In addition to these articles, several new and peculiar substances are largely used for sophistication. Oleomargarine, for example, is manufactured on an enormous scale. Three factories alone in New York State turn out not less than 4,500 tons a year, and there are five or six other factories in the country. But a small portion of their product is sold to the consumer for what it really is. Fears have been expressed that animal parasites, or diseases, might be introduced into the human system by the use of this substitute for butter; but the best authorities declare that there is no such danger from the use of oleomargarine. As the aim of the manufacturers is to produce a sweet and merchantable article, the use of putrid or ill-smelling fat would be against their interests. Nevertheless, the propriety of compelling dealers to label all packages of oleomargarine with its true name is generally recognized. Lard-cheese, made by combining lard and oleomargarine-oil, and "lardine," an artificial butter, are also largely manufactured. The production of glucose exceeds that of oleomargarine. It is estimated that ten pounds of glucose per capita is made and sold each year in the United States. It is largely employed in making sirups, strained honey, confectionery, and the lower grades of sugar. Prof. C. F. Chandler, and other chemists, pronounce glucose to be a harmless article of food. The frequent statements that sulphuric acid has been found in large and poisonous quantities in glucose sirups, are denied. "Sulphuric acid is employed in the conversion of starch into grape-sugar, but the acid is afterward neutralized by means of milk of lime. If any acid exists in the sirup, it is either in combination with the lime or free, and in very small quantities—a condition strenuously avoided by the manufacturers."

Cases of acute poisoning have been repeatedly charged to the influence of canned foods. Certain acid fruits in cans, such as apples and cherries, and vegetables like tomatoes, set upon lead or tin, and dissolve enough of the metal to cause vomiting, purging, and cramps. Such cases, however, are rare, in view of the enormous consumption of canned products, especially in the West, and in the army and navy.* It is proposed, as a safeguard, to require the year in which the can was packed to be stamped on it.

Besides investigating the character of domestic food-supply, sanitary officials have recently been led to take cognizance of the methods of production and distribution, especially of bread and milk. Bake-shops are usually in cellars, artificially lighted, and are often damp, foul, and unwholesome. They are sometimes used as sleeping-places, and the bakers work long hours and are exposed to sickness, especially from skin-diseases. Dr. W. K. Newton, Health-Officer of Paterson, who has visited several such places, reports: "In one place we find the cat and dog asleep in the kneading-trough, fowls running around and perching on the various utensils, and a general air of filth and lack of thrift. In one shop the kneading-trough was connected with the sewer by means of an untrapped waste-pipe. In another the soil-pipe had burst, and the floor was flooded with liquid filth. The baker said, 'That always happens after a rain-storm.' I have seen a baker mixing his bread with hand and arm covered with the eruption of eczema. He said, 'The doctor told me the dough was good for the disease.' Frequent inspection of such places, as also of dairies, is essential to the public health."

It is barely thirteen years since it was discovered that milk was a potent carrier of infection, yet in a paper read by Ernest Hart, of London, before the International Medical Congress in 1881, it was said that fifty epidemics of typhoid fever, fifteen of scarlatina, and seven of diphtheria had been traced to this source. The total number of cases occurring during these epidemics was 4,800. In one instance reported in the London "Lancet," October, 1883, 220 cases of typhoid fever were traced to a single dairy. Adulteration of milk is confined chiefly to the addition of water, preservatives, alkalis, and to the abstraction of cream. While not directly harmful to health, such adulteration seriously interferes with the nourishment of infants through the impoverishment of the milk, and is believed to be a prime factor in causing the terrible infant mortality in large cities. Harmful results also follow from the use of milk produced from cows fed on distillery-waste, or otherwise improperly cared for, while milk from diseased cows, especially those suffering from tuberculosis, is very dangerous. It is proposed that all milkdealers and dairies should be registered and kept under constant sanitary supervision.

The latest document on the subject of milk adulteration in New York city, "Report on

* A United States Army officer says: "There is hardly a military station in the land where officers and soldiers and their families do not habitually use canned foods; and, as a class, army people are, without doubt, the largest consumers of canned articles, in proportion to their number, of any in the country. In all my army experience (and for many years I have been chief commissary of a military department, and as such have charge of supplying posts with all their subsistence), I have never known or heard of a case of canned-goods poisoning in the army."
ADULTERATION OF FOOD.

Fresh and Condensed Milk," by Charles E. Munsey, Ph. D., says that the daily consumption of milk in the metropolis, in summer, is 500,000 quarts, which retails at six to ten cents, representing $3,000 a day, or $125,000 a year. Formerly one fourth water would be added to this supply, so that the money-saving to the public from official regulation can thus be estimated.

As a result of the strict surveillance of the health authorities, it is rare for the inspectors to find sophisticated milk in retail stores. The public, also, are becoming alive to the quality of the supply, and will not be content with poor milk. No fewer than fifty small dealers now sell pure milk at but little above cost (five cents a quart in summer, as an advertisement), and it is believed that many others will do so, which will prove a great boon to the children of the poor in the hot weather.

Meat inspection in markets is provided for in most large cities; but there is not sufficient surveillance of slaughter-houses and examination of cattle before or immediately after killing to prevent the sale of impure and diseased meat.

Adulteration of food has only recently become a subject of popular interest and legal action in the United States, though it has been discussed and legislated upon in other countries for a long time. In most European countries, laws have long existed to control the manufacture and sale of food. In England, laws to prevent adulteration were passed in 1860 and 1872. The statute now in force was enacted in 1875, and modified in 1879. The laws in force in the United States were based upon these recent English enactments. In Great Britain, public analysts appointed by local authorities are required to examine a certain number of samples each year, for a stated sum. If these are found to be adulterated, complaint is made to a magistrate, and the offender is prosecuted. The appointment of an analyst is obligatory upon the local authorities, but while such appointments are usually made, in many instances no work is allotted, owing to lack of sympathy with the work or to the penuriousness of the authorities. The results obtained, therefore, are not wholly satisfactory. Massachusetts, New York, New Jersey, and other of the older States have long had laws relating to the adulteration of food, and prohibiting the sale of unwholesome meats and provisions, while nearly every State places restrictions upon the weight and other commercial qualities of flour, bacon, lard, salt, etc. In 1879 a prize of $1,000 was offered by the National Board of Trade for the best essay on food adulteration, and for the best form of a law prohibiting the same. Such a law was drafted, and finally adopted by the Legislatures of New Jersey, New York, and Massachusetts, in 1881-'82. A modification of the same law is in force in the Territories and other sections of the country under the charge of the General Government, was submitted to Congress in 1883-'84, but failed to pass. An act prohibiting the importation of damaged and adulterated tea was adopted, and has been successfully enforced. The State laws just referred to define what is meant by adulteration in the case of food or drugs, give State boards of health power to exempt certain articles that are recognized as not injurious to health, and authorize them to appoint analysts and inspectors. The time has been too short to test fairly the operation of these acts, and from insufficiency of funds they have not accomplished all the results that might have been expected. Only a few prosecutions have taken place under them, and their validity has not yet been tested before the higher courts. The best authorities seem to agree that adulteration should be treated chiefly from the commercial, rather than from the sanitary standpoint, and that so far as possible the elaborate machinery, inevitable delay, and cost incident upon a large corps of inspectors and analysts, should be saved. Dr. E. E. Squibb, a high authority on the subject, remarks that the chief aim of all legislation in this direction should be to deter persons from attempting the practice of adulteration, rather than to punish them after committing the act. "The motive power of all adulteration is pecuniary profit or gain, and not to endanger or damage health at all. That adulterations do endanger health, is a mere accident. . . . If the penalty be sufficient and sufficiently sure to make the risk of punishment greater than the profit will warrant, the design to adulterate will be abandoned, and the law will have its natural and wholesome success." Simple exposure through the press of persons guilty of adulteration is the most potent means to this end, as has been found in Canada, where greater success has been achieved in checking adulteration than anywhere else.

In Germany a bill for the prevention of adulteration, based on the English enactments, has been passed. A humorous story current in that country illustrates the extent of adulteration there. It is to the effect that three flies feasted, the first on flour, the second on sugar, and the third on fly-poison; and the last was the only one that survived!

AFGHANISTAN, a monarchy in central Asia, occupying a mountainous country between the Oxus and Indus valleys. It is the only remaining territory separating the Russian possessions in Asia from the Indian Empire. The ruler is Abdur Rahman Khan, Ameer of Afghanistan, whose residence is at Cabul. He was placed on the throne under the protection of the British Government, after the conquest of the country in the Anglo-Afghan war of 1878-'79, and the abdication of his predecessor, Yakub Khan. The extent and population of Afghanistan can not be determined even by estimates, as there are no fixed boundaries, and many of the outlying tribes, which have at some time
been subject to the Ameer of Cabul, are now independent, but may hereafter be compelled to acknowledge allegiance to Abdurrahman; while others are constantly revolting. Even in the center of the country, among the tribes of Afghan blood, the Ameer is unable to exercise effective authority. The social system is tribal and patriarchal, and civil government exists only in a loose, feudal form. The Afghan tribes inhabit the valleys of the Cabul, Helmund, and Argandab rivers, a mountainous region lying between the Hindu Kush and Koh-i-Baba ranges on the northwest, and the Solliman Mountains on the southeast. The rugged and barren country in the southeastern corner of Afghanistan is sparsely peopled with wild tribes of kindred race. The Afghans follow pastoral and agricultural pursuits, but war is their favorite occupation. The tribes into which they are divided are exceedingly jealous of one another, and frequently engage in internecine strife. They only unite for the conquest and oppression of other peoples. The peaceful races inhabiting the northern slope of the mountains afforded a rich field for conquest. The province of Herat was wrested from the Persians in 1735. Only the threats of England prevented the Shah of Persia from regaining possession of Herat during the first Anglo-Afghan war, in 1838–42, and again in 1856. The inhabitants of this province, with the exception of the Saryk Tartars, and those of the west, are of Persian origin. They have degenerated into barbarism to a large extent under the Afghan dominion; yet in many of the tribes, such as the Tadjiks, the Timuris, the Kyzilbashas, and the Parsavans, are still cultivated the habits and traditions of civilization. Though identical in race and language with the Persians, they profess the Sunni form of Mohammedanism, and therefore are but little attracted toward Persia. They would embrace any alliance, however, and bali any protector, so that they might be delivered from the galling and cruel yoke of the Afghans.

On the northern declivity of the Hindu Kush, the fertile valleys that lead down to the Oxus are peopled by diligent agriculturists and peaceful semi-nomads, mostly Uzbek Turcomans. The Afghan power first penetrated into this region near the end of last century, and reached the left bank of the Oxus about fifty years ago. The Turcomans had a powerful protector against the tyranny and rapacity of the Afghans in the Khan of Bokhara, until the power of the latter was broken by Russia, and Shere Ali was enabled, by subsidies received from England, firmly to establish his dominion along the whole bank of the Oxus. The khanates of Maimane and Andkhoi were never thoroughly subjugated, and in revolt at every promising opportunity. In the extreme east the provinces of Rochan and Chigman accept the sovereignty of Cabul only when a military force is sent to occupy the country.

**Diplomatic History of the Afghan Question.**—The chief political interest attaching to Afghanistan is derived from the fact that Great Britain is striving to preserve it as a neutral zone between India and the advancing power of Russia. About fifty years ago, when Russia was established on the north shore of the Sea of Aral, and first turned her eyes toward Turkestan, Great Britain felt the premonition of danger, and sought to bring the central Asian khanates under English influence and protection, so as to establish a barrier against Russia north of the Oxus. The more skillful strategy and diplomacy of the Russians won this favorable position, and gradually transplanted the power and influence of the Muscovite system, which ends in complete political absorption, across the desert steppes, to the fertile and populous oases of central Asia, thus acquiring a military base within striking distance of Herat, the "Key of India." In 1854, when the Russians occupied Chinkand and threatened Khokand, Prince Gortchakoff, in a circular to the powers, indicated a line between the Aral Sea and Isyky Kul, which was to be fortified and would mark the limit of Russian expansion. The reasons that he gave for the extension of the Russian dominions to that line—that the civilizing mission of Russia in Asia required that the people who had been converted from warlike and predatory habits should be defended, in the pursuit of commerce and agriculture, from the depredations of the tribes that were still addicted to plunder—were partly the cause of transgressing the frontier which it was then thought possible to make secure, but were not sufficient to explain the subjection of Bokhara soon afterward, and the conquest of Khiva in 1878, and of Khokand in 1876. Already in 1866 England contended with obtaining Gortchakoff's assurance that the neutrality of Afghanistan should be respected, and with taking care that there should be an Afghan, by extending liberal subsidies to Shere Ali, for the purpose of consolidating and maintaining his rule. Shere Ali's faithless proceeding in entering into secret negotiations with Russia, during the conflict over the San Stefano Treaty, convinced the Disraeli Government of the worthlessness of an alliance with the Ameer. The only way to guard the land-route into India, they concluded, was with English troops. The murder of the English mission at Cabul furnished a cause for the invasion and conquest of Afghanistan. They prepared to establish themselves at Candahar and connect it with India by a military railroad. The prodigious cost of the Afghan campaign in blood and treasure, and the continual sacrifices and dangers involved in the maintenance of outposts and communications in the hostile Afghan country, as a precaution against the remote and visionary contingency of a Russian invasion of India, cre-
...ed dissatisfaction in England and was the chief cause of the downfall of the Disraeli Cabinet.

Afghan Policy of the Gladstone Ministry.—The Liberals withdrew the British troops again behind the Bolan and Khyber passes. Mr. Gladstone, in censoring the Oriental policy of his predecessor, went so far as to declare that Russia would be welcome to extend her territory to the Indian frontier, as the neighborhood of a civilized and orderly state would be preferable to that of barbarous tribes. The real policy of the British Government was, however, to re-establish and strengthen the Afghan military power, broken up by the English conquest. Abdurrahman, whom they set up as Ameer, was not selected as a man in whose fidelity the English could confide better than in that of Shere Ali or Yakub Khan, but as a monarch whom the Afghans would probably accept. Trained under Russian influence in Bokhara, he has proved a shrewd, wily, and resolute ruler. After establishing him in power at Cabul and providing him with treasure and weapons, the English gave no sign of control, but let Abdurrahman Khan unembarrassed in his difficult task. As the protege of the English he needed all his craft and energy to gain the allegiance of the Afghan tribes. Thus the subservient peoples in the north, who had hailed the overthrow of Shere Ali's military power as the deliverance from Afghan tyranny, were brought into subjection by the aid of able lieutenants. Herat was captured by a strategic stroke, and in two or three years the Ameer's authority was restored along the Oxus. Mainzane was not reduced until the summer of 1884, when the town was captured by Ishak Khan. When the first supply of money and arms was exhausted, others were sent to enable Abdurrahman to maintain possession of these rebellious northern provinces, and finally, in 1888, the British agreed to pay their ally a subsidy of a lac of rupees (nearly $50,000) a month, out of the Indian exchequer.

When the British placed Abdurrahman in authority in 1880, they concluded a defensive alliance with him of the same nature as those that formerly existed between them and Dost Mohammed and Shere Ali. The Ameer agreed to follow unreservedly the advice of the British Government in regard to his foreign relations. The British Government engaged to aid in repelling unprovoked aggression on his dominions if any foreign power attempted to interfere in Afghanistan.

The reversal of Disraeli's plan of gaining possession of the line of advance from Herat, and asserting an effectual authority over the turbulent Afghans, is still condemned by the Tories in England, and never has met the approval of eminent military and Anglo-Indian authorities. In returning to the former policy of non-interference, coupled with liberal subsidies, in order to produce "a strong, united, and friendly Afghanistan," Gladstone reasons that the Afghans are so jealous, fierce, and formidable a people that no army would be allowed to advance peaceably through their country, or could spare the force necessary to maintain a line of transport against their attacks. A Russian advance upon India through Afghanistan has been the bugbear of the English for fifty years. An actual struggle between...
the two powers for the possession of India is not now considered possible. Prince Bismarck illustrates its absurdity by the metaphor of a battle between a wolf and a fish, meaning that India's outlets and points of defense are all by sea, and therefore beyond the reach of a land power like Russia. Moreover, against Russia Great Britain could count on a larger measure of loyalty in India than they can ordinarily attract, and also upon the effective support of Europe. But a "diversion" in India, in the event of Russian complications or hostilities with Great Britain, was actually undertaken in the diplomatic contest following the Russo-Turkish War, and is felt on both sides to be an important strategic factor and a telling diplomatic weapon. Because the English have been able neither to cow nor to conciliate the Afghans, they do not suppose that the Russians would find them intractable. The dangers of the immediate proximity of the Northern Cossacks to the English rule in India are appreciated even by the Liberals. However well disposed, the Russians would suggest hope, particularly among the Mohammedans of the north-west, of deliverance from the British Raj; and with dissatisfaction rife throughout India, as at present, the difficulties of government, at least by present methods, would be greatly enhanced. For this reason the British Government still aims to preserve the integrity and power of Afghanistan as a buffer between the two empires. The recent advances of Russia in the direction of Herat have stirred the English Cabinet from their repose.

Fresh Russian Annexeations.—In 1883 Merv made its submission to the Czar. In the spring of 1884 a Russian force occupied and fortified the old strategic point of Sarakhs on the Heri Rud River, within 110 miles of Herat. About the same time the Saray Tartars, who possess the stronghold of Penjdeh, still nearer Herat, and within its natural line of defense, were brought under the protection of the White Czar by Prince Dondoukov-Korsakov at Askabad, April 20th (see Russia). These annexations bring Russia to the confines of the territory defined in the convention of 1873 between Great Britain and Russia as belonging to Afghanistan. In this the districts of Acheh, Sir-i-Pul, Maimene, Shibergan, and Andkoi are declared to be Afghan, though no topographical features are indicated as marking the frontier line.

British Action.—This latest advance of Russia roused the British Government to unquiet activity. First, an armed exploring expedition under Col. Stewart was sent into Baluchistan, in order to assert more effectually British authority in that country. The administration of the district of Quetta, which formed part of the dominions of the Khan of Kelat, was assumed by the Indian Government. It was decided to continue the military railway from Sibi to Quetta. Sir Robert Sandeman was placed in charge of the government, with his residence at Quetta. His administrative district comprises Quetta, Sibi, Pishin, and Thal-Chottali.

Anglo-Russian Afghan Frontier Commission.—After the Russian annexation of Merv, the court of St. James entered into correspondence with the St. Petersburg authorities with reference to obtaining a technical understanding of the Afghan boundaries, which were guaranteed by treaty against Russian encroachments. After a protracted discussion the British Government agreed in the summer of 1884 to a basis of delimitation, which recognized the latest Russian acquisitions, and accepted the proposition of the Russian Government to appoint a mixed commission for the demarcation of the northern frontier of Afghanistan. The general terms of the agreement were, that the river Oxus should form the boundary between eastern Afghanistan and Bokhara, and that where the line leaves the river at Khoja Saleh it should proceed south and west, taking a circular course along the margin of the desert, and terminating on the Heri Rud river at Phuli Khatum.

In carrying out this plan, the English were embarrassed by annoying difficulties at the start, owing to their peculiar relations with their subsidized allies. It was found impracticable to convey the commissioners through Afghanistan with a large British military force, although they expected to meet their colleagues attended by a guard sufficient not only to prevent attack, but to inspire the native population with respect for the military power of England. The Amur was then asked to provide them with an Afghan guard; but this he refused to do. They next appealed to him to guarantee the safety of the expedition. He represented himself as unable to promise security from the attacks of the Durani Afghans of Zamindawar, if they took the direct Candahar—Girishk—Herat route. They were obliged therefore to creep around the edge of Afghanistan by the west and south route through the desert to the Helmund. The Anglo-Indian Commission was not ready to start from Quetta before September. The head of the commission is Sir Peter Lamaden. The Indian contingent was attended by a picket guard of native Indian troops, consisting of 200 cavalry and 250 infantry, with armed followers enough to make a total force of 1,200 or 1,300. The party numbered eighteen officers and civilians. The commanding officer was Lieut.-Col. J. West Ridgeway.

The Quetta Railway.—The British Government, in the spring of 1884, authorized the immediate extension to Quetta of the strategic railroad, built during the Afghan war, in the direction of the Bolan Pass, as far as Sibi. It was the intention to carry the road through as soon as it could be built, to Candahar, when, on the accession of the Liberals, the works were stopped at Rindli, twenty miles from Sibi. The Harmali Pass was subsequently chosen in preference to the Bolan Pass, as the route of the projected railroad. When the Sibi-
AFGHANISTAN.

Quetta expedition was determined upon, an immense number of laborers were set at work in the Harnai Valley, with the intention of finishing it in one season.

Zob Valley Expedition.—On the pretext of guarding the railroad works and assisting in the construction, a large military force was massed upon the Afghan border. The real object was probably to impress the Afghans with the power of Great Britain, and thus insure the safety of the frontier commission, or, in case of Afghan treachery, to anticipate any action of Russia, and march at once into Afghanistan. The raids of a robber chief on the railroad works gave occasion for a further display of military power. After the departure of the boundary commission, a column of about six thousand Choostins and Indian troops, under Brig.-Gen. Tanner, advanced into southern Afghanistan to chastise the marauders. The chief offender was Shah Jehan, head of the Sarun tribe of Kakar Pathans, inhabiting the Zob Valley, a fertile mountain district, about one hundred miles long and twenty broad. There are seven Kakar tribes, all claiming descent from the family of Saul, the Jewish king. Their facial type is clearly Semitic. The Saruns, under their arrogant chief, who boasts the proud title of King of the World, are in war with all their neighbors, and have repeatedly provoked and defied the English. The punitive expedition set out about the beginning of October. Sir Robert Sandeman accompanied it as the political representative of the British power. Shah Jehan sent a message offering his submission, but it was only a ruse to gain time; for Sir R. Sandeman's messenger bringing the required assurances was insulted and barely escaped with his life. The tribesmen of the Fort Valley, with their offering of resistance, surrendered. The Hemzadai Kakars made friends with the invaders, but the Mushehyals and Kigilahas, after sending conciliatory messages, refused to make terms. When the column entered the Zob Valley, Shah Jehan retired to a strong position, two days' march from Akhtarzai, prepared to resist the British troops with a few hundred of his staunchest followers.

The watch-towers and towers of refuge form a peculiar feature of the landscapes on the borders of Persia and Afghanistan. These were built as a defense against the raids of the Turkmans, who until recently were in the habit of sweeping down suddenly upon people at work in the fields, and carrying them off for slaves. One of the strongest is Lasgard, shown in the engraving. It is a fortress, about two hundred yards in diameter, with very thick walls, mainly of earth. It has vaults of brickwork, and over them are brick stables and dwellings, with balconies made of stumps of trees overlaid with branches and floored with dry mud. There were strong stone doors and other means of protection. The pyramidal structure at the left of the picture is the village well.

ALABAMA.

State Government.—The following were the State officers during the year: Governor, Edward A. O'Neal, Democrat; Secretary of State, Ellis Phelan; Treasurer, Frederick H. Smith; Auditor, Jesse M. Carmichael; Attorney-General, Henry C. Tompkins; Superintendent of Education, Henry C. Armstrong; Judiciary, Supreme Court—Chief Justice, Robert C. Brickell; Associate Justices, George W. Stone and H. M. Somerville.

Coal and Iron.—In 1872 Alabama mined only 10,000 tons of coal. Only 290,000 tons in 1879 this had increased to 290,000 tons. In 1880 about 400,000 tons were mined, and in 1884 it was estimated that the output would reach 1,000,000 tons. The demand is constantly ahead of the supply.

The markets of Mobile, New Orleans, and Texas are using Alabama coal, and its use is steadily increasing at all of the Gulf ports; and in the interior of the cotton States, in the small towns and on the plantations, where wood has been the sole fuel, coal is now sold at low prices. In Alabama there are seven distinct kinds of coal, all bituminous. Alabama has cannel coal within its borders; large free-burning lump coal; coking and gas coals in abundance; and coals that for steam purposes are equal to the celebrated Cumberland, or to the best Scotch coals.

The product of iron and steel in Alabama in 1870 amounted to 7,000 tons; in 1880, to 62,966 tons; and in 1888, to 125,000 tons.

Lumber.—In 1880 it was estimated that there were 15,000,000,000 feet of long-leaf pine timber standing in Alabama. The lumber industry in the section of the pine belt west of the Escambia river shows a healthy and steady increase during the past ten or twelve years, which is strikingly manifest in reference to the export of hemp. The following exhibit of the production from the year 1880 to the close of the present business year:

<table>
<thead>
<tr>
<th>Year</th>
<th>Board measure</th>
<th>Cube feet</th>
<th>Cube feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>14,572,292</td>
<td>238,075</td>
<td>284,069</td>
</tr>
<tr>
<td>1881</td>
<td>18,166,824</td>
<td>311,811</td>
<td>358,800</td>
</tr>
<tr>
<td>1882</td>
<td>18,166,824</td>
<td>311,811</td>
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<td>1883</td>
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<td>358,800</td>
</tr>
<tr>
<td>1884</td>
<td>18,166,824</td>
<td>311,811</td>
<td>358,800</td>
</tr>
</tbody>
</table>

Of shingles, mostly cypress, an average of 3,500,000 are produced every year. A considerable quantity of timber from the western confines of the pine region in this State finds its way by the Escambia river to the mills at Pascagoula. Shipments of square timber from the upper part of this district are made northward by the railroads. Its whole production in lumber and timber does not fall short of 60,000,000 feet, board measure. The forests fronting Mobile bay have in a great measure been destroyed by the production of naval stores. Not less than 600,000 acres of fine timber-lands have been given over to destruction by the methods followed in the prosecution of that industry during the twenty-five
years previous to 1890, in the counties of Mobile and Baldwin, and more recently on the lands of the pine belt contiguous to the Mobile and Ohio Railroad. An equal area will be subjected to the same devastation within the next five or six years.

The belt of long-leaf pine traversing the center of Alabama from its eastern limits to near its western borders, extends over 550 or 600 square miles. By numerous measurements it was ascertained to average fully 5,000 feet to the acre. The amount of timber standing has been estimated at 1,750,000,000 feet, board measure.

The lumber business is most actively carried on along the North and South division of the Louisville and Nashville Railroad in Chilton and Autauga counties. Eighteen million feet, board measure, were shipped in 1880 from the mills of one company to Northern markets; and 50,000,000 feet can be taken as the annual average product of the mills along the above-named railroad line. To these must be added the 24,000,000 feet produced by the mills along the Selma, Rome, and Dalton Railroad, bringing the annual product of this interior timber belt to 92,000,000 feet. In view of these facts, and the estimated amount of timber standing, its timber supplies will be exhausted in less than a quarter of a century from 1880. The less extensive pine-forests in the interior of Alabama, fronting Coosa river, and the detached patch in Walker county, bear a timber growth equal to any in the State, which has been estimated to add another 1,080,000,000 feet to its timber wealth.

Cotton-Factories.—On June 1, 1880, Alabama had 55,072 spindles and 1,060 looms in operation; on Jan. 1, 1884, 82,057 spindles and 1,614 looms.

Education.—The latest report of the Superintendent of Education covers the year ending Sept. 30, 1888. The amount of the public school fund for the year was $418,006.32, of which $186,783.12 consisted of the poll-tax collected and retained in the counties, $190,000 was the annual legislative appropriation, and the balance consisted of the income of investments and unexpended balances. Of the total, $263,652.47 was apportioned to cities and counties. The expenditure during the year were as follow:

| Amount paid to teachers of white schools | $299,798.58 |
| Amount paid to teachers of colored schools | 167,897.97 |
| Amount of salaries of county and city superintendents | 12,933.97 |
| Amount paid to normal schools | 15,000.00 |
| Amount of contingent expenses | 668.18 |
| **Total** | **$445,497.50** |

The foregoing statement of expenditures included $31,571.64, derived from local sources in Mobile county and city.

**Summary of Statistics.**

| Number of children enumerated, white | 225,948 |
| Number of children enumerated, colored | 113,668 |
| **Total** | **339,616** |

**ALABAMA.**

| Number of pupils enrolled in white schools | 130,088 |
| Number of pupils enrolled in colored schools | 69,698 |
| **Total** | **199,786** |

| Average daily attendance in white schools | 71,973 |
| Average daily attendance in colored schools | 31,834 |
| **Total** | **103,807** |

| Total number of teachers employed | 4,717 |
| Average monthly pay of teachers in white schools | $23.70 |
| Average monthly pay of teachers in colored schools | $13.30 |
| Average duration of white schools, in days | 69.3 |
| Average duration of colored schools, in days | 49.9 |
| Amount expended in 1888 | $445,497.50 |
| Amount expended in 1889 | $505,401.96 |
| **Increase** | **$59,904.46** |

| Number of pupils enrolled in schools, 1888 | 220,821 |
| Number of pupils enrolled in schools, 1889 | 177,445 |
| **Increase** | **43,376** |

**Political.—** The Democratic State Convention met in Montgomery on the 4th of June, and nominated the following ticket:

For Governor, Edward A. O'Neal; for Secretary of State, Ellis Phelan; State Treasurer, Fred H. Smith; Auditor, M. C. Burke; Attorney-General, Thomas N. McClenan; Superintendent of Education, Solomon Palmer.

The platform adopted contained the following:

Ten years ago, with a tax rate of 7½ mills, there was produced only about $800,000 of revenue, and the expenses of government were about $1,800,000; while now, with a rate of 64 mills, we have raised and expended for the past year about $1,100,000, and the result is that notwithstanding the large amount lost by the late State Treasurer's default, there is now in the Treasury a larger amount, over and above liabilities, than at any previous time in the State's history.

The management of the State convicts, a most troublesome and difficult matter theoretically and practically, though new and imperfect in some respects, is approaching a solution in a manner consonant with the humane ideas of the age; at the same time that justice is done to the guilty, the State's financial interest guarded, and the health and comfort of convicts being now carefully protected.

The Republican State Convention was held in Montgomery on the 15th of April. Delegates to the Republican National Convention to be held in Chicago were chosen, and presidential electors were nominated. The platform contained the following:

We demand in the interest of home labor and the development of the vast wealth of Alabama in iron, coal, and other minerals, as well as for the encouragement of all our now growing and progressive industries, and to afford the farmer a market at his
door for all his products, that customs duties, laid for the proper expenses of the national Government, shall be distributed with a view to the protection of and fostering of all these great interests, and to the end that we may continue to pay our labor, as now, more than double the prices paid in England and other foreign countries.

We denounce the present convict system of Alabama, inaugurated by a Democratic administration, as an outrage on humanity, a disgrace to any civilized State, as degrading to honest labor, as tending to reduce the laboring classes to a competition with penitentiary convicts, and as tending to impede immigration to our great State.

The election on the 4th of August resulted in the choice of Democratic State officers and a Democratic Legislature, substantially without opposition. On the 4th of November Democratic Congressmen and presidential electors were chosen by large majorities.

Finance.—During the past two years unusual efforts have been made toward the collection of the various items of revenue. Of taxes due on former years, there was collected in the year ending Sept. 30, 1883, $208,190.77, and in the year ending Sept. 30, 1884, $35,390.84, while the aggregate of balances against tax-collectors at the latter date was only $25,093.33, nearly all of which is in suit. In the two years, the total receipts at the treasury, from the owners of the Alabama and Chattanooga Railroad lands, from the surerties and the estates of the late treasurer, and from back taxes, were $114,910.59. The balance in the treasury to the credit of the general fund on Sept. 30, 1884, was $124,518.38. The receipts from all sources during the first quarter of the present fiscal year (to Dec. 31, 1884) may reach $150,000. The current expenses of the government for this period, including the cost of the current legislative session, are not over-estimated at $130,000; and the January (1885) interest on the bonded debt, to be provided and set apart by December 31st, is $160,200. The act of Feb. 22, 1883, to levy and collect taxes for the support of the State and the counties thereof, by a vote of the qualified electors, to levy and collect a school tax; 2. That the salaries of county superintendents be increased; 3. That all money for the schools, except the poll tax, be paid from the State treasury, and none by collectors upon the Auditor’s warrants; 4. That section 988 of the code be so amended as to authorize the sale of sixteenth-section lands for cash; and 5. That appropriations for certain normal schools be increased.

Education.—In the fifty-one counties from which reports have been made, a greater number of schools have been taught for longer time and by better teachers than heretofore. The superintendent makes a number of recommendations, the more important of which are: 1. That counties, cities, townships, and separate school districts be authorized to levy a tax for the support of public schools; 2. That the salaries of county superintendents be increased; 3. That all money for the schools, except the poll tax, be paid from the State treasury, and none by collectors upon the Auditor’s warrants; 4. That section 988 of the code be so amended as to authorize the sale of sixteenth-section lands for cash; and 5. That appropriations for certain normal schools be increased.

Agriculture.—The Agricultural Department went into operation on Sept. 1, 1883, under the direction of E. C. Betts, of Madison County, who had been appointed commissioner.

Hospital for the Insane.—The enlargement of the Hospital for the Insane, for which $100,000 was appropriated Feb. 26, 1881, has been completed in the addition of two wings, each three stories high. The entire building is of brick, and as nearly fire-proof as possible. It is lighted by gas made on the premises and is heated by steam. It is abundantly supplied...
with hot and cold water, and is fitted with baths and closets of the most improved kind. The steam-pressed brick of the new wing were made in the yards of the hospital; and the bedsteads, tables, seats, and other furniture needed, were manufactured in its own shops. The hospital now has accommodation for 700 patients. Since Sept. 30, 1882, 455 patients have been admitted and 242 have been discharged. On Sept. 30, 1884, the number of patients was 630, of whom 539 were white and 91 were colored. Of the aggregate, 539 were indigent, and 41 were paying patients. In the year ending Sept. 30, 1885, the hospital received from the State $71,344, and in the year ending September 30th last, $73,789.75.

Deaf and Dumb and Blind Asylum.—In the Institution for the Deaf and Dumb and the Blind at Talladega, 106 pupils have been enrolled, and the average attendance has been 83. Of the whole number enrolled, 72 are deaf-mutes, and 34 are blind. The cost of maintenance, for the year ending Sept. 30, 1884, was $10,269.54; or, $203.38 for each pupil.

Supreme Court.—On October 25th, Chief-Judge Brickell resigned, and the Governor appointed Associate Justice Stone in his place. David Clopton was appointed Associate Justice.

November Election.—The result of the November election, as officially declared, was as follows: for Cleveland electors, 92,973; for Blaine, 89,444; Butler, 762; St. John, 610. Eight Democratic Congressmen were declared elected.

Legislative Session.—The Legislature met on November 11th, and was in session at the close of the year. On the 26th, James L. Pugh, Democrat, was re-elected United States Senator by a nearly unanimous vote.

Alaska. An act of Congress passed May 17, 1884, provides that the territory that was ceded to the United States by Russia, by the treaty of March 30, 1867, now known as Alaska, shall constitute a civil and judicial district, of which the temporary seat of government shall be Sitka. A Governor, District Judge, Clerk of the District Court, District Attorney, and Marshal, are provided for. There are to be at least two terms of the District Court each year, one at Sitka and the other at Wrangel. The clerk is ex-officio secretary and treasurer of the district, recorder of deeds, mortgages, etc., and register of wills. He is required to establish record offices in Sitka and Wrangel, and the District Court may also establish such offices at Oonalaska and Juneau City, if it shall deem it expedient. Four commissioners are appointed, residing one at Sitka, one at Wrangel, one at Oonalaska, and one at Juneau City, who, besides the powers and jurisdiction of Commissioners of the United States Circuit Courts, exercise the duties and powers, civil and criminal, now conferred on justices of the peace under the general laws of the State of Oregon, so far as applicable. They also have testamentary and probate jurisdiction, subject to the supervision of the district and the powers of notaries public. He shall appoint four deputies for the named localities respectively, who are constables. The general laws of Oregon force at the passage of the act are to be the law of the district, so far as may be applicable and not in conflict with this act or the laws of the United States. Alaska is created a land district, Sitka the land-office, and the commissioner there ex-officio register thereof. The officers mentioned, except deputy-register, are appointed by the President, with the advice and consent of the Senate, for ten years. The Governor and judge receive an annual salary of $3,000; the attorney, clerk, of $2,500. J. H. Kincaid has been appointed Governor.

The Secretary of the Interior is required to make needful and proper provision for the education of the children of school age in Alaska, without reference to race, the amount provision shall be made therefor not to exceed $25,000 is appropriated by the act.

Other acts of 1884 appropriate $800,000 for the support of Indian agents; $15,000 for the use of United States, $1,000,000 for the purchase of public lands; $15,000 for the purchase of land irrigation works; $2,000,000 for the purchase of lands for the use of Indian tribes.

Anglican Churches. The Church land has enjoyed a year of relative quiet and excitement all controversies that disturbed during previous years appear subsided for a time. The most notable incidents of the year were the acceptance of the new Episcopal Church, the consecration of the Bishop of Manchester in England, the consecration of the Bishop of the North American mission in Canada, and the consecration of the Bishop of the Church of England in California.

The Church Missionary Society. The meeting of the Church Missionary Society held in London, May 20th. The report of the Committee on Missions in the United States was read, and the report of the Committee on Missions in the British Empire was also read. The total income of the Society for the year was £232,448.

The Society for the Propagation of the Gospel in Foreign Parts held its annual meeting in London, June 23rd. The report of the Committee on Missions in the United States was read, and the report of the Committee on Missions in the British Empire was also read. The total income of the Society for the year was £232,448.
income of the society for the year had been £109,572, the largest sum it had ever raised in the same time. The remittances for foreign parts had been increased by nearly 20 per cent. An examination of the society’s records lately made showed that it had expended on the foundation and development of the church in Australia, £235,850; in Africa, £122,794; in British North America, £1,627,601; in the West Indies, £571,706; in New Zealand and the Pacific, £97,501; in Asia, £1,582,488; and in Europe, £82,506. The number of ordained missionaries on the society’s lists was now 520.

The Church Pastoral Aid Society. — The forty-eighth meeting of the Church Pastoral Aid Society was held May 8th. The Earl of Shaftesbury presided. The ordinary income of the society for the year had been £34,688. During the past ten years it had contributed £24,000 to ministerial work in the poorer parishes of the metropolis, employing an average seventy curates and thirty-six lay agents yearly.

The Church Army. — The “Church Army” is an institution that has been organized to operate, on the plan of the Salvation Army, among the great masses of the people “who are outside of all religion.” Its first great meeting was held May 28th, under the presidency of the Bishop of Oxford. A report was read by the Rev. W. Carlisle, giving a sketch of the rise of the organization. It had started about two years before, almost simultaneously at Richmond, Oxford, Bristol, Tunbridge, and Kesington. It had now a general organization, but worked in districts under the guidance of the local clergy. It was now the largest part of the lay department of the Church Parochial Mission Society, and had the patronage of many of the churches. It opened eighty-nine stations, fifty of which were in active operation, in addition to which Church Army missions had been conducted, and more than three thousand adult converts had been confirmed. A training house had been established at Oxford in October, 1883, at which thirty-nine officers were under instruction. The work of the Church Army had been carried on with small expenditure, and the poor themselves had subscribed to keep the stations open. The chairman, the Bishop of Oxford, made an address, commending the enterprise.

The Liberation Society. — The annual meeting of the Society for the Liberation of Religion from the Patronage and Control of the State, was held in London, May 7th. The report of the Council stated that the income of the society for the year had been £8,896, and its expenditures £8,541. The report also reviewed the progress that had been made during the year toward the accomplishment of the object that the society is trying to promote. It set forth that, as the Government had prepared, and would, if practicable, introduce a bill still further to amend the burial laws, it was hoped that it would be unnecessary to proceed with Mr. Richard’s Cemeteries Bill. The Government had acceded to the request of the Executive Committee of the society in appointing a Nonconformist as one of the Charities Commissioners; and a Select Committee on the operation of the Charitable Trusts Acts had been appointed, whose inquiry the society’s friends were urged to assist in making complete and effective. The report of the Royal Commission on Ecclesiastical Courts was criticised as showing that the members of the Establishment were indulging in dreams of obtaining spiritual independence without relinquishing the favors of the state; whereas, it was declared, freedom could only be obtained by the abandonment of privilege. Resolutions were adopted condemning the recommendations of the Royal Commission on Ecclesiastical Courts; concurring in the motions of which notice had been given by Mr. Richard, Mr. Dillwyn, and Mr. Peddie, for the disestablishment of the Church in England, Wales, and Scotland, respectively; expressing satisfaction at the result of Mr. Will’s motion for the removal of the bishops from the House of Lords; and urging the extension of the efforts of the society among the rural population, in view of the enfranchisement of the agricultural laborers.

The Rétalistic Controversy. — Baron Pollock delivered judgment, January 29th, in the Queen’s Bench division of the High Court of Justice in the action of quare impedit, brought by Sir Percival Heywood against the Bishop of Manchester, for refusing to institute Mr. Cowgill to the living of Miles Platting. The justice recited the facts of the case, which were not disputed, stating that the bishop had assigned as his reason for not instituting Mr. Cowgill, that clergyman had, as curate of Miles Platting, committed various acts of which the canon law, for which he might have been subjected to ecclesiastical censure; that he did not think it right to run the risk of Mr. Cowgill’s repeating those offenses as incumbent, and had therefore sought an interview with him, and asked a series of written questions, the intention of which was to ascertain whether Mr. Cowgill would desist from those breaches of the law if instituted to the living; and that the result of the interview was to assure the bishop that it was exceedingly unlikely that he would so desist. This, Baron Pollock regarded as a legitimate exercise of the discretion confided to the bishop to refuse to institute an incumbent whom he could reasonably and lawfully regard as unfit for the office. Baron Pollock did not hold that the bishop was in any way obliged to refuse institution to Mr. Cowgill. He intimated that if the bishop had chosen to regard the ritual offenses committed under another incumbent as insufficient grounds for assuming that they would be repeated by Mr. Cowgill as incumbent, he might in his discretion have done so; but that he had a discretion in the matter, and that he had exercised that discretion on grounds that the law would hold to be suffi-
cient. He therefore gave judgment for the de-
defendant, the Bishop of Manchester, with costs against Sir Percival Heywood.

Baron Pollock pointed out that Mr. Cowgill had virtually been deprived of his living for acts which, if they had been brought before an ecclesiastical court, would not, in the first in-
stance at least, according to recent usage, have
involved deprivation, but only a monition to
abstain from them. He also implied that Mr.
Cowgill's mere refusal to answer the bishop's ques-
tions could not have been made a lawful
ground for refusing to institute him; but that
the true ground was his persistent breach, as
accurate, of the ecclesiastical law as laid down in
the recent judgments of the Court of Appeal,
and the presumption so set up that he would
continue in the same course of conduct. On
this view, the questioning was regarded only
as opening up to the bishop a chance of escape
from the assumed duty of refusing to institute
Mr. Cowgill, and not as constituting the ground of
refusal.

The Convocation of Canterbury.—The Convoca-
tion of Canterbury met February 18th for the
dispatch of business. Protests were present-
ated against the projected organization of the
"Church of England Middle-Class School Com-
pany," which proposed to adopt the conscience
clause of the Education Act, under which any
person can withdraw his child from the reli-
gious instruction of the school. The contem-
plated adoption of the conscience clause was
condemned in the Lower House. The arch-
bishop, in bringing before the Upper House
the report of the Ecclesiastical Courts Commis-
sion, advised careful deliberation in considering
it, suggesting that the first opinions on the
subject were not likely to be the final ones,
and advised that the House await the action of
the Committee on the Relations of Church
and State of the Lower House, upon whom it
would fall to act as the adviser of Convoca-
tion. The Committee of the Lower House on
this subject reported the results of a conference
it had had with the Committee of the Convo-
cation of York, and submitted several recom-
mendations, one of which was of a tech-
nical character. One of the recommendations
says that "in accordance with the constitu-
tion of the church and realm, the right of ap-
peal for the maintenance of justice in all eccle-
siastical cases lies to the Crown"; but the
committee, while fully accepting the principle
laid down by the commissioners, that "the
function of such lay judges as may be appoint-
ed by the Crown to determine appeals is not
in any case to determine what is the doctrine
or ritual of the Church," feared that their rec-
ommendations failed to give sufficient security
for carrying this principle into effect; and they
were convinced that any attempt to settle ques-
tions of doctrine or ritual by such lay judges
in possible opposition to the determination of
the spirituality would lead to results dangerous
to the truth and to the best interests of the
Church and realm. In the Upper Hou-
sition was presented from army officers
subject of making more liberal provi-
sion the instruction of soldiers, who, it was
seen were by their training and discipline
usually amenable to religious influence,
might, after the expiration of their
service, become useful to the Church.

The Convocation of York was asked to
a committee, for the joint action of the
provinces, on the subject of "the spiritu-
of the masses." A report was made
mending that the Church should ascer-
tain services of a class of persons to be called
"chaplains" and "assistant readers," who should
read the Scriptures to the best of their
ability, and, with such part of the service as
they thought fit, be read by, a layman, or an
approved service, in consecrated buildings,
or, after the services of the day, in cons-

The Houses of Convocation met again
18th. The Bishop of Lincoln, in the
House, called attention to the subject
translated the Book of Common
into foreign languages, and urged that,
principles of the Lambeth Conference of
when resolutions were approved declar-
"authority" should not be affixed to
onions unless they were approved first by a
board, and then by a general board. The
bishop showed that the rules of the C.
Knowledge Society provided for all such
lations being made honest and true. The
bishop of Canterbury was made respon-
directly or indirectly, for the trans-
the Scriptures and of the Book of C
Prayer Book; and had to appoint the com-
who translated, by whom every care was
The resolution of the Bishop of Linon
ultimately withdrawn. The subject of
ing measures by which the Church could
saved from scandals. It was one which had
cently occurred, where a clergyman jen
leased from penal servitude for a
crime had been enabled to appear in the
as a locum tenens, or occasional,
was referred to a committee. In respon
to a graminex from the Lower House, a
committee was appointed to consider the
procuring a church house for the pro-
vision in which the Convocation might meet
bishops were requested to inquire in the
matter of complaints that had arisen,
by some instances church people had been
led in the consecrated parts of cer-
should take because the fees in the consecrated
were exceedingly high. The House of
from the regulations it had adopted con-
ing the appointment and employment
readers, the provision allowing the rea
ANGLICAN CHURCHES.

Having regard to the necessity for strengthening the paternal authority of the bishops, this House recommends that the usual steps be taken by the diocesan authorities to enact any measures that may be found necessary for supplying the deficiency of direction and arbitration on doubtful points of doctrine or ritual which it is desirable that the opinion of the bishops of the province in which the case arises, or, if it be thought advisable, of both provinces, shall be required in the specific points of doctrine or ritual which are involved, and that such opinion of the said bishops should be made public." The report of a committee on the subject of forming a House of Laymen to advise or confer with the Convocation was affirmed. It was thought that the members of such House should be appointed by the diocesan conferences of the province, the dioceses of London sending ten members, the dioceses of Winchester and Rochester six each, and each of the other dioceses sending four members, while the archbishop should have the right to appoint ten members; and that its sessions should be convened and opened by the archbishop, to whom also should be submitted for approval the name of the elected chairman. Rules were laid down for the guidance of the House of Laymen, and defining its relations with the other Houses of Convocation.

The Church Congress.—The Church Congress met at Carlisle, September 30th. The opening sermon was delivered by the Archbishop of York, the Bishop of St. Andrews, and the Bishop of Derry. The Bishop of Carlisle presided at the sessions of the Congress. The first subject for the formal discussions was, "The Duty of the Church with regard to the Overcrowded Dwellings of the Poor in Towns and the Country." Papers were read upon it by the Bishop of Bedford, Major Rankin, M. P., the Rev. James M. Wilson, Head-Master of Clifton College, Mr. William Ingleby, President of the Church of England Workmen's Society, and the Rev. C. W. Stubbs. The subject of "The Rights of Parishioners in Parish Churches" was considered in papers by Archdeacon Hannah, Mr. H. Clark, Archdeacon W. R. Nevill, and Canon Perry. On the subject of "Popular Literature and Infidelity," papers were read by the Rev. J. E. C. Welldon, Head-Master of Dulwich College, the Rev. E. Macaulay, editor of "The Leisure Hour," and the Rev. W. H. Hereule, Chaplain to Clerkenwell Prison (who spoke especially of obscene literature). In the sessions of the second day, papers were read: "On the Report of the Ecclesiastical Court Commission with Special Reference to Legislation," by Sir R. A. Cross, M. P., Archdeacon John Pilling-
ANTIPHRON. See DRUGS, NEW.
ANTISEPTICS. See SURGERY.
made pottery, of an ornamental character, resembling in type that of the Missouri graves, but of better finish; stone implements, not in large numbers, but including some very fine and interesting chipped and polished specimens; implements and ornaments made of bone; terra-cotta and shell beads, and a clay pipe with an ornamental bowl, and an elaborately carved stone pipe, representing a man holding a cooking-pot, which formed its bowl, were found in the graves. At one point in the cemetery, vestiges were found of the log-floor of a building that had been destroyed by fire, under circumstances indicating that it was of the period of the stone graves. Similar mounds have been opened under the direction of the Bureau of Ethnology in Caldwell County, N. C. The "Nelson Mound," which is on the farm of

peared to have been molded in the hull of a nut; at another point a cubical mass of water-worn bowlders, but with no bones, specimens of art, coal, ashes, or indications of fire on or around it. But some of the stones of the vaults and the earth immediately around them, and some of the bones of the inclosed skeletons, were fire marked. Mr. Putnam and his co-laborers have recovered large quantities of interesting relics from the mounds and aboriginal works near Madisonville, and on the Little Miami river, in Ohio. At Madisonville, where are the remains of a large cemetery, finger-rings of copper were discovered, still on the finger-bones. The Turner group of thirteen mounds and two earth circles, inclosed by two
circular embankments, in Anderson township, Hamilton County, Ohio, has been carefully and thoroughly explored, with the earth examined showyly by showful. Thousands of objects have been recovered, and valuable facts regarding the structure of the mounds have been obtained from them. Several of the mounds had within them "altars," or basins of burned clay, one of which contained about two bushels of ornaments made of stone, copper, shells, teeth, and thousands of pearls. Several of the copper ornaments were covered with native silver, which had been hammered out into thin sheets and folded over the copper; and one copper pendant seems to have been covered with a thin sheet of gold—the first instance in which native gold has been found in the mounds. The ornaments, cut out of copper and mica, are of many forms, some of them peculiar—scrolls, scalloped circles, and oval pendants of copper; circles and bands, and heads of animals in mica, the features of the animals being emphasized by a red color; and a grotesque human profile in mica. Several masses of meteoric iron and ornaments made from it were found on this altar. All of the metallic ornaments were manufactured by hammering. On another altar were found several terra-cotta figurines of a character heretofore unknown from the mounds. The peculiar manner of wearing the hair, and the peculiar head-dresses and large, button-like ornaments shown by the human figures, were of particular interest; and with them were found two dishes, carved from stone, in the form of animals; a serpent cut out of mica; several hundred small quartz pebbles; nearly three hundred astragal of deer and elk; and ornaments of copper, shells, etc. The larger of two mounds within the earthwork on the hill contained a small central tumulus, surrounded by a carefully built stone wall, and covered by a platform of stones, over which was a mass of clay. On this wall were two depressions, in each of which a body had been laid, and outside the wall in the surrounding clay were found several skeletons, one of them lying upon a platform of stones. With these skeletons were found a copper celt, ornaments made of copper and shell, and two large seashells; and with each of them a pair of spool-shaped ear-ornaments of copper. The thirteen mounds differ much in their structure. Under one of the large altar-mounds was a large ash-pit, six feet deep, similar to the ash-pits of which a thousand had been discovered in the cemetery at Madisonville, the object of which had not been explained. Mr. Putnam's accounts of these ash-pits have, however, suggested to Miss Alice C. Fletcher a similarity between them and the inhumed caches of the Omahas, who, after having abandoned them as caches, use them for ash-pits, and when they have been nearly filled up, cover them with earth. In other mounds, pits, or beds of ashes, containing bones, were found; in one, a copper celt, lying on the bones of a hand, with casts of the papillae of the fingers distinctly preserved in the carbonate of copper. On mound, stratified and of unusual structure, contained four circular pockets, or excavations, each ten inches deep and fourteen inches in diameter, about four inches apart. Three of them contained a dark, pasty substance that became hard on drying, and the other one fragments of stone, burned clay, and earth. A further examination of the larger of the altar-mounds, made in 1888, showed it to be of a far more complicated structure than had been made evident by the work of the previous year. It was found to have been surrounded by a stone wall two feet high, below what had been supposed to be the natural level of the ground, at one place in which, higher and wider than the rest, was a cavity covered with stones erected in a dome-shape, containing the burned remains of a human skeleton, with articles, among which was a carved piece of a deer's antler. Within this wall was a bed of burned clay, and under that a series of pits about three feet in diameter, and from four to nine feet deep, connected with tunnels or tubes eight feet long and a foot in diameter, having a slight dip downward from the pit, and ending in a small vertical tube, which extended to the "concrete" or gravel layer, above the burned clay. The walls of the pits showed the effects of great heat, and at the bottoms were ashes containing fragments of burned bones. Two of the pits had dome-like coverings of clay, in one or two of which were two small holes. The investigation of this branch of the subject has only begun. Many other mounds were examined, all of which presented their several points of interest, the description of which would involve much detail. From one of them were recovered seventy-one skeletons, each of which had been surrounded with stone at the time of burial, and the skeletons a large number of articles. Several of the mounds in this part of Ohio, and, in the Scioto Valley, which were described by Squier and Davis, and by Hildreth and Atwater, have been greatly worked over by the mining of the ground. Dr. Charles C. Abbott, who has recovered many thousand stone implements from the gravels of Trenton, N. J., has found among them two spear-heads of native copper, a worn fragment of a human tooth, in situ, about twelve feet from the surface and near it, two years later (April 18, 1884), the fragment a jaw, which are regarded as undoubtedly the same age as the gravel. These discoveries are considered important, as removing the doubts respecting the actual occurrence in the gravel of a large portion of a human skull that had been given Dr. Abbott, with a statement by the giver that he had found it there. Mr. Bandelier's investigations in New Mexico—Mr. A. F. Bandelier has been engaged for number of years, under the direction of the Archaeological Institute of America, in examination of the ruins of the ancient Pueblo
ARCHAEOLOGICAL DISCOVERIES. (AMERICA.)

He has determined that the area occupied by the former abodes of the sedentary Indians of New Mexico is limited on the east by the region sixty miles west of the river Pecos in Mexico, and extending westwardly to about one hundred miles of the Colorado to the north it stretched nearly to an altitude of latitude. As for its limit, it is known that, at the time of discovery, all the ruins of stone or adobe and southern Arizona, and in the eastern part of New Mexico, and as far as Rio Grande as San Mecael, had been cleared prior to the coming of the Spaniards.

The general disposition of these ancient houses is indicated by that of the permanent ones, with their timbers and cultivated plots. The particular location is frequently marked by the strength of the position. For example, during 1888, he examined a considerable number of pueblos and small houses, including some that were associated with the history of Spanish conquest, and others which had none. The conclusion of his studies among these ruins, Mr. Bandelier mentions observations of dwellings in caves and "cave villages" on the head-waters of the Sapillo, a tributary of the Gila river, and on the Gila itself. In connection with these peculiar structures, which "are perhaps larger than the open-air ruins, compactness compensating for the limitation in space," it is pointed out that wherever the topography permits, villages were erected in open spaces. A report has been published, through the Archeological Institute, of an archaeological tour that Mr. Bandelier made in Mexico in 1881. It contains accounts of the explorer's observations of the mounds of Cholula and of the ruins at Mitla. Among the most remarkable relics of Aztec civilization are the "Sacrificial Calendar Stone," the "Sacrificial Stone," and the idol called Teotihuacan, all of which were dug up in the Great Plaza of Mexico. The Calendar Stone is of porphyry, and bears the...
design illustrated in the engraving. It is a circle eleven feet two inches in diameter, in low relief, composed of concentric circles and divided off into regular panels, each of which of Sargon, as about 2750 B.C. This is the latest date yet established, if the text from a Babylonian terminus, or stone, contains the charter of freedom to the city of Bit yahbu in return for the services of Merodach, the king Nebuchadnezzar (B.C. 1120). Another records how Nebel IV. c. 900, set aside the temples of certain royal for the restoration temple of the sun Sippara, which he destroyed by the fire for its maintenance. This tablet contains the services, sacrifices and festivals of Babylonian worship. An inscription, Assur-nasir-pal, King of Assyria, B.C. 860, is that for the inser straight lines between sign that finishes or and that which beg next. Among other ments are a Babylon endar containing e of the superstitions: ing lucky and unlucky etc., which prevailed the people; letters, pur and dispatches, and business papers. C to the impression that has prevailed old Babylonian libraries were destroyed by Aryan invaders after they had copi tablets and carried them to Nineveh. discovers made by Mr. Rassam show libraries survived the invasion, and a cuneiform literature endured and was a comparatively late period. The new published volume contains the proofs that I was revived in Chaldea after the fall of Assyria; that the study of the sacred legends, and poems was continued during period of the Persian kings, and under and even Roman rule, and that distinct existed in the temples. Among the incised tablets are some grammatical and graphical tablets from the temple attached to the shrine of the great god of Nebo of Borsippa, which are dated in the century of Cyrus and Artaxerxes; a cylinder of chorus Theos, of B.C. 290, and some table bear dates proving them to have been late as B.C. 29.

Inscriptions of Nebuchadnezzar.—Two inscriptions, of little historical importance, of Nebuchadnezzar, have been found in the B part of the eastern range of Mount Leb about two hours' distance from the vil Hermon, on the river Orontes. They
The inscriptions relate to an account of the buildings the king was constructing in Babylon. An inscription of Nebuchadnezzar, deposited in the New York Museum of Art, was provisionally translated in November, 1884, by J. E. O'Conor, S.J. It refers to the rebuilding and restoration by Nebuchadnezzar of the Temple of the Sun, at Sippara, and relates that “the God Merodach, the great Lord, in mighty power raised me up for the restoration of the temple and the rebuilding of the temple. A lofty name he proclaimed. The Temple of Parra, the Temple of the Sun, at Sippara, which long before me was in decay and needed repair ... I rebuilt.” Then, after relating that the work was not done by any special command of the god, but under the impulse of “the fear of his divinity” and with his encouragement, the king offers a prayer: “Sama, great Lord, upon the joyful entering into the Temple of Parra, thy glorious temple, into the works of my hands, truly be favorable and may thy assistance complete my glory. In thy word of justice, grant me (?) a fullness of glory, a life unto a remote day, and the establishment of my throne for eternity.”

The Wolfe Expeditions—Steps were taken in the autumn of 1888 for organizing an American expedition to visit and explore some of the Assyrian and Babylonian ruins. Funds were contributed toward the purpose by Mrs. C. L. Wolfe, of New York, and the enterprise was given the name of the “Wolfe Expedition.” The work of exploration is to be carried on by the Rev. W. Hayes Ward, D.D., of New York, one of the few American gentlemen who are particularly interested in the study of cuneiform literature, and Mesara Baynes, of Robert College, and J. R. S. Starrett, of the American School of Classical Studies at Athens. Dr. Ward started on his journey in September, 1884, and was joined by his companions in Constantinople, where he was furnished by the Turkish Government with all the papers necessary to secure the end he has in view. At the latest account the party were at Harash, examining the Hittite relics there. They expected to spend the winter in investigations of the ruins in Mesopotamia.

Operations of the Egypt Exploration Fund at Piksam and Zenz. — The society called the Egypt Exploration Fund was formed in England in 1889 for the purpose of promoting the examination of the ancient ruins in the Delta of the Nile, with special reference to the identification of the places mentioned in the Bible in connection with the sojourn of the Israelites. Its first work was performed during the season of 1882–83, under the immediate direction of M. Edmond Naville, at the mound known as the Tel-el-Maschuta, in the Wadi-el-Tumilat, on the line of the sown water canal, near the railroad station Ramses, and resulted in the identification of that place with Pithom, one of the treasure cities which the children of Israel built for Pharaoh, as well as with the city known under the Roman dominion as Heracleopolis. M. Naville also learned that Succoth, the place of the first encampment of the Hebrews on the journey of the Exodus, was here, and found an inscription pointing to Piqueheret, which is supposed to be the Pibahiroth of the Exodus, as being in the vicinity. A possible corroborative of this identification has since been found in a manuscript relating to the journey of a Frank woman in Egypt, in the fourth century of our era, in which the author mentions that she was shown a place called Pithona, as the city that the Hebrews built for Pharaoh, and speaks of the village of Hero as occupying the same site. Thence the lady relates that she went to Ramess, twenty miles distant.

The excavations of the Fund were carried on during the season of 1883–84, under the direction of W. Flinders Petrie, at Sán, the Zoan of the Bible, where was the capital of the fifteenth and sixteenth dynasties of shepherd kings, and of the twenty-first and twenty-third (or Tanite) dynasties. According to a passage in Numbers xiii, 29, Zoan was built seven years after Hebron. The mounds that mark its former site were prominent objects among the marshes of the Delta, and many interesting relics had been found among the fragments lying loose on the surface of the ground. A few preliminary excavations had already been made by M. Mariette, who, being unable to complete the work, had again covered up the objects he had found, to preserve them. According to M. Naville, there was no place in Egypt where destruction had been as complete and as unmerciful as there. Mr. Petrie began his work with the excavation of the temple, an imposing ruin of red granite from Syene, which occupied one of the numerous mounds marking the site of the ancient city. This building was surrounded by two inclosure-walls, one of them of sun-dried brick and of very remote antiquity. The other one was erected in the reign of King Pisekhkhanu, of the twenty-second dynasty, and is described as being of “incredible strength.” It extended around three sides of the building, and is yet standing to the height of about twenty feet. It is eighty feet thick, and built of colossal bricks about eight times the size and weight of our modern bricks.” Against and upon this wall dwelling-houses had been built, at different periods, as determined by the coins and potsherds found in them. The relics appertaining to the temple range in age from the period of the sixth to that of the twenty-sixth dynasty. Among them are stones bearing the cartouch of Pepé, possibly of him of the sixth dynasty; statues in red granite of Amenemhe I, and in black granite of Osorsen I and Amenemhe II.; a torso in yellow sandstone of Osorsen II., and an inscription of Osorsen III, all of the twelfth dynasty; a few relics of...
less-known successors of those kings; numerous works and alterations by Rameses II and Memnepthah I, and a block of Seti I, of the nineteenth dynasty; and a statue of Rameses III, of the twentieth dynasty. After this dynasty the city seems to have fallen into decay, and its stones to have been used for other buildings. Large numbers of stones were worked over by Siamen, of the twenty-first dynasty, and other kings who succeeded him. The later dynasties were represented by a stela of Tdurkhah of the twenty-fifth, and an ornament of Psammetik II, of the twenty-sixth dynasty. The most striking monument found in the course of the temple-excavations was indicated in numerous stones worked into the building, which proved to be fragments of a statue of Rameses II, that exceeded in size any other statue known. It appears to have been a standing figure, crowned with the crown of Upper Egypt, and supported in the back by a pilaster. The great-toe measured eighteen inches across, and the figure is estimated to have been ninety-eight feet high from the foot to the crown, and, with its pedestal, one hundred and fifteen feet high, and to have weighed not less than twelve hundred tons. An avenue of granite blocks outside of the wall of Pishekann was found to appear to a temple of the Ptolemaic age, having a pavement of limestone and marked by fragments of statues and portions of bas-reliefs and sculptures.

Excavations in some of the houses near the temple brought to light relics of domestic articles, works of fine art, papyri, weights, etc. One house was called the "House of the Papyri," because of several baskets of manuscripts and waste-papers, partly or wholly burned, which were found in a closet under the cellar-stairs. In another house, called the "House of Statuettes," were many green porcelain figures of gods and sacred animals, and burned papyri; and another, the "House of the Glass Zodiac," furnished the fragments of a large sheet of colorless glass, which had been gilded on one side and painted on the other side with a square border-line, inclosing a circular zodiac and four heads of the seasons, while the corners between the border-line and the circle were covered with stars done in rhombs of gold-leaf. In one or other of these houses were also found domestic utensils, and vases in granite, basalt, alabaster, and bronze; in a niche in the wall the lamp used by the owner in going into the cellar; fine pottery curiously ornamented; specimens of blue glaze-ware; a portrait statue; coins and bronze fittings; a marble bust of a term; and specimens of weights, based on the units of the shekel, the k'at, and the drachma. The papyri, of which some two hundred legible fragments have been saved, are of a miscellaneous character, and in various Egyptian and Greek handwriting. Among the documents in stone are the unpublished half of a tablet of Tdurkhah, of which the other half has been published; an inscribed obelisk of the twelfth dynasty; a curious cruciform Greco-Egyptian character, a large inscribed stela of Ptolemy Philadelphus; and several smaller steles, a royal statuette, and sphinxes. Three cemeteries were examined, the most ancient of which dates from the twelfth dynasty. In it were found a broken sphinx of fine early work in black granite, on which Rameses III had cut his name; and a royal tomb containing a rife sarcophagus, from which the lid had been lost, 14' feet long by seven feet nine inches in width, and without an inscription. The second cemetery was believed to be the chief necropolis of Tanis during the last stages of its civic history, and contained remains dating from just before the Ptolemies to about the time of Diocletian, during whose reign the city was burned. It contained a "rich quarter" and a "poor quarter," and a department for the sacred urchins, of which remains were found in thousands of oblong pots. A cabalistic circle of human skulls was found, with the ground strewn with "sacred eyes," in blue and glazed-ware. Among the remains in the third cemetery, which was of Roman times, was the mummy of a woman laid in a kind of open-work basket covered with a board. The robe of the mummy was edged with a variety of woven borders, white on red and red on blue, and other borders in red, yellow, white, green, and purple; and the jewelry consisted of a nose-ring ear-rings, and a necklace. The mummy is supposed to have been of the time of Constantine.

None of the domestic and smaller articles a yet recovered at Tanis are of an earlier date than the Ptolemaic period, although the large works give evidence that the city existed early as the sixth dynasty. This is because the excavations have not yet reached the strata in which pre-Ptolemaic remains are imbedded. An idea of the magnitude of the work to be done before an expectation can be entertained of finding similar relics of any of the earlier dynasties, is given in the statement by Mr. Petrie in one of his reports that, "where there is least accumulation over the earlier remains I find fifteen feet of Roman and post-Roman dust and rubbish; and this means that from forty to fifty tons of stuff have to be taken off any hole we dig before we even begin to touch pre-Roman work." The excavations were continued during the season of 1884-'5.<ref>

Egypt Exploration Fund.—At the annual meeting of the Egypt Exploration Fund, held October 29th, Mr. Petrie reported that he had examined twenty sites of ancient cities and remains. The immediate results of the explorations were that some sites supposed to be of importance were really small, and that alone was of geographical value, for it prevented the formation of a mistaken expectation of finding a large city in such a situation while other sites were of such size and so uncumbered with later deposits that their ex
ARCHAEOLOGICAL DISCOVERIES. (Egypt.)

...should be postponed. Among places that promised to yield important discoveries was one so covered with early Greek pottery that the potsherds crackled under the feet as one walked over it. This pottery was of early date, from the prehistoric down through the Phoenician and black-figured to the finest period of red-figured pottery on a black ground, and so into still later times. Such a site was of the first importance for the study of Greek archaeology, and, as far as was known, it had never been visited by a European. This site, with the one in which the great sarcophagus of red granite already mentioned, and one in which the tomb of a gateway of Amenemhe I were found, were spoken of as places not before known to Europeans, on which the agents of the fund hoped to make more thorough explorations. They had been foiled in finding relics of the Hyksos dynasties at Zano, simply by the immensity of the area to be explored there, to clear which exhaustively would take centuries of work, rather than the few months that could be given to it between the rains and the heat of one season. The whole of that area, however, had been examined to depths of ten, twenty, or thirty feet, with shafts that left no spaces of more than three hundred yards untouched by excavations. The financial report showed a balance of £2,162 to the credit of the fund. It was proposed to spend £1,650 during the ensuing year, and to send out an English student of Egyptology to assist Mr. Petrie. American friends of the fund had contributed $260 to its treasury, through the Rev. W. C. Winslow, of Boston. It was resolved to present a selection from the objects collected in the excavations to the museum in Boston.

Measurements of the Great Pyramid.—W. Flinders Petrie has published the results of measurements of the Pyramids of Egypt, which he made during the season of 1880–81 and 1882–83, and in which he believes he has secured, by the systems of checks and triangulations he employed, a higher degree of accuracy than any previous survey. The dimensions of the Great Pyramid and its several parts, as calculated by him, differ from those announced by Prof. C. Piazzi Smith slightly, but sufficiently, if the measurements are actually more accurate, to overthrow the theory of mystical harmonies and proportions which Prof. Smith has founded upon his own surveys; and Mr. Petrie suggests new relations of proportion in the different parts of the pyramid, without attaching any particular significance to them. He controverts the theory of Lepsius, that the pyramids were built by successive accretions, or by the addition of new layers over the whole structure in the successive years of the king-builder’s reign, and finds reason in his observations on the mode of structure for believing that they were constructed according to a predetermined plan. Mr. Petrie also inquired into the character of the tools that were used in building the pyramids. Of these tools, a bronze plate or scraper, and a copper instrument, and traces of bronze saws and tubular drills, have been discovered, but not the tubes themselves. The drills are supposed to have been jeweled with tough, uncrystallized corundum or some other gem-mineral capable of cutting into granite, diorite, and basalt, and the saws were probably about nine feet long. An enormous levy of forced labor might have been made during the season of the overflow, without interfering with the regular industries of the country. Barracks have been discovered to the west of the second pyramid which were capable of accommodating about four thousand workmen. These, supposing them to have been masons, with relays of one hundred thousand men every three months, would have been adequate, Mr. Petrie supposes, for the construction of the pyramids. The accuracy with which the base is squared—so close that it is hardly conceivable that the angles could have been measured without the aid of telescopes—is mentioned as the most wonderful feature in the construction of the Great Pyramid.

One of the most interesting results of Mr. Petrie's investigations was the discovery of evidence that these works of the ancient empire had been at some period subjected to deliberate, determinate attempts to destroy them. To this is owing the condition of the second pyramid of Abou Roash, which had led to the supposition that it had never been finished. From the examination of the rubbish-heaps around this work, Mr. Petrie learned that the whole granite casing of the pyramid had been stripped off to be laboriously smashed. He found fragments of a sarcophagus of granite, which the structure had once contained, and pieces of a throne and of a statue in diorite as large as the statue of Khafra of the second pyramid of Gizeh, which had been seated on the throne, and part of the name of the king. Chips and fragments of precious vessels in alabaster, bronze, and basalt, were also discovered in this debris. The rubbish, which was piled on the ruins of the votive chapel, attached to the pyramid of Khafra at Gizeh, are half buried, yielding similar results. Considerable masses of chips of diorite and alabaster statues, fingers, toes, bits of drapery, fragments of diorite and alabaster bowls, and even of hieroglyphical inscriptions, were found in it. These discoveries may help to throw light on the character of the period from the seventh to the eleventh dynasties, the darkest epoch of Egyptian history, which it is supposed may have been a period of revolution, and upon the hitherto unexplained expression of Herodotus respecting the pyramid-builders, that "the Egyptians so detest the memory of these kings that they do not like even to mention their names."

A Theban Tomb of the Eleventh Dynasty.—M. Maspero discovered in February, 1883, among the hills near Thebes, the tomb of a person named Horhotep, of the eleventh dynasty, a
very obscure period of Egyptian history, of which the known relics are very few. The tomb is composed of two chambers, tunnelled in the hills, in a rock, the friable character of which obliged the artist to line the walls with blocks of limestone, on which to place his emblamatic paintings and inscriptions. The sarcophagus, which was decorated, had been rifled of its mummy, and was lidless. Texts from the Book of the Dead and the Funerary Ritual were found. The discovery is of particular interest, because it supplies a distinct connecting link between the Mastabah tombs of the older dynasties and the tunnelled tombs of the Theban Renaissance period, between which M. Mariette supposed a "complete rupture of all artistic traditions" had taken place.

The Necropolis of Khemmis.—During the spring of 1884, M. Maspero discovered at Ekhmene, a large provincial town of Upper Egypt, about half-way between Assiout and Thebes, and representing the ancient Khemmis, or Panopolis, a hitherto undiscovered and un plundered necropolis of immense extent. Within three hours he verified the sites of more than one hundred catacombs, all absolutely intact, five of which, on being opened, yielded 120 mummies. The remains, so far as explored, are of the Ptolemaic period.

Roman Relics in England.—Relics of the Roman occupation have been frequently uncovered in the excavations for the erection of new buildings, and for other public works, in various parts of England. Several such remains were found during 1884 at York. A dedicatory tablet of Marcus Aurelius was unearthed in digging for the foundations of the new Mechanics' Institute in that city. A flanking wall of the Roman bridge, which is known to have crossed the Ouse, running at right angles to the bridge were found parts of two altars, with the handle of a large vessel of gritstone, exquisitely ornamented. Of one of the altars the base remained, on which had been roughly cut the letters "S. P. R." The other altar, fine limestone, had been broken, but bore an elegantly cut votive inscription by L. Celest Vitalis, cornet of the ninth legion, with a caution against any violation of the offering.

A Roman family burial-place was discovered at Lincoln, in the heart of the city. The "loculus" consisted of a stone chamber, 5 feet 10 inches long, from 2 feet 6 inches to 3 feet 1 inch broad, and 3 feet 9 inches high. Connected with it by a short passage-way was a quadrangular chamber measuring 4 feet 3 inches by 4 feet 10 inches. Within the latter vessels were found imbedded in line; ordinary globular-shaped funeral urns, pitchers, like ordinary domestic jugs, containing ashes and fragments of burned bone. They were of coarse ware, with a greenish glaze, unornamented. Several of them were covered with saucers or small cups, inverted and meant to do duty as lids. Upon the upper or east end of the loculus was built a furnace, which was between five and six feet long and one and nine inches wide and high. The discovery believes from the small dimensions of this furnace that it was not used for cremation, but was in fact a Norman oven.

A Roman villa has been opened, under the Hill of the White Horse, at Uffington, Berks. It contained a pavement that consisted of a very fine specimen of the third-century tessellae, which is illustrated in the engraving. Six skeletons were found, which are supposed to be Saxons who occupied the villa after the retirement of the Romans. A mass building has been uncovered at Chesterle

**TERRACE-SED PAVEMENT OF A ROMAN VILLA.**

head, and nearly parallel with the river, was uncovered in preparing for the foundations of the new post-office, and was bared for forty-five feet; under it ran a carefully constructed drain. At another place were found two Corinthian capitals, finely carved in limestone, but in considerable decay. Upon the mount, which has always been rich in Roman remains, was discovered a sarcophagus of Egyptian origin, with a depiction on the lid of a scene of the Underworld. The remains of another sarcophagus, with a relief of a Procession of the Dead, were discovered in a nearby field. The tombs were extensively decorated with painted scenes and figures, including depictions of the Fertility Deity and the Underworld. The discovery provides valuable insights into the funerary practices of the period. In Northumberland, in which have been found two or three inscriptions that are attributed to the reign of Alexander Severus.

Greek Inscription at Brough-under-Stainton. Interest has been directed to a stone containing a Greek inscription, discovered in it under the porch of the church at Brough-under-Stainton, Westmorland. It reads...
repairing this structure that it had
nearly rebuilt with sepulchral and other
among which were one bearing a Latin
mon containing the name of Septimius
and the stone with the Greek inscription
this stone, which is about two feet long.
foot wide, is engraved on one side. At
it is ornamented with two squares, di-
y cross-lines into eight triangles, and
the side is the so-called palm-branch
the both pagan and Christian monuments
assial age. Between the palm-branches
inscription in twelve lines. From a
aph and casts of the inscription that
it to him, Prof. George Stephens pro-
1t it to be Runic. Other casts have
been known and subjected to the examination
sh scholars during the past year, who
sided that the inscription is Greek.
. H. Sayce and Dr. Isaac Taylor attrib-
ute or the fifth century of the Chris-
. Some other critics assign it a date
the beginning of the Christian era. A
amination has made it to appear to
xaminate verse. As the inscription is
isaced and indistinct in many places,
grammatical in structure, a variety
s and readings of it have been
. Most of them agree in supposing it
funeral inscription of a youth, named
Comagene, who died at the age of
, while traveling in Britain, with an
of farewell, and an invocation.

Articles—Hitherto no specimens of ar-
use or adornment made of lead have
in any of the prehistoric moun-
vent have been scientifically investigated
re. The eminent archaeologist and Ori-
. F. Kanitz, has now discovered among
in of fragments found in the tumulus
ng in Carinthia, parts of a prehistoric
of lead, which shows that the rich de-
lead in the neighborhood of Villach
3 only known in prehistoric times, but
ilized in the art of the people. Kanitz
lished an interesting account of this
16th volume of the "Transactions of the Vienna Anthropological Society,
and has now issued it as a separate essay.
were found in the same tumulus, and are
ited in the monograph—figures of ani-
ed fragments of two horsemen—all of
icate an extremely limited degree of

ARCHEOLOGICAL DISCOVERIES. (Greece.) 23

The Palace of the Kings of Tyrra.—Dr. Henry
Schliemann, assisted by Dr. William Dorpfeld,
of Berlin, has explored the Acropolis and the
Palace of the Kings at Tyrra, one of the most
ancient cities of Greece. The whole upper and
the whole middle Acropolis were carefully ex-
caved, and two cross-trenches were dug in
the lowest terrace. The mean thickness of the
walls was twenty-four feet, while in some
places on the upper Acropolis the extreme
thickness was forty-eight feet. The wall of
the upper Acropolis consisted of a lower part
resting on the rock, and an upper part reced-
ing by about twenty-six feet, and provided in
places of wall with narrow, longitudinal cov-
ered galleries, whence doors led to the terrace
of the projecting lower wall. The walls were
composed of large, almost unwrought blocks,
which were piled one on another without any
binding material. Traces were found on the
top of the wall of what appeared to have been
a roofed passage around the citadel, having a
wall of raw bricks on the outside and columns
on the inside. The principal entrance to the
Acropolis was on the eastern side, close to the
remains of the best preserved of several towers
of which ruins were found at places along the
wall. This tower stood to the right of the
ascending passenger, so that the assailsants
of the fortification had to expose their right side,
which was protected by the shield, to the
defenders. The principal gate of the upper
citadel was formed by two uprights, ten and
ten and a half feet high, three feet broad, and
four and a half feet deep, and had a breadth of
nine feet three inches. The holes in
which the door-hinges turned are still preserved
in the threshold, and in the two uprights
are holes, six inches in diameter, for the wooden
cross-bar by which the gate was fastened.
The holes of the door-hinges are also preserved
in the threshold between the porch and the
hall of the propylaeum. In one of the courts
was an altar, which is compared with an altar
mentioned in the "Odyssey" (xxii, 335, 336),
as in the court of the palace of Ulysses, which
was sacred to Zeus. The floors of all the
apartments and courts were formed of a mo-
saic of lime and small pebbles, corresponding
with the "beaten floor" in the palace of Uly-
sses. The floor of the principal hall, which was
on the northern side of the court of the altar,
was divided by incised lines into squares, and
shows traces of the red painting with which it
was adorned. The fore-room is connected
on the west with several corridors and small
rooms, among which was a bath-room about
ten feet square, the floor of which was a single
block of limestone about two feet two inches
thick. A large fragment of a bathing-tub of
terra-cotta, ornamented with spirals, was also
found; and traces of the gutter and sewer by
which the water was carried off were observed.
The other halls were connected with suites of apartments, but the original plan of one of the suites could not, on account of repeated restorations, be distinctly recognized. The foundations of the palace-walls rested upon the rocks, and were joined without any binding material. The walls themselves were partly of quarry-stones bonded with clay and partly of sun-dried bricks. The outsides of the walls were plastered with clay, then covered with a coating of chalk, and painted in red, yellow, black, white, and blue, with ornamentation similar to that which has been found at Mycenae, Orchomenos, and Mendi, and figured representations, among which are mentioned a bull on which a man is dancing like an equestrian performer, and large fragments representing wings or sea-animals. A great number of sculptured ornaments were found in the ruins, among which are described as most worthy of mention, plain spiral ornaments of a green stone; a frieze of alabaster resembling a Doric triglyph frieze, in which the triglyphs are decorated with small rosettes and the metopes with palmleaves and spirals, and which was ornamented all over with pieces of blue glass; and a Doric capital of porous stone, with sixteen fluting. The age of the ruins was indicated by "enormous masses" of knives and arrow-heads, of a very primitive form, of obsidian, painted horned Hera-idoles, and numerous archaic terra-cotta vases with most ancient paintings in colors. The total absence is remarked, notwithstanding search was made for them, of varnished black, red, or yellow Hellenic terra-cottas. These facts are to Dr. Schliemann proof that Tiryns, as well as Mycenae, was destroyed in a remote prehistoric age. Evidence that the palace was destroyed by fire appears in the masses of charcoal, burned bricks, and calcined stones, and the cementation of the clay plastering into a solid terra-cotta. Evidence of the existence of a settlement on the rock before the palace and the great walls were built, in the discovery, about sixteen feet below the floor of the upper citadel, of the remains of a chamber containing hand-made monochromatic pottery, much like that which had been found in the two most ancient cities of Troy. A few hand-made vases with radially painted stripes were also found in this chamber. The low table-land around the Acropolis was examined for relics of the residences of the ancient city, and evidences were obtained of their early existence there, and of the continued duration of the lower city for a long number of centuries after the destruction of the royal palace; possibly till the end of the fourth century B.C. No traces of the tombs of the ancient kings were found in the immediate neighborhood of Tiryns.

The Tumulus of Marathon.—Dr. Schliemann has explored the great tumulus at Marathon, to solve a question that had arisen in his mind whether it was not of earlier date than the battle of Marathon, B.C. 490, and in fact prehistoric. He sunk a shaft from the top of the mound to the depth of one metre below the level of the plain, when deeper digging was prevented by the flowing in of water. The earth of which the tumulus was formed consisted alternately of clay and sand. The objects of human industry discovered were of very archaic pottery, wheel-made or hand-made, a part of them thoroughly, others only very superficially, baked. The bulk of the pottery is, like the Trojan, well polished, and was dipped before baking into a solution of well-cleaned clay, from which it acquired on one side, and often on both sides, a lustrous dark yellow color. The ornamentation is varied, and all archaic, leading Dr. Schliemann to assign to the work an antiquity of not later than the ninth century B.C., while the knives and arrow-heads of obsidian point to a much higher antiquity. A fragment of a vase of Egyptian porcelain was found, but no trace of human skeletons or of a funeral. Dr. Schliemann concludes that the hillock is a mere cenotaph, which belongs most probably to the ninth century B.C., and that the theory that identifies it with the Polyandrion of the 19th Athenian slain at Marathon must fall to the ground.

Other Excavations in Greece.—The excavations that have been going on for several years under the direction of the Archaeological Society of Athens upon the site of the temple of Asklepios at Epidaurus and of the Asclepiasion at Oropus, have resulted in the discovery of numerous pieces of sculpture and inscriptions of value. Excavations have been resumed under the same direction at Eleusis. Excavations have been begun by the direction of the Government and under the personal supervision of Dr. Dörpfeld, for the exploration of the entire site of the Acropolis of Athens. The work that was done two years ago southeast of the Parekteros found of the discovery of some very beautiful and remarkable monuments and remains of ancient Attic art.

Later Investigations of the Site of Troy.—Dr. Schliemann, having completed his excavations at Hisarluk, has published the final conclusions drawn from his investigations, which were continued at intervals through ten years, in a book entitled "Troy." The further and more thorough examination of the hill at Hisarluk and the adjacent plain has led him to revise the views that he had set forth in his "Troy" and "Ilios"; and while he finds his opinion that the spot is the true site of the Homeric Troy and of the Roman Ilium confirmed, he admits that he was mistaken as to some of the details of his previous identifications, and that he had not exactly understood the character of the ruins he had examined, and had not sufficiently appreciated the extent of the ancient city. Dr. Schliemann, in digging at the hill of Hisarluk, had distinguished what he regarded as the ruins of seven cities, one built upon the ruins of a previous one, the
ost and most recent of which he reads the historic or Roman Ilium. In his surveys he supposed that the third city, the bottom was the Troy of Homer. His researches showed that this was a C and that it was the second city that have been regarded as corresponding at Troy. The mistake arose from the rich was made apparent on further exc-

d, that the people of the third city had their houses among the colossal masses and ruins of the second city, without ing either to level or remove them, and to contours were at first confused with seas of the same strata in which they d, instead of being assigned to the whence their foundations rose. From re careful examination of the second of ruins, and the extension of the in-

ions into the surrounding level, Dr. now claims to have finally proved a remote antiquity there was in the Troy a large city destroyed of old by a catastrophe; that the hill of Hisarlik y the Acropolis of this city, occupied by peoples and a few other large edifices, be lower city extended east, south, and the site of the later Ilium; and that, emily, this city answers perfectly to the c description of the site of sacred

This city was laboriously fortified, fortifications were in time renewed and d. The walls and some of the chief were constructed of sun-dried bricks, re baked by fires raised against them ey were built up. The relics found in indicate that iron was not in use in y; that implements and weapons of were equally prevalent with those of and that the gold-maker's art had at a high degree of development.

The later Ilium have been found inscrip-

cs, architectural and sculptural frag-

t of the temple part of a theatre of accommodating six thousand spec-

and portions of the walls.

Archaeological Research at Assos.—The American Institute of America, after two years work, has completed its excavations in the Troas. This city, which Joseph Keke identifies with the city described by as the steep and lofty Pedasos, the of the Latroes and the residence of the Teis, the father-in-law of Priam, and the "Pedasos" mentioned in an Egyptian text as a state whose people assisted the in the wars of Rameses II, was situated in the shape of a fan at a height of about eight hun-

met, and commands an imposing view. The name discovered in the excavations dis-


e various phases of Greek civilization, twenty-four centuries. Before the work was begun, Col. Martin Leake, British archaeologist, contemplating the st accurate masonry of a part of the walls, which date from the fourth century B.C., had spoken of the ruins of Assos as present-

ing the most perfect idea of a Greek city that had hitherto been obtained. The first year's excavations of the Archaeological Association were made about the temple upon the Acropolis. Among the archaic bas-reliefs and sculptures which decorated the building were found the crouching sphinxes that formed the coat-of-

arms of the city, combats between lions, wild boars, and deer, in the Assyrian style, and a scene from the episode of Hercules and the Centaurs, which is worthy of especial mention as being the only known monumental work of art yet discovered in which the Centaurs are represented as having human forelegs. An ancient bridge, which was partially excavated, is the only known example of a Greek bridge. The excavations made during the two years in the market-place revealed the Agora to be a more interesting work, and made it more completely known, than even the Forum of Pomp. Along one of its sides extended a two-

storied colonnade, or stoas, 360 feet long, made of the andesite of the mountain, which strikingly resembled the colonnade around the Temple of Athena at Pergamon. Next to it is the Boulterion, apparently of the same date, in which the archives of the city were kept. On the south side of the Agora stood a building that forms the only known example of a Greek bath, and is the only four-storied structure of antiquity ever recovered. A complete ideal restoration of it was made. It consisted, according to the description given by Mr. Joseph Thacher Clarke, "of an enormous hall, going through two stories, with twenty-six chambers upon one side; above this structure was a colonnade, the floor of which was upon a level with the Agora. In front of the stoas was an enormous basin for the reception of rain-water, covered by stone slates, and so paved that it was not visible to persons on the market-place; from it ran a subterranean conduit to the lower story of the bath, whence there were arrangements for the water to flow into the thirteen lower cells. The refuse water was drawn off into a larger basin beneath the bath-building, where there was again another reservoir to receive the clean water from its roof. This last reservoir was connected with the street, and so formed a grand public fountain, supplying pure water for the consumption of the people, while the water of the refuse basin adjoining it was used for the cooling of the theatre in the lower town. Next to the bath was built, in later times, a small temple (Heroum), in which the bodies of the benefactors of the city were deposited; their names were still found inscribed upon the entablature. At the east end of the Agora was the bema, the tribunal of the orator in addressing a crowd. The level here was raised above the market-place, and flagged, while the remainder, like all Greek streets before the Christian era, was unpaved." The theatre was well recovered;
the gymnasium was in a good state of preservation; and a great palace-hall, or atrium, of late date, has an arch appearing with purely Hellenic details. The Street of Tombs presents monuments of every period, one of which can not be later than the seventh century a. d., while many are as recent as the eleventh or twelfth Christian century. One of the large mausoleums offers a perfect parallel to the tombs of the kings at Jerusalem. One hundred and twenty-four sarcophagi were opened for the first time, and many archaic cinerary urns were found. Inhumation and cremation appear to have been maintained side by side.

In the sarcophagi were discovered ornaments of gold, terra-cotta figurines, small vases, and glasses, including some fine specimens of thin, transparent glass, and several thousand coins. The walls, of which the chief masses date from the fourth century a. d., are more than two miles in length, are remarkably well preserved, and rise frequently to one or two courses of their original height of sixty feet and over.

Villas of Ancient Roman Nobles.—Advantage has been taken of the works of reconstruction and public improvement that have been going on in the city of Rome, to make a careful examination of the ruins and relics of ancient Roman life that are from time to time in the course of the work rendered accessible: and by this means much progress has been made toward an ideal restoration of the city as it was during the imperial period. The Via Nazionale, which has been in the course of opening and building during the past twelve years, passes close to the line of the ancient Vicus Longus, which ran through one of the most aristocratic quarters of the town. In this region, starting from the modern Piazza di Magnanapoli and advancing toward the baths of Diocletian, the remains of the “superb mansions” of between fifteen and twenty Roman nobles have been brought to light, but the explorations of them, which were made during the earlier period of the excavations, were “irregular and merely accidental,” and the information that was gained respecting them was not as accurate or exhaustive as is desired. A more important and regular work, the building of the office of the Minister of War, is giving the opportunity of exploring under better auspices that portion of the district which extended from the Vicus Longus to the Vicus Porte Colline, and from the Templum Salutis to the baths of Diocletian. The war office covers an area of 16,000 square metres which formerly belonged to the monastery of the Barberine nuns. The ground was explored in a desultory manner when the monastery was built, at the beginning of the seventeenth century, but the value of the information it might have yielded was not then appreciated. The new exploration of the same ground has been attended with the discovery of the town residence of Volucius Rufinus, the uncle of Julius the Apostle, who became consul in 847, prefect of the Praetorium, a. d. 349 again, a. d. 368, governor of Numidia, as of the privy council, etc. The vestibule palace is a large hall, paved with marble, resplendent with the finest and rarest kind, and the part of the walls is covered with the same kind of tile used in the entrance was found in the peculiar pedestal dedicated to Volucius Rufinus, the township of Ravena, in the infor...
tectural style of the building was somewhat like that of the double-storied cloisters of the medieval and Renaissance periods. The portion was furnished with 48 columns of cipollino marble on the ground-floor, and as many smaller columns of breccia corallina on the upper story. The Atrium was surrounded by state apartments in the lower story and by the private apartments of the Vestals in the upper story. A hall corresponding with the tablum of a Roman house was paved with colored marbles and walled with marbles, and a number of smaller rooms around it are presumed to have been used for the deposition of archives. The situation having been very damp, elaborate arrangements were provided for warming and ventilating the building by means of hot-air furnaces and flues. The marks of the ruins indicate that the Atrium may have originally contained more than a hundred honorary pedestals with statues and eulogistic inscriptions of Vestales Maximes; but in several of these cases more than one of the pedestals appear to have commemorated the same lady. Most of these works have disappeared by having been burned into limestone. Twenty-eight of the inscriptions have been recovered in the Atrium, and eight other inscriptions, some of them older than any in the Atrium, have been found in other parts of the city. The earliest of the pedestals in the Atrium bears the name of Praxestata, daughter of Crassus, whose mother, Sulpicius, is mentioned by Tacitus in his history, i. 42. These names occur, in the order of date: Nummia Maximilla, a. d. 201; Terentia Flavilla, a. d. 215 (on four pedestals); Flavia Publicia, a. d. 247 (on seven pedestals); Valia Claudiana, a. d. 296; and Claudia Concordia, the last or the last but one of the Vestales Maximes. Three statues were found in a comparatively perfect condition. One, which is supposed to represent Flavia Publicia, is described as "exquisite statue." One upper part of a statue has the head in a fine state of preservation; and several headless parts of statues have been found.

Eight hundred and twenty-nine Anglo-Saxon coins, bearing the names of Alfred, Edward, Athelstan, Edmund, Onlaf, Sifric, and Archbishop Ecgberht, have been discovered within the Atrium.

Exploration of Palestine.—The Palestine Exploration Fund has completed its survey of western Palestine, and has published the report of its work in seven volumes, with maps and drawings. It has identified, with more or less of certainty, the greater part of the more important places mentioned in the Bible, and has made thorough examinations of local conditions and regard for the rights of property-owners would permit, of walls and ancient structures at Jerusalem and other cities. In its maps are noted down all of the springs, the cisterns, the tombs; the ancient synagogues; the old "high places," now called mazones; the names of Roman temples constructed of materials previously used for synagogues; of Byzantine churches made of the same stones taken from the Roman temples; and of crusaders' forts made from these same stones worked over again; of which any relics have been found. Some ten thousand names have been corrected and translated or trans-literated; and a plan has been drawn and published of every important ruin. A geological survey has been completed by Prof. Hull, which clearly illustrates the physical structure and topographical features of the country, and throws light on those parts of biblical history that are connected with such features.

An important identification has been probably fixed, independently of the surveys of the Palestine Exploration Fund, of the site of Kadesh-Barnea. The location of this place, which was an important station in the wanderings of the Israelites, had been a difficult problem to geographers, and they had not been able to agree upon it. The most generally accepted location was that of Robinson, who fixed it at a place called Wady-el-Jaryb, where are certain springs called Ain-el-Weibeh. His identification was not sustained by any special evidence, either in the traditional name or the topographical features of the place. Shortly after 1849, the Rev. John Rowlands, whose attention had been directed to the spot, but who had not visited it in that year, made his way to a place called Gadis, or Ain Quadis, south-west of the Ain-el-Weibeh, and a little west of north of a third conjectural location at the Wady Jerufeh, where he found a spur of solid, naked rock, from the base of which issued a considerable stream that was lost in the sand at three or four hundred yards away. The conditions, in the same, the character of the situation, and its features, its position in the order of stations, and in other respects, all favored the identification of the spot with Kadesh-Barnea. No one, however, had succeeded in finding this place after Rowlands's account of it was published, and his theory was ignored, while that of Robinson became current. In 1881 the Rev. Henry Clay Trumbull, of Philadelphia, whose account has been published during the past year, succeeded in reaching Ain Quadis, and found it to correspond accurately with the description given of it by Rowlands, nearly forty years before.

Survey of Moab.—Capt. C. R. Conder, R. E., has published, in a book entitled "Heth and Moab," an account of a survey of part of the land that is supposed to have been included in the empire of the Hittites, and of the Moabite country north of the river Arnon, which he made in connection with the work of the Palestine Exploration Fund. The primary object of the survey was the exploration of Moab proper, but this was prevented by the interference of the Turkish officials; so that the investigations in that region were confined chiefly to what formed the northwestern part of the territory.
allotted to the tribe of Reuben. It was during this survey that Capt. Conder visited and identified the site of the ancient Hittite capital of Kadesh. Three places had been indicated as possibly occupying the locality of this city: Antioch, Emesa (the modern Home), and an island in the middle of the long lake near Homs. Capt. Conder gained satisfactory evidence that the real site was not at either of these places, but was at a spot now called Kedess, on the river Orontes, south of Homs. Two pictorial representations of Kadesh are given on the Egyptian monuments, in connection with the documents relating to the wars between Ramesses II and the Hittites; one, which is slightly injured, on the walls of the Ramessseum at Thebes, and another at Aboo Simbul, fifty-seven feet by twenty-five feet in dimensions, showing the battle of Kadesh. All the features of the scene, as depicted in these views by contemporary artists, correspond with the situation examined by Capt. Conder, while no agreement was found between them and the other situations. The features of the place also correspond with the requirements of the textual descriptions of the battle; and the very name of the mound by which the ruin stands—Neby Mondah—the surveyor observes, recalls the Egyptian war-god Mentu, or Mando, whom Ramesses is said in the poem of the Pentaur to have invoked during the battle. The supposed situation in the lake was visited, and found not to fulfill any of the conditions of the problem. On the way between these two places, the party passed a curious inclosure which is called the "Ark of Noah." According to the Koran, the Taamur, at Oues, south of Kadesh, was the spot whence the flood issued and whither it returned. This "Ark of Noah" is an earthen inclosure about three hundred yards square, with mounds at the angles, which may mark the place of corner towers, and is surrounded by a ditch forty feet deep and wide. The building within lies with its angles to the cardinal points. At Tyre, a Phoenician votive tablet to Moloch Astarte was unearthed, and a text in eight lines, invoking a blessing from Baal, Lord of Heaven. The temple of Malkarth was apparently one hundred feet wide and one hundred and eighty feet long, with three walls and a peristyle. It faced north of northeast, and its pillars were only eighteen inches in diameter. Among remains on the site were those of two altars similar to those of the so-called "libation-tables" of the Egyptians. One of them had an eagle carved on the side, and in its upper surface were sunk two flat basins, a foot square and a few inches deep. The other altar was plain, and had a single basin of the same size as those in the former altar. A peculiar distinction is remarked between the altars of the Egyptians, Phoenicians, and Moabites, and those of the Israelites, that the former have been artificially prepared, and contain libation-vessels, while the latter were required to be made of earth, or of stone on which no tool should be lifted. Before he was finally driven out of the Moabite country, Capt. Conder set out in surveying nearly five hundred square of territory, discovered seven hundred stone monuments, and obtained a volume notes, plans, and drawings, with forty graphs. Among the spots explored were "Springs of Moses," the ancient "As Pisgah," and the "Ridge of Nebo," the city of which was measured to be 2,648 Here, at the "Field of Zophim," as well Banath, Baal, and Peor, which was ideal with a spot now called Minych, were ancient stone monuments that appear to have been arranged in sevens, recalling how a of these places, Balak, with Balaam, built altars. Passing the ancient Rabath Am where are distinguished the ruins of the E city of Philadelphia, dating from the s century, the party came, in the Wady e upon the ancient trans-Jordanio Tyre, were found, in the spot now known a Arak-el-Emir, or the Prince's Cliff, the cave fortifications that were erected by Hermonas, when, after the death of his Joseph, he was obliged to retire from J erusalem before the superior force of his brother.

The Empire of the Hittites.—Recent dis ies relating to the Hittites, and pointing former existence of a great empire of people, were mentioned in the "Annu clopedia" for 1882. The Hittites are re ferred to in the Bible; they appear, and name of the Kheta, on the Egyptian inscrip tions, as formidable rivals and after friends of the Egyptians, in the nine dynasty, and under the name of the I on the Assyrian monuments; and are pron the same as the "Hittites" enumerated by among the allies of Priam. Numerous re of hitherto unexplained origin that have found in parts of Asia Minor and Syria attributed to them. Among their gigantic statues and steles, and inscr which it has not yet been possible to dec some of these inscriptions, called the inscriptions, from the place where they found, have engaged the attention of quaries for several years. Two capitals of Hittites have been identified, at Carchem August 1884, at Kadesh, on the Or both of which are mentioned in the Egy or Assyrian records contemporaneous wit period of Hittite power. All that has ascertained respecting these people and empire, together with an exposition o conclusions that have been deduced fro known facts, has been collated and set in a book on "The Empire of the Hitt by W. Wright (London, 1884).

Arctic Exploration. The Great E ftem.—The commission appointed in 1883 (see "Annual Cyclopaedia," 1883, p, to consider plans for a new expedition for relief of Lieut. A. W. Greely and his pa
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At Lady Franklin Bay, received success partially and in writing, from various in Arctic navigation and exploration, by Capt. George E. Tyson, of the Halloran; Lieut. W. F. Hunt, U.S.N., one of the Rogers in her search for "Connete;" Lieutenants Garlington and Colwell, of the expedition of 1885, chauska, and Dr. Emil Bessel, chief scientist of the Polar Expedition, was submitted early January. A programme for the expedition expense, and to require that only volunteers should be sent on the relieving vessels. These restrictions were not adopted. The Secretary of the Navy had already made arrangements for the purchase of two Dundee sealers, the Thetis and the Bear, the former of which was obtained in London, and the latter at St. John's, Newfoundland, and an inquiry having been made as to the possibility of obtaining from the British Government the Alert, which had been the advance ship of the Nares Expedition, that vessel was presented to the Government of the United States without condition.

Before the vessels were received, the principal officers for the expedition had been already selected—Commander Winfield S. Schley, of the navy, being chosen for the chief command, and ordered to take charge of the preparations. The three vessels were brought to the navy-yard at Brooklyn, and there fitted and supplied for the special service, the Loch Garry being also chartered to accompany the expedition,
and carry a supply of coal. While preparations were under way, the Secretary of the Navy received a letter from Capt. Sir George S. Nares, embodying his own suggestions, and those of other experienced officers of the British Navy, in regard to the practical conduct of the expedition. In addition to other provisions, Congress authorized a reward of $25,000, "to be equitably paid or distributed to such ship or ships, person or persons, not in the military or naval service of the United States, as shall discover and rescue, or satisfactorily ascertain the fate of the expedition of Lieut. A. W. Greely," etc. A proclamation offering this reward was issued by the Secretary of the Navy on the 17th of April. The two vessels specially designed for the rescuing expedition were fitted for the Arctic voyage at the Brooklyn Navy Yard, under the direction of Commander Schley, and supplied with every equipment that experience suggested, including material for a house to be erected in the event of Greenland, and the necessary boats and sledges. The Alert, being the largest, was used as a supply-vessel, and provisions for two years were placed on board. A large supply of coal was also provided, the bulk of which was placed on the schooner Loch Garry. The Thetis was the flag-ship.

The members of the crews were specially enlisted as volunteers. The Bear was the advance vessel, and left for St. John’s, Newfoundland, April 28th, the Thetis following May 1st, and the Alert May 10th. After taking additional supplies of sealskin clothing, and obtaining dogs for sledding, the vessels left for the Greenland coast, the Bear sailing from St. John’s May 5th, the Thetis on the 13th, and the Alert a few days later. The next information of the expedition was contained in a dispatch to the Secretary of the Navy from Commander Schley, dated at St. John’s, from which the following are extracts:

Thetis, Bear, and Loch Garry arrived here to-day from Greenland. All well. Separated from Alert 150 miles north during a gale. At 9 p.m. June 22d, five miles off Cape Sabine, in Smith’s Sound. Thetis had reached Cape Sabine. Capt. W. Greely, Sergt. Brainerd, Sergt. Fredericks, Sergt. Long. Hospital Steward Biederbeck, Private Connell, and Sergt. Ellison, the only survivors of the Lady Franklin Bay Expedition. Sergt. Ellison had lost both hands and feet by frost-bite, and died July 6th at Godhaven. Godhaven, three days after amputation, which had become imperative. Seventeen of the twenty-five persons composing the expedition perished by starvation at the place where found. One was drowned while procuring food. Twelve bodies of the dead were rescued and are now on board the Thetis and Bear.

Greely abandoned Fort Conger Aug. 9, 1883, and reached Baird Inlet, Sept. 9th following, with entire party well. Abandoned all his boats and was adrift for thirty days on an ice-flue in Smith Sound. His provisions camp was established Oct. 21, 1883, at the point where he was found. During nine months his party had to live upon a scant allowance of food brought by Lt. Conger, that reached Cape Harbor and Cape Isabella by Sir George Nares in 1875, but found much damaged by lapse of time; that reached by Beebe at Cape Sabine in 1882 small amount saved from wreck of the Pro 1888, and landed by Lieuten. Garlington on the bench where Greely’s party was camped. When these provisions were consumed party were forced to live upon boiled strips of sealskin clothing, lichen, and shrimps, proceed good weather when they were strong enough. As 1,300 shrimps were required to gallon measure, the labor was too exhausting and forced them entirely to sustain. The channel between Cape Sabine and Li Island did not close, on account of violent winter, so that 340 rations at latter point could have been sufficient. All of Greely’s records, and all instr brought by him from Fort Conger, are recoverable on board.

From Hare Island to Smith’s Sound I had most difficult and furious struggle with ice in my floes. Solid barriers of ice were overcome by skill and patience. No opportunity to adv. mile escaped me, and for several hundred miles were forced to ram their way from head-through the ice, varying in thickness from six feet and, when rafted, much greater. Thetis and Bear reached Cape York June 18th a passage of twenty-one days in Melville Bay the two days in the Bowhead Channel, and encamped at whalehead and continued to Cape Sabine. Returning seven days later, fell in with seven others of the fleet off Washington Island. Returning across Melville Bay, with the Alert and Loch Garry off Devil’s T Iron, the party was much improved in condition and. The Alert party was very much improved, but were critical in the extreme when and for several days after. Forty-eight hours of reaching them would have been fatal to a living.

The season now is late and the closest for Smith’s Sound was not seen when left Cape Sabine. The winter about Melville Bay was the most for twenty years.

On the same day dispatches were received from Lieut. Greely by the Chief of the Service Bureau at Washington, from the following extracts are taken:

Abandoned Fort Conger, Aug. 9th. Frozen off Victoria Head, Aug. 29th. Abandoned launch, Sept. 11th, eleven miles northeast of Hat Island. When on point of landing were driven by southwest storms into Kane’s. Finally arrived, Sept. 29th, in Baird Inlet, by seven parties, of which one was his. After ten days of starvation, an no provisions had been left for us from Cape I. to Sabe, and the establishment war quar Camp Clayoquot. We reached Cape Sabine and Hat Island with one. Inventory showed that by daily ration for one third ounces meat, seven bread and dog of four ounces miscellaneous, the party would have days’ full rations left for crossing Smith’s Sound Littelton Island, March 1st. Unfortunately, Sound remained open the entire winter, remaining impossible. Game failed despite daily hunting from early February. By runner returned 500 pounds of meat obtained. This year: shrimps, sea-weed, sassafras, rock-lichen, and skin were brought to for food, with results as by the number of survivors. The last regular was issued May 14th. Only 150 pounds of me by Garlington, compelled me to send in Nov. four men to obtain 144 pounds of English m. Isabella. During the trip Ellison froze solid hands and feet, and lost them, barely surviving by through our terrible winter and spring until 11 survivors owe their lives to the indefatigable crew of the Fort Conger. That night the party was three and accompanied by five whalers, forested vessels from Upernavik, through Melville Bay.
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The northern shore termination, some twenty
miles west, the southern shore extending some fifty
miles, with Cape Lockwood some seventy miles dis-
tant, apparently a separate land from Grinnell Land.
Have named the new land Arthur Land. Lieut.
Lockwood followed, going and returning on ice-cap aver-
ing about 150 feet perpendicular face. It follows
that the Grinnell Land interior is ice-capped with a
belt of country some sixty miles wide between the
northern and southern ice-caps.

In March, 1884, Sergt. Long, while hunting, looked
from the northwest side of Mount Carey to Hayes
Sound, seeing on the northern coast three capes west-
ward of the farthest seen by Nares in 1876. The
sound extends some twenty miles farther west than
shown by the English chart, but is possibly shut in
by land which showed up across the western end.

The two years' station duties, observations, all ex-
plorations, and the retreat to Cape Sabine were ac-
complished without loss of life, disease, serious acci-
dent, or even severe frost-bites. No scurvy was ex-
perienced at Conger, but one death from it oc-
curred last winter.

The story of the relief trips, as gathered from the
officers of the Thetis and Bear, may be briefly told. The Thetis arrived at Disco, on
the coast of Greenland, May 22d, ten days from
St. John's. The Bear had arrived on the 15th,
and, after one ineffectual attempt to proceed to
Upernavik, had departed a second time for that
point on the 21st. The Thetis proceeded in the
same direction, accompanied still by the
Loch Garry, on the 24th, and after severe
struggles with the ice, using torpedoes to open
the way, arrived at Upernavik, May 29th, and
joined the Bear. Several Dundee whalers were
encountered, anxious to join in the search.
On the same day the Thetis and Bear with several whalers left Upernavik, the Loch Garry remaining to await the Alert and a more favorable season. After brief stops at Kingston and Tessinek and a long battle with ice-floes, in which gun-cotton and gunpowder torpedoes were several times resorted to, Cape York was sighted on the 18th of June. Here the vessels passed into open water, the whalers Wolf and Aurora leading, closely followed by the Bear and Thetis, the whaler Arctic bringing up the rear. Communication was made with the natives at Cape York, but nothing was learned. The Bear was sent on at once to Carey Island, while the Thetis visited Conical Rock, Westenholme Island, Dalrymple Rock, Sanders Island, Cape Parry, and Northumberland and Hakluyt Islands on the way to Lit-leton Island, where the two vessels were to meet again. A record was deposited at Cape Parry. Both vessels reached Litton Island on the 31st. Nares’s cairn was found intact, with provisions in good condition; proving that Greely had not been on the east side of Smith’s Sound. The Garlington and Beebe records were found and brought off; 760 ration tins were left to those left by Nares; let-ters were prepared to be taken back by the Alert in case the expedition did not return during the summer, and preparations were made for crossing the sound. On the 22d the passage was made to Payer Harbor, Cape Sabine, the Bear proceeding in advance. A land-ing was immediately made and searching par-ties sent out. Records of the Greely party were found by Lieut. Taunt and Ensign Har-low on Brevoort and Starneth Islands, dated Oct. 31, 1883. These gave an account of the retreat from Lady Franklin Bay, and described the position of the quarters of the party, Camp Clay, at Baird Inlet, midway between Cape Selby and Cockburn Island. Commander Schley went on board the Bear and started at once for the camp, the Thetis following. An officer of the Thetis gives the following account of the landing:

The wind had increased to west-north a hurricane. It tore over the hills in furious blasts, driving the water in sheets before it, and leveling the boat to an uncomfortable degree. The Bear had steamed nearly up to the ice, and people could be seen running about on shore. Some one was seen on the ice signaling with flags. The message was: “Send doctor with stretchers, and Harlow with photograph-machine; seven alive.” Boats were lowered at once, manned with strong crews, and a party of officers and men started for the shore. It seemed a long pull. It was a hard pull; but with water dashing over the rail at every surge, and rolling gunwales-under the short but heavy seas, we finally reached the ice-foot, and hurried to the scene of misery. A few steps from the landing we met a black face, with hooris, staring eyes, wrapped in a clean blanket that contrasted strangely with the filthy clothes that covered the body of one of the survivors. It was Frederick, who was strong enough to walk to the boats—a miserable sight, but cheerful compared with the one that met our gaze a few steps farther on. A slight incline to the left, and the busy relief parties came in view. Passing a small fire on which pots of milk were warming, we came to the tent, under which lay four of the poor fellows. Two lay outside, one with his face swollen so that he could barely show by his eyes the wild excitement that filled his being. The other was muttering, in a voice that could scarcely be heard in the howling of the gale, his hungry appeal for food. Pushing aside the flaps of the tent, we saw a sight the like of which we trust never to see again. Crowded together in the little of the tent that was left standing lay Greely and three of his men in their sleeping-bags, their faces black with dirt. Their hollow cheeks and their gleam- ing eyes made a picture that we shall never forget, and told a story that has but few rivals in the annals of miserable sufferings. The short glance revealed four men with the hand of death laid upon them; one, in deed, was gnawing his last feeble breath while food and stimulants were forced between his teeth. The fate of the other three was a question of a very few hours. The gale was killing them in their extreme condi-tion. To move against such a wind was an impossibility. An able-bodied, healthy man bent to it at times. So there they lay, waiting for death, able to cook the pitiful ration of tanned seal-skin and licorice that they called their meal. The poor sufferers were wrapped in blankets, fed with thin milk, beef-tea, and crackers, and carried to the boats. A photograph was taken of the camp despite the time, 11 p.m., and the weather. The living having been provided for, our next sad duty lay with the dead. The graves were on the summit of a ridge behind the camp—ten of them, with their scanty coverings of gravel. Each body was carefully unearthed and wrapped in blankets, marked to correspond with its number on the diagram that was made, and carried to the boats. This task being finished, and the bodies divided between the boats, the next difficult part to reach the ship. It seems almost a miracle that they got safely alongside, and could discharge their sad cargo, with men in their alarming state, the men among officers and crew, who removed their caps, bathed, and fed them. Their dead comrades were piled on the dory and covered with a tarpaulin. We steamed back to Payer Harbor, and about 4 a.m. made fast to the ice again in about the same place we first had the information that led to the stirring events of the night.

The next day the Bear revisited the camp, and collected every scrap and relic pertaining to it. The cairns were revisited, and the records left by Greely, his pendulum, journals, the flag of the Nares expedition that he passed on to the people where they left it as marking their highest latitude, his in-stuments, and their records, were all secured.

The following is Commander Schley’s de-scription of the scene that greeted his eyes at the tent:

Lieut. Greely was found in his sleeping-bag, his body inclined forward and head resting upon his left hand. The “Book of Common Prayer” was open and held in his right hand. He appeared to be reading prayers to Private Connell, whose condition was most desperate and critical. He was cold to the waist; all sensation of hunger gone; was speechless and almost breathless; his eyes were fixed and glazed. In-deed, his weakness was such that it was with difficulty he swallowed the stimulants given him by Drs. Green and Ames. His jaws had dropped, his heart was barely pulsating, and his breathing was feeble and shallow. The tender scene of a helpless, almost famished, officer consoling a dying companion was, in itself, one that brought tears to the eyes of some of those who stood about them on the merciful erand of relief. Sergeant Brincker and Fredericks, and Hospital Steward Biederbeck were extremely weak, and hardly able to stand; they were no longer able to venture away from their camp to seek food, nor to prepare their simple dinner of boiled seal, nor to collect lichens, nor to catch shrimps, upon which they had to depend to a great extent to sustain life. Their faces,
The vessels ran across to Littleton Island on the 33d of June, and left there the day following, taking up the records, left for the Alert, and substituting others, giving the results of the expedition and directions for her future movements. Seven of the Dundee whalers were met off Cape Parry, working westward. They were informed that the quest was over. On the 50th the Alert and Loch Garry were encountered struggling with the ice off the Devil's Thumb. They turned back, and the combined squadron reached Upernavik July 2d. The Thetis and Bear stopped to take on coal, left there by the Loch Garry, and the others proceeded to Disco, where all were again united on the 6th. Leaving there on the 9th, they arrived at St. John's on the 17th.

The Greely expedition of 1881 was undertaken in pursuance of a plan adopted by the Intemational Geographical Union in Hamburg in 1879, on the suggestion of Lieut. Weyprecht, of Austria, the discoverer of Franz-Josef Land, for the establishment of thirteen circumpolar stations for scientific observation. It was fitted out at the authority of an act of Congress, approved May 1, 1880. The party was to be composed of three officers of the army, one acting assistant-surgeon, and nineteen enlisted men, selected by recommendation from the ranks of the army. The appropriation for the expedition was made by act of Congress, March 1, 1881. Lieut. A. W. Greely was appointed to take command, and the spot chosen for the station was Discovery Harbor, on the shores of Lady Franklin Bay, latitude 41° 44' north and longitude 4° 45' west. The entire party selected for the service was as follows:


Lieut. Greely received his instructions in April, 1881, and proceeded to St. John's, where he chartered the Proteus, and prepared it for the expedition, taking materials for a house, and stores for twenty-seven months. The Proteus sailed from St. John's July 7th, and touched at Disco and Upernavik to procure sledges, dogs, skins, and dog-food. Two Eskimaud dog-drivers were added to the party at Proven.

From Carl Ritter Bay progress was obstructed by ice, but was gradually forced to Discovery Harbor, where a landing was made August 12th. The cargo was speedily discharged, 140 tons of coal were landed, the house was rapidly put up. The station received the name of Fort Conger, and on the 18th of August the Proteus left the party to its Arctic isolation. The last communication from Greely to his superior, the Chief Signal-Officer at Washington, in 1881, was the following:

Entered Lady Franklin Bay one month from leaving St. John's. Obtained natives' skin-clubs and dogs at Godhavn, Rittenbek, Upernavik, and Proven. Made most remarkable trip recorded from Upernavik through middle passage to Cape York in 24 hours, and in six days, two hours from Upernavik to Lady Franklin Bay, though detained 52 hours by fog. Entered Lady Franklin Bay, having meanwhile examined the English depot at Cape Jervis. Recovered the entire English Arctic mail at Littleton Island. Discovered the transit instrument of the Polar's in the seaport of Cape Franklin, in Lifeboat Cove; obtained the record at Washington Irving Island. Overhauled the English depot at Cape Hawkins, and landed the depot material at Carl Ritter Bay. Our vessel never met a pack worthy of the name, and was not stopped by ice until it was inside Cape Lieber, Lady Franklin Bay, eight miles from our destination, where we were delayed one week, being forced back south of the eightieth parallel. Entered Discovery Harbor August 11th, where our station is located, Water-Course Bay being impracticable for landing. Have killed here three months' rations of musk castor. The weather is fine. Our building is framed and being covered. Party all well.

A week after the Proteus left the party, their house was finished. Scientific observations were begun at once, including in their scope meteorology, astronomy, magnetism, the temperature of the sea, thickness of the ice, the direction and speed of the tides, and the velocity of the wind and of sound at different temperatures. On the 1st of September Sergeant Brainerd, in charge of a party of five in a whale-boat, set out to the northwest and established a cache of provisions for exploring parties in the spring, near Cape Beechy, on the west side of Robeson Channel. The ice prevented them from proceeding farther, and after a struggle of fifteen hours with the oars, they were forced to abandon their boat and return to Port Conger overland. In November Lieut. Lockwood and Sergeant Brainerd with seven men attempted to cross Kennedy Channel to the Greenland coast, and examine the provisions left by Capt. Hall, of the Polarics, in
1871, but, on account of the darkness and drifting ice, they were forced to return, after much suffering, without accomplishing their object. The sun disappeared October 15th, and was absent 135 days, the twilight varying from half an hour to twenty-four hours. For two months continuously the light was so dim that the dial of a watch could not be read by it. The stars were visible constantly for three months, and at times the naked eye could discern those of one degree smaller magnitude than were visible in lower latitudes. The constellations were of great brilliance, and the moon was above the horizon for eleven or twelve days at a time. "Over all," said Lieut. Greely, "was a dead silence, so horribly oppressive that a man alone is almost tempted to kill himself, so lonely does he feel."

The long winter was passed somewhat monotonously in observations, military discipline, attention to sanitary necessities, and amusements. The quarters were heated by a coal-stove to the average temperature of 50°; games were indulged in, theatrical and musical entertainments were attempted, a paper was published, and when delivered, and holidays and birthdays were celebrated with exceptional festivity. A considerable part of the season of 1882 was devoted to geographical exploration. As early as February 19th, Lieut. Lockwood and Sergeant Brainerd, with a dog-team, set out to examine Forbes Channel from Cape Beechy, and going half across returned to camp on the 22d. Setting out again on the 1st of March, re-enforced by Sergeant Jewell and Esquiman Frederick, they crossed to Cape Lupton and examined the stores left at Thank God Harbor by the Polarists, which they found in good condition but scanty. The party was gone seven days, living in snow houses and experiencing a temperature of 68° below zero. March 18th, Brainerd with seven men started again and placed a boat and provisions at the Polaris boat camp, returning in seven days after suffering intensely from a temperature of 61° below zero. The movements were in preparation for a trip on which Lieut. Lockwood started on the 3d of April with Brainerd, the Esquiman, Frederick Christiansen, and a dog-team, to explore the northern coast of Greenland. They were supported as far as Cape Bryan by a party of eight, and proceeded thence with 26 days' provisions directly across the ice to Cape Britannia. Here the land trended to the west of north to Cape North, where they turned to the northeastward through a region never before trodden by man. Struggling through a severe storm lasting seven days, they reached the highest point ever attained toward the north pole, which was called Lockwood Island, latitude 83° 24' 5" north, longitude 46° 45' west, on the 18th of May. A point of land visible some fifteen miles to the northeast was named Cape Robert Lincoln. They were forced to economize provisions and hasten their return on account of the exhaustion of their supplies. Vegetation was found to be scanty, and similar to that of Grinnell Land, but evidences of animal life were abundant. Traces of hares, lemmings, musk-oxen, bears, ptarmigan, and snow-bunting, were seen between Cape Britannia and Lockwood Island. The coast was high and abrupt, and cut by numerous fords and inlets. A cairn was erected covering a record of the trip, and the party returned southward May 15th, picking up the Union Jack and sextant dropped by Lieut. Beaumont, of the Nares expedition of 1875, and arriving in camp June 1st, having been absent 59 days.

Dr. Parry and Sergeant Rice, with a team of nine dogs and the Esquiman driver Jens, had set out on the 19th of March to discover land to the north of Cape Joseph Henry. Supplies were advanced to the latter point. The sledge breaking down, Rice and Jens returned on foot, without sleeping-bags or tents, a distance of fifty miles, and obtained a new runner, rejoicing their leader in five days. On reaching lat. 82° 56', a southerly gale detached the ice-pack on which they were traveling, and they drifted about for twenty-four hours with an open lane of water between them and the land. A change of wind drove them shoreward, and they managed to escape with the loss of their tent and supplies. They reached Fort Conger May 5th, without having accomplished anything of value.

Lieut. Greely made two trips into the interior of Grinnell Land during the summer. He set out on April 26th, and was absent twelve days, proceeding with sledges by Conibear Bay, which he found to lengthen out into Weymouth Fiord. Into the latter Ruggles River discharged from the northwest. Following its course for fifteen miles, he discovered a lake sixty miles long by ten wide, which he called Lake Hazen. The chief source of the water seemed to be the ice-caps of northern Grinnell Land. Musk-oxen, wolves, hares, and ptarmigan were seen in the vicinity of the lake. The most extensive glaciers of this region were named Gilman Abbe and Henrietta Nesmith. The second trip began June 24th. Lieut. Greely was accompanied by Sergt. Linn, and, carrying packs of ninety pounds each, they advanced fifty miles beyond the turning-point of the former trip. They were forced to ford or swim a number of streams, and were exposed to much hardship. Two ranges of mountains were discovered, running nearly parallel with the United States range, which they called respectively Garfield and Conger. The highest peak was called Mount Chester A. Arthur, 8,000 feet in altitude. Lieut. Greely ascended this, and was satisfied that Grinnell Land ended but a short distance westward, with a coast-line extending to the southwest from the extreme point reached by Lieut. Aldrich, R. N., in 1876. Evidences of ancient Esquiman camps were
ARCTIC EXPLORATION.

On this region. After much suffering and
the station was again reached July 13th.
ice began to break up in Discovery Har-
dly 9th, and by August 5th Lady Franklin
was practically clear. Greely ran down
at 13th with the steam-launch to Cape Cra-
zo leave provisions, and could see no ice
named Channel to the south. Dr. Pavy
porpoise Ellison made an overland trip in
part of August from Cape Baird to
Ritter Bay, and discovered a large valley
ring across Daly Peninsula from Cape
the Cape Defoise. Several trips were
By Lockwood in the launch, one to the
of Archer's Fiord, whence he brought
msk-oxen, and one to Weymouth Fiord.
ember the hope of relief was given up,
set party settled down to a second winter
quarters, their supplies being sufficient
union no uneasiness. From October 28th
November 5th, Dr. Pavy and Sergeant Brain-
ate to Carl Ritter Bay with a dog
but discovered no sign of any vessel. The
was passed much as the first had been,
February 1883, preparations began to be
for the retreat. Caches of provisions were
at Cape Baird by Brainerd, and at Cape
ar, Newman's Bay, by Lockwood and
. An attempt was made under Lock-
early in April at further explorations on
north coast of Greenland, but the party
ed to return in six days, having en-
red open water and escaping with diffi-
rom a floe that became detached from
in body of ice. Sergeant Rice and a
of twelve men visited Hall's Rest and re-
after six days with the ice-boat Beau-
April 24th Lockwood, Brainerd, and the
an Fred set out for the interior of
al Land, travelled to Ella Bay,r Fiord, and their further progress was
ited by the twin glaciers. A mountain
height was seen here which was
Mount Difficulty. Turning back and
uring these explorations in the bay, they
west coast of Grinmel Land and
out on the Polar Ocean. They dis-
immense inland glacier, forming the ice-
southern Grinmel Land and separated
the northern ice-cap by a belt of land
miles wide. This glacier presented a
wo hundred feet high, and its surface
ed apparently to that of the underly-
, presenting the appearance of hills
y and abrupt peaks. It was called
Glacier. The farthest western point
ched May 18th, latitude 80° 48' 30"
longitude 78° 26' west. A cliff 2,200
gh, containing petrified roots and other
oms, was ascended on the 16th, and
found that the land terminated on
the side in a headland fifty or sixty
away, which was called Cape Brainerd.
responding headland to the south was
Cape Lockwood. Beyond the latter, and
ed from it by open water, was discov-
ered what was supposed to be new land, which
was named Arthur Land. After a trying and
difficult journey through snow-storms and with
short rations, the party reached Fort Conger on
the return, May 24th. A six days' trip to the
northwest was made by Lockwood and Brain-
ed in June (13th-19th), without important re-
sult. More active preparations were then made
for the retreat. The ice began to break up Au-
gust 4th, and on the 19th the way was open
for boats, and the party abandoned their camp
with the steam-launch Lady Greely, the whale-
boat Narwhal, the jolly-boat Valorous, left at
the Cape Hawks by the English and brought
by the Proteus in 1881, and the ice-boat Bane-
mont, leaving the dogs behind, with four bar-
els of pork and some seal-oil.

By this expedition, exploration of the north-
er coast of Greenland was carried one de-
gree of latitude and about ten degrees of lon-
gitude farther than the point previously at-
tained. From an elevation of 2,000 feet, Liens,
Lockwood could see no land to the north, and
it has been concluded by some authorities that
Greenland is an island extending little or not
at all beyond 84° north latitude. The region
of Dr. Hayes's open polar sea was filled with ice-
packs. Lockwood, in sounding between Cape
Britannia and Cape Bryant, failed to touch bot-
tom with a line of 165 fathoms. The vegeta-
tion and animal life encountered at the high-
est point attained was not different from that
before known. The deflection of the magnetic
needle was 104° west. The explorations of
Greely on Grinmel Land are supposed to estab-
lish the fact that it is an island, the western
border of which was reached, Grant Land being
a peninsula connected with it. Many new
features of this region were laid down, includ-
ing mountains, rivers, and lacs. The highest
water observed at Lady Franklin Bay
was 62° above zero, June 80, 1882, the lowest
66° below, in February, 1883. During the latter
month the water was frozen, and remained
solid for fifteen days. The thermometer
ably rose in the thermometer during storms
or high winds. The highest barometer was
slightly above thirty-one inches, and the lowest
slightly below twenty-nine, showing a great
range, the greatest variations being in winter.
The average temperature of the water was 29°
above zero. The highest velocity of wind ob-
served was seventy miles an hour, which oc-
curred during a snow-storm. From the elec-
rometer no results whatever were obtained,
much to the surprise of the observer. The dis-
plays of aurora were not to be compared with
those observed at Disco and Upernavik. The
brightest displays were in the southwestern
direction. The general shape was that of a rib-
on, and no cracking sound was noticed. Shadows
were distinctly seen by its light. There
were no electrical disturbances, except
a rumbling like distant thunder. It was found
that the tides at Lady Franklin Bay came from
the north, while those at Cape Sabine came
from the south, the former having the higher temperature by 3°. The average rise of spring tides was eight feet at Lady Franklin Bay and twelve feet at Cape Sabine.

As to the results of Arctic exploration, Lieut. Greely said:

I do not think the north pole can be reached unless every circumstance hitherto found to be unfavorable should prove favorable to the party attempting to reach the pole. If it is to be done at all, it will be done by Franklin. It could never have been reached by the Jeannette's route. That there is an open polar sea, I am well-nigh certain. This is proved by the ice drifting out of Muscle Bay and Spitsbergen in midwinter, and the northern drift of the polar pack experienced by Pavly and Lockwood in 1874. Men may live winters very well at Franklin Bay, but physical strength rapidly deteriorates. If we had had every supply and necessary of food, we could have lived perhaps eight or ten years at Lady Franklin Bay.

When the party left Fort Conger, they left two tons of coal from a supply mined at Water-Course Bay, and eight months' supplies, in case they should be driven to return, relying mainly for provisions on the deposits of the relief expeditions. The records of the expedition, copies of photographs, and four dozen negatives, together with the lighter instruments, including the pendulums, were taken in the boats. The steam-launch towed the other boats, the people and stores being divided among them. After some difficulty with an ice-pack and a narrow escape from a nip, they reached Baird Inlet on the 10th, where three tons of coal and some stores had been left. From that point they never proceeded with fifty days' supplies. At Cape Craeport they took up 48 pounds of corned beef left the previous season and ran on to Carl Ritter Bay. The provisions left there by the Frigate in 1861, 200 rations, and 240 cooked at Cape Collinson by Nares in 1875, were taken on board. After being frozen in the ice five days, detained by the boats being forced on shore, and narrowly escaping from several 'wicks' they arrived at Cape Hawkes August 26th. They left a record on Washington Irving Island and obtained a small addition to their supplies in potatoes and pickles from an English cache, the bread being mostly spoiled. Leaving the same day, they were soon struggling with the ice-packs and made extremely slow progress for a number of days, suffering intensely from the cold. After being driven to and fro by the gales and tides and drifting ice-flows, they were compelled, Sept. 10th, to abandon the launch and the Valorous, and retreat over the floes with their two remaining boats, two sleds, and their provisions. Two journeys had to be made over the hummocky ice with each sled to convey the provisions and boats, and only about a mile a day could be accomplished. On the 13th they had to abandon the Narwhal, in order to save the larger sled, which was weakening. Driven back and forth by the gales on the crumbling floe, forced to give up their encampment of snow-houses, they succeeded with great difficulty, on the 29th of September, in escaping to the shore on the north side of Baird Inlet, where they began to construct their winter-quarters. Rice and the Esquimaux men were sent to Cape Sabine to ascertain the condition of affairs, and Long and the Esquimaux Frederick were detailed as hunters. Game was very scarce, and only three seals and a few ptarmigan were obtained.

Rice returned Oct. 9th with the discouraging news of the result of the Garlington expedition, obtained from records at Cape Sabine, and the scantiness of the supplies awaiting them there. They determined to abandon Esquiman Point, as they had called it, starting the next day. They traveled along a strait discovered by Rice, and called by his name, connecting Rosse Bay and Buchanan Strait, which proved Cape Sabine to be an island. Rice and Jens diverged to Cape Isabella, where 144 pounds of meat were found, left there by the English in 1875. Considering the prospects, rations were reduced Sept. 26th, and the meat allowance was only six ounces. They reached the Proteus wreck cache, Oct. 15th, four miles northwest of Cape Sabine, and proceeded to establish there their winter-quarters, calling them Camp Clay. All their supplies were gathered there except one load cached at Cocked Hat Island. They built a rude hut by piling up stones for a wall about twenty-five feet by seventeen. Over it was placed a whale boat left by Beebe in 1883 at Starknecht Island, and the rest of the roof was formed by stretching boat-sails and tent-canvas from the boat to the eaves, which were five feet from the ground. Snow was banked up against the walls to keep out the wind. There was barely fuel enough to warm the food. Canvas was stretched on the ground and covered with buffalo overcoats, and on these the sleeping-bags were placed, which were frequently frozen stiff. The only light was derived from an Esquimaux lamp, consisting of a single wick dipped in seal-oil. When chemically refined, and the two Esquimaux were stationed at the junction of Rice and Buchanan Straits to obtain game, living in a hut on short rations, suffering intensely from cold and hunger. They returned Nov. 8th, having obtained only three seals. On the 21st of November, Rice, Linn, Ellison, and Fredericks set out with a small sled to obtain the meat left at Cape Isabella. On the 9th, Rice returned, reporting that the party was at the head of Rosse Bay, suffering severely, and that Ellison was dying. Relief was sent under Brainerd, who, on the 19th, reached them with food and medicine. Ellison was badly frozen and delirious, and afterward lost his feet and hands. Fredericks and Linn had to be cut from their frozen sleeping-bags. With the aid of Lockwood's fiord, forced to give up the idea of relief, the men were got back to Camp Clay, the object of the trip being given up.
ARCTIC EXPLORATION.

November 1st the ratione had been reduced. In four and a third ounces meat and biscuits and a half ounces bread and dog biscuits and two fifths canned vegetables and three fourths butter and lard, nine tenths and beef extract, one ounce cloudberry, prunes, raisins, and milk. On this basis it was fed that the supplies would last till March 10th and no days' reserve for crossing to Littleton, but the camps that preceded all win an added the sound from closing. Efforts were made to keep up cheerfulness by reading aloud over again their scanty literature, including scraps of newspaper found in a box left by Carlington, and by lectures and debates. A show of celebrating birthdays of Kings was also kept up, but nothing was done. The suntan dress and apparent comfort of the situation. Sergeant Cross in 184th, of course, it was said. On the February, Rice and the Esquimau made camp to reach Littleton Island, but were led to return after six days' absence, having lost the water and the minimum temperature was 30° below zero in January. They were eke off by a few Arctic foxes, seals, and partridges shot near the camp. While the Esquimau, out March 16th from Sandia Harbor to look for game, but were empty-handed in three or four days. In this trip, discovered, from the western end of Mount Carri, three capes in Hazen Bay beyond the farthest reported by Nares. In April the food began to consist largely of shrimps or sea-fish, of which it took to fill a gallon measure, which contained water, lichens, sea-water, saxifrage, and seal skin, though a trifling amount was eaten from the carefully handhewn whale. In April a supply of fresh meat was being demands. On the 3rd of April the Esquimau sank, becoming the first to die of thirst. On the 17th of that month the Esquimau was drowned, depriving of the last bit of water. In April the place was called by Lieutenant, Greene's mother and wife were brought on board the Thetis. The party were transferred to comfortable quarters in the city of Portsmouth, and on the 4th of August a public demonstration of welcome took place. In honor of their return, a statue of the mayor was given, unable to join in the procession, but were present at the reviewing stand at the Rockingham House. Their weakness would not permit of their presence at the public meeting, which was held at the Music Hall, where an address of welcome was delivered by the mayor of the city. Secretary Chandler gave the audience an account of the services of Greene and his men, and of the efforts for their relief and rescue, and complimentary addresses were made by Gov. Hale, of New Hampshire; the Hon. S. J. Randall, of Pennsylvania; Gen. Hazen, and others. The vessels of the Relief Expedition left Portsmouth for New York, Aug. 8th, and arrived there with the remains of the dead on the evening of the 7th. The bodies were landed on the 8th at Governor's Island, with appropriate ceremonies, there to be delivered into the charge of sorrowing friends and relatives. Eleven iron caskets were placed side by side in the

steam-launch from the rescuing vessels. All had been without food for twenty-four hours, and all but these two were on the very verge of starvation. They helped each other to crawl out of the tent, and managed to clamber up a little height, but, seeing nothing, Brainard turned hopelessly back. Long continued to watch until he descried the boat, and then succeeded in raising the signal at the old camp. With tottering steps and glaring eyes he met Capt. Ash as he landed, and, in a few minutes, relief entered the tent of the almost dying party. Connell was recovered with difficulty, and Ellison died after the rescue.

The bodies of the dead, which had been buried near the camp, were exhumed, identified, wrapped up, and packed in ice, until tanks of alcohol could be prepared for their transportation. These were ready in three days, and the bodies were placed in them, wrapped in strips of cotton cloth. On the 23d of June, S. Emery returned from Payner Harbor to the Cape Sabine camp, and made a careful examination of the neighborhood, and, on his return, the ships crossed the ice. The vessels were subsequently brought together at Disco, and set out thence for St. John's, as already related. With the exception of the collier, Loch Garry, the vessels were detained at St. John's until iron caskets could be provided for the dead, and memorial services were held in the churches of that city on Sunday, July 20th. Sick leave was granted to the men of the Greely party, who were all progressing favorably, and the vessels were directed to rendezvous at Portsmouth. They left St. John's July 28th, and arrived at Portsmouth Aug. 1st. They were met there by Secretary Chandler, and Gen. Hazen and other visitors, and a touching scene occurred as soon as Lieutenant, Greene's mother and wife were brought on board the Thetis. The party were transferred to comfortable quarters in the city of Portsmouth, and on the 4th of August a public demonstration of welcome took place. In honor of their return, a statue of the mayor was given, unable to join in the procession, but were present at the reviewing stand at the Rockingham House. Their weakness would not permit of their presence at the public meeting, which was held at the Music Hall, where an address of welcome was delivered by the mayor of the city. Secretary Chandler gave the audience an account of the services of Greene and his men, and of the efforts for their relief and rescue, and complimentary addresses were made by Gov. Hale, of New Hampshire; the Hon. S. J. Randall, of Pennsylvania; Gen. Hazen, and others. The vessels of the Relief Expedition left Portsmouth for New York, Aug. 8th, and arrived there with the remains of the dead on the evening of the 7th. The bodies were landed on the 8th at Governor's Island, with appropriate ceremonies, there to be delivered into the charge of sorrowing friends and relatives. Eleven iron caskets were placed side by side in the
military hospital, each bearing the name of the occupant. The bodies of Privates Henry and Snider were unclaimed, and were sent to Cypress Hills Cemetery for burial. That of Lieut. Lockwood was sent to friends at Annapolis; that of Lieut. Kisingbury to Rochester, N. Y.; Sergt. Israel's to Kalamazoo, Mich.; Sergt. Ralston's to Howard, Ohio; Sergt. Linn's to Philadelphia; Sergt. Cross's to Washington; Private Whistler's to Delphi, Ind.; Corp. Ellison's to Pottsville, Pa.; and Private Ellis's to Clyde, N. Y. Lieut. Greely employed his sickleave in visiting friends and relatives at Newburyport, Mass., where a public reception was given him, Aug. 14th, and the other survivors were left at liberty until two of them were reported to have made a contract for public exhibitions at museums, when they were peremptorily ordered to report for duty.

Almost immediately after the bodies of the dead had been disposed of, the fact became public that, when found, the fleshy portions of several of them had been cut away, and it was inferred that they had been used for food by the desperate survivors. This was neither admitted nor denied at the time by any of the officers of the expedition, though Lieut. Greely declared that, if anything of the kind occurred, it did not come to his knowledge. There was also a report of dissensions among the men at Cape Sabine, and a division into two factions, but this was denied and could not be verified. The statement in regard to the treatment of the bodies of the dead was proved in the case of Lieut. Kisingbury by the examination and examination of the remains, at Rochester, under the direction of medical experts; and in his official report Commander Schley said:

In preparing the bodies of the dead for transportation in alcohol to St. John's it was found that six of them, Lieut. Kisingbury, Sergt. Jewell and Ralston, Privates Whistler, Henry, and Ellis, had been cut, and the fleshy portions removed to a greater or less extent. All other bodies were found intact.

The fact had also become known that Private Henry did not die a natural death, but had been shot. In regard to this, Lieut. Greely promptly made a report declaring that Henry had been shot by his orders, and after reiterated demands from his men, for persistently stealing from the meager supply of provisions on which the lives of all the men equally depended. The lieutenant asked for a court of inquiry or a court-martial to examine into the matter, in case it was deemed advisable by the Secretary of War. No order for this purpose was given. The controversy in regard to the responsibility for the failure of the expedition of 1883 was renewed after the rescue of the survivors. Gen. Hazen in his annual report said: "Up to the return of the expedition this year, I had hoped there would be no occasion for raising the question of blame at this or any future time. But new light has been cast upon the subject and with it my duty becomes plain, and the truth of history and justice to all call for such impartial inquiry and authoritative judgment as a tribunal broad enough to embrace the whole question shall institute and pronounce, and the Congress of the United States is manifestly such a tribunal. . . . I therefore trust that this whole matter of the Lady Franklin Bay expedition and the expeditions organized for its relief will be deemed worthy of a thorough investigation by Congress." Gen. Hazen insisted that both Lieut. Greely in the Arctic, and the Signal Bureau in Washington, carried out their part of the prearranged plans of rescue literally and successfully in every particular. He referred to the failure of Lieut. Garlington to replace the spoiled provisions at Cape Sabine, and quoted from a letter by Lieut. Greely to him April 30th, supposing himself at the point of death, as follows: * Had Lieut. Garlington carried out your orders and replaced the 240 rations of rum and 120 alcohol in English casks here, and the 210 pounds moldy English bread, spoiled English chocolate and potatoes, melted sugar, and the 210 pounds of rotten dog-biscuit, we would without doubt be saved.*

**ARGENTINE REPUBLIC**

An independent republic of South America: area, 1,166,682 square miles; population (as officially estimated in September, 1892), 2,342,000; and that of the capital, Buenos Aires, 285,000.

**Immigration.** — The following table exhibits the nationality and number of the immigrants landed at Buenos Ayres in the years 1880, 1881, 1882, and 1883:

<table>
<thead>
<tr>
<th>Nationality</th>
<th>1880</th>
<th>1881</th>
<th>1882</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italians</td>
<td>18,418</td>
<td>20,835</td>
<td>22,577</td>
<td>27,048</td>
</tr>
<tr>
<td>Spaniards</td>
<td>5,213</td>
<td>8,816</td>
<td>8,395</td>
<td>10,346</td>
</tr>
<tr>
<td>French</td>
<td>2,175</td>
<td>2,813</td>
<td>3,309</td>
<td>4,224</td>
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<tr>
<td>English</td>
<td>568</td>
<td>1,749</td>
<td>899</td>
<td>981</td>
</tr>
<tr>
<td>Swiss</td>
<td>613</td>
<td>985</td>
<td>918</td>
<td>1,270</td>
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<tr>
<td>Germans</td>
<td>445</td>
<td>591</td>
<td>1,128</td>
<td>1,894</td>
</tr>
<tr>
<td>Austrians</td>
<td>179</td>
<td>426</td>
<td>673</td>
<td>1,007</td>
</tr>
<tr>
<td>Portuguese</td>
<td>34</td>
<td>78</td>
<td>108</td>
<td>186</td>
</tr>
<tr>
<td>Belgians</td>
<td>67</td>
<td>121</td>
<td>187</td>
<td>296</td>
</tr>
<tr>
<td>Danes</td>
<td>6</td>
<td>11</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>Dutch</td>
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<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Russians</td>
<td>9</td>
<td>95</td>
<td>98</td>
<td>85</td>
</tr>
<tr>
<td>Greeks and Turks</td>
<td>71</td>
<td>78</td>
<td>14</td>
<td>94</td>
</tr>
<tr>
<td>Americans</td>
<td>191</td>
<td>73</td>
<td>294</td>
<td>381</td>
</tr>
<tr>
<td>Various</td>
<td>299</td>
<td>648</td>
<td>410</td>
<td>258</td>
</tr>
<tr>
<td>Total</td>
<td>$1,648</td>
<td>$1,468</td>
<td>$1,041</td>
<td>$5,478</td>
</tr>
</tbody>
</table>

**Government, Public Offices, etc.** — By the terms of the Constitution, bearing date of May 15, 1853, with modifications in 1860, the executive power is vested in a President, elected for six years by representatives of the fourteen provinces, equal to double the number of senators and deputies combined. The President is commander-in-chief of the army, appoints all civil, military, and judicial office-holders, and has the right of presentation to bishops. He is solely responsible for the acts of the executive. The legislative power resides in a National Congress consisting of a Senate and a Chamber of Deputies. The senators, twenty-eight in number, elected by the provincial Legislatures,

* For details of area, population, etc., reference may be made to the "American Cyclopedia" for 1890.
ARGENTINE REPUBLIC. 39

st have completed thirty years of age, n citizens for at least six years, and income of not less than $300 per annum. 1 of the Senate is renewed every three years, while the deputys, eighty-six in number, or four years, must be at least twenty-

of age, and have been citizens for more than four years. Both senators and are paid a yearly salary of $3,500 each. Bills assemble annually from May 1st

rubber 50th. A Vice-President, elected me manner and at the same time as
tent, fills the office of chairman of the
ut has otherwise no political power.

resident of the Republic is Lieut.-Gen.
A. Roca (inaugurated Oct. 12, 1880),

vice-President, Don Francisco Madero.

abinet was composed of the following:

: Interior, Don Bernardino de Irigoyen; Affairs, Don Francisco Ortiz; Finance,
torio de la Plaza; Justice, Public and Public Instruction, Don Eduardo

War and the Navy, Gen. Benjamin

vernors of the several provinces, etc.,

Aires .......................... Dr. D. Rocha.

Dr. D. Rocha.

es .......................... Don T. Aest.".ro.

Don A. Beto.

os .......................... Col. J. Arista.

Don E. Tello.

Don B. Jaramillo.

Don J. R. Segura.

Don M. S. Ortiz.

Don A. Gil.

Don Z. V. Rocha.

Don M. Zavala.

Don L. O. Pinto.

Don R. Paz.

aco Territory 

Col. F. Rosch.

Col. L. Winter.

Col. B. Roes.

argentine Envoy Extraordinary and

argentine Consul General at

Luis L. Dominguez (accredited in

United States Minister pro tem, in the

United States Consul at Buenos Ayres.

The Argentine army in May, 1884,

of the National Guard, was 8,579

comprising 3,509 foot, 2,320 horse, 1

artillery. If to this be added the id

recruit pickets, and the students

military schools, aggregating 3,008, the

rgh will stand at 9,587. In June, 1884,

were 4 lieutenant-generals, 14 gen-

divisions, 50 colonies, 127 lieutenant-

 majors, and 743 officers of other

At that time the National Guard was

In 1883 the military academy

structures and 145 students; and the

school (for non-commissioned officers)

ors and 68 students.

The navy, in June, 1883, was com-

9 vessels, namely: 3 steam-ironclads,

7 torpedoes, 3 steam-transports, 8

cruisers, 6 other steam-vessels, and 12 sail-of-

the-line, with an aggregate tonnage of 13,580,

and an armament of 56 guns, and manned with

200 officers, 1,005 seamen, 1,737 marines (in-

cluding officers), and a torpedo division 107

strong. In the foregoing enumeration is not

included the flotillas of the Rio Negro, com-

prising 3 steamers and 3 steam-launches.

In 1882 the naval school consisted of 17

instructors and 50 students; another school (for

seamen) had 9 instructors and 48 students.

The navy, like the army, is recruited by vol-

untary enlistment for a stated period.

Education.—According to the school census

of 1883—1884, there were within the republic

2,023 primary schools, national, provincial, mu-

nicipal, and private, with 3,761 teachers and

assistants, and 146,325 pupils, including both

sexes, the total number of children between

the ages of five and fourteen years being 508,091.

These figures show a considerable im-

provement as compared with those for 1881,

in which year the aggregate attendance was

but 136,928, while the number of children fit

to attend school was estimated at 850,000.

The annual expenditure by the Federal Gov-

ernment for those schools, as given in the census,

was $3,444,197.44. Higher branches of instruc-

tion were pursued in the two Universities of

Buenos Ayres and Cordoba, special schools of

law, medicine, theology, and military and naval

schools, forty national colleges (with their

nine annexes), and eighteen normal schools.

Finance.—In the budget for 1884 the national

revenue and expenditure were estimated at

$38,770,338 and $34,056,584 respectively, with

a resulting deficit of $283,151. 2 At the end of

the present year (1885), the 6 per cent. con-

solidated debt, with a small portion at 8 and 9

per cent, will have been reduced to $73,015,000.

2 Commerce.—The imports for the year 1882

were of the value of $75,930,288 (including the

trade in transit, amounting to $17,057,917),

fully one third having been for British, and

but one twelfth for American products.

The value of the exports for the same year

was $75,496,322 (including $17,057,917 in

transit), of which about $16,500,000 was to

France, $14,000,000 to Belgium, $7,500,000

to Great Britain, and but $3,861,909 to the

United States.

The sources, destinations, and values of the

Imports and exports through Buenos Ayres for

the nine months, January to September, 1884,

were as follow:

<table>
<thead>
<tr>
<th>FROM</th>
<th>VALUE</th>
<th>FROM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>$8,570,258</td>
<td>Portugal</td>
<td>$2,889</td>
</tr>
<tr>
<td>Brazil</td>
<td>1,174,468</td>
<td>Spain</td>
<td>2,840,156</td>
</tr>
<tr>
<td>Canada</td>
<td>40,000</td>
<td>Sweden</td>
<td>14,973</td>
</tr>
<tr>
<td>Chile</td>
<td>6,368</td>
<td>United States</td>
<td>2,912,911</td>
</tr>
<tr>
<td>France</td>
<td>10,000,711</td>
<td>Uruguay</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Germany</td>
<td>8,056,284</td>
<td>West Indies</td>
<td>198</td>
</tr>
<tr>
<td>Great Britain</td>
<td>20,510,725</td>
<td>Other sources</td>
<td>6,645</td>
</tr>
<tr>
<td>Holland</td>
<td>615,301</td>
<td>Italy</td>
<td>2,887,775</td>
</tr>
<tr>
<td>Paraguay</td>
<td>3,624,956</td>
<td>Total</td>
<td>$34,475,443</td>
</tr>
</tbody>
</table>

* President Roca, in his message, May, 1884.
ARGENTINE REPUBLIC.

EXPORTS.

<table>
<thead>
<tr>
<th>TO</th>
<th>Value.</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>$68,000.65</td>
<td>Portugal</td>
</tr>
<tr>
<td>Brazil</td>
<td>$504,168</td>
<td>Spain</td>
</tr>
<tr>
<td>Chile</td>
<td>$50,273</td>
<td>United States</td>
</tr>
<tr>
<td>France</td>
<td>$1,048,548</td>
<td>Uruguay</td>
</tr>
<tr>
<td>Germany</td>
<td>$4,460,801</td>
<td>Other destinations</td>
</tr>
<tr>
<td>Great Britain</td>
<td>$1,008,281</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>$1,641,680</td>
<td></td>
</tr>
<tr>
<td>Paraguay</td>
<td>$9,351</td>
<td></td>
</tr>
</tbody>
</table>

Total | $377,514,914

Shipping Movements.—The shipping movements at the various ports of the republic were as follow in 1888:

**Entered**:

Steamers, 3,028, with an aggregate of | 1,601,019
Bulking-vessels, 3,440, with an aggregate of | 151,049

**Claimed**:

Steamers, 2,172, with an aggregate of | 1,812,291
Bulking-vessels, 2,380, with an aggregate of | 424,134

**COASTING AND FLUVIAL TRADE.**

**Entered**:

Steamers, 6,041, with an aggregate of | 1,524,643
Bulking-vessels, 16,411, with an aggregate of | 517,700

**Claimed**:

Steamers, 6,041, with an aggregate of | 1,524,643
Bulking-vessels, 16,411, with an aggregate of | 517,700

The distribution of this trade by flags was:

 Argentine, 54 per cent.; French, 29; British, 7; Uruguayan, 3; Italian, 2; others, 5.

Railways.—At the end of 1888 there were 2,060 kilometres of railway in operation, and 2,667 in process of building.* "The locomotive-whistle was heard for the first time in the province of Santiago del Estero on Oct. 12, 1884." The horse-car lines of the capital, at the end of 1882, covered an aggregate of 90 miles, and, with 1,001 employees, carried an average of 51,740 passengers daily. There were also lines in some of the smaller towns of the province of Buenos Ayres, and the city of Cordoba had two lines, and Rosario one.

Telegraphs.—In January, 1888, the telegraph lines of the republic were of the total length of 13,543 kilometres, of which 10,772 were Government property; the number of offices was 202, and the dispatches transmitted during the year immediately previous, 438,090, of which 71,888 were official.

The total number of dispatches for 1888 was 496,726, of which 71,460 were official. At the end of 1888 there were in Buenos Ayres two telephone companies, with 1,500 subscribers.

Post-Office.—In 1888 there were transmitted through this department 17,500,000 letters, postcard, and packages of printed matter.
"The exchange of correspondence, etc., with foreign countries in 1888 was as follows: Letters, 2,207,000; printed matter, 1,400,000."

The number of registered packages was 99,818. The yield of the Post-Office Department in 1888 was $352,614.83.

Improvements.—Chief among these, besides the already well-advanced work at canalization of the Riachuelo of Buenos Ayres to fit it for craft of all sizes, may be mentioned the extension of pipes for the supply of potable water in that city.

ARIZONA.

TERRITORIAL GOVERNMENT.—The following were the Territorial officers during the year: Governor, Frederick A. Tittle; Secretary, H. M. Van Arman; Treasurer, T. J. Bel ler; Chief-Judge of Supreme Court, Sumer Howard; Associate Justices, A. W. Sheldon and Daniel H. Pinney.

**Political**—A Republican Territorial Convention was held in Phoenix on the 15th of April to select delegates to the National Convention. Another convention of the same party was held in Tombstone on the 15th of September, which nominated C. C. Van for delegate to Congress, and R. L. Long for Superintendent of Public Instruction. Among the resolutions adopted were the following:

That we with pleasure confirm the action of the National Republican Convention in recommending that all Federal appointments to the officers of the Territories of the United States be made within the Territories themselves, recognizing the fact that citizens of the Territory are best qualified to discharge the responsible duties appertaining to such positions.

That we recognize the depressing influence of the many old fraudulent claims to large tracts of land within our Territory; and we demand from our delegate in Congress that he use his best efforts in securing united action with the Representatives of all States and Territories interested in obtaining from Congress such action as shall speedily settle and quiet all such claims.

This convention favors any and all measures that will tend to bring labor and capital, organized and unorganized, into the Territory of Arizona. Equality before the law is the fundamental principle of the Republican party of the nation, and we pledge the Republican party to such a course of legislation as will extend to corporations and corporate capital in Arizona the same protection and the same laws accorded to individuals to perform their just share of the labor and to pay their just share of the taxation we pay to carry on the Government, making the same rules apply to corporations as to individuals.

That in our opinion there is too much money appropriated for the support of hostile Indians to permit of a speedy and just settlement of this vexed question. We believe that a tribe of hostile savages should not be kept in our midst and supported out of the public treasury; we therefore recommend that the safety and protection of the frontier settlers be made the first object in all Territorial and Federal legislation affecting the Indians. We are in favor of the disarmament of all Indians in this Territory as indispensable to the safety of our people.

That we are in favor of reducing the size of the White Mountain and San Carlos Indian Reservations, and especially are we in favor of segregating the coalfields therefrom, and throwing open all reservations for the prospecting of minerals and for the locating and working of mineral claims.

That we condemn the practice of polygamy and bigamy as a crime, and favor the passage and enforcement of such laws as will prevent the continuance of such practice within this Territory.

That we demand the passage of such quarantine and other laws by the coming Legislature as shall enable the officers of the law and owners of live-stock to protect this great industry from the ravages of contagious diseases.

School Population.—The number of children of school age is 9,376, as follows:

- Pima County: 2,817
- Yuma County: 649
- Yavapai County: 1,099
- Graham County: 3,826
- Maricopa County: 1,811
- Pinal County: 154
- Apache County: 1,105
- Gila County: 779
- Cochise County: 1,016
- Mohave County: 104
ARIZONA.

1 Condition.—The year has been a pros-
one for Arizona. Says the Governor,
port of Oct. 26, 1884:
ulation has been steadily increasing; the
ent of our material wealth embraced in
grazing, and agriculture has shown marked
; our higher productions have been har-
ting, and the annuities of government have been
there has been absolute freedom from the
son of hostile savages, which in previous
es such a menace to the progress of nation;
and although the lawless elements
of the year committed deeds of 
stridency within the boundaries of Arizona,
ve in most cases expiated their crimes
orneath penalties known to the law, and the
the Territory are to be congratulated
ating order and improved social condi-

—The Governor says:
duct of our mines has been considerably
past year than for the preceding twelve
Several large bullion-producing properties
lying idle a considerable portion of the
the heavy expense of op-
ligh transportation rates, and a depreciation
of those being treated. While the ores
are undoubtless of a higher average than
Colorado or other localities with which com-
be made, the expense of mining, and
of transportation, is much greater. These
however, are being steadily reduced, and
being small, the valuable mineral deposits
enable Arizona to rank first among the bul-
ancing States and Territories of the Union.

—Mining interests of the Territory have largely
during the year; extensive inroads in sev-
zen in Arizona. There has been an entire ab-
epidemic diseases among cattle and horses
zontal, and the loss per year is only about
much of the 60,000 square miles of land in Arizona, though bountifully covered
grasses, can not be utilized at present for
purposes on account of the absence of water.
ness, however, that this drawback can be
of almost completely remedied by the in-
artesian water. Where the experiment
Valle Date, Cochise County, the result is most satisfactory, "sufficient wa-
been obtained in this way to water at least
ites, besides affording sufficient irrigation to
the gardens that a population attending to
would require, and perhaps tree-plantations
"dief of stock from sun and wind." There
the Territory about 500,000 head of stock,
ly good pasturage, under present condi-
1,000,000 more.

—The Governor says:
1d per acre of wheat and barley is from
ve to thirty-five bushels, and, after this is
int, corn can be planted on the same ground
the crop raised the same season. Apples,
ears, plums, figs, quinces, apricots, and
very other variety of fruit, yield largely,
anges, and olives can be raised with profit,
gapes can not be produced anywhere. Su-
cotton have also been grown successful-
are numerous fertile valleys throughout
story in every direction where considerable
been done. Irrigation is necessary to insure
f in nearly every locality, although in a few
thern valleys the sub-irrigation is sufficient
rainfall during the wet season. In the Salt
River Valley an immense canal is being constri-
which will convey water enough, it is claimed, to
claim at least 100,000 acres, besides furnishing motive
power for an immense amount of machinery. This
channel is expected to be ready for use early in the
spring of 1886. In connection with agricultural pur-
ests hog-fattening and pork-packers bids fair to be-
come are long an exceedingly profitable business.
But little work is required in fattening; the hogs run
on the alfalfa-fields and keep in good order until the
grain is harvested, and they are then turned upon the
grain stubble-fields.

Land Grants.—Uncertainty regarding the final
disposition of lands granted to the Atlantic and
Pacific and Texas Pacific Railroads by Congress
is preventing the settlement of Arizona to a
extent. The Governor urges a determina-
tion by Congress of the question whether the
railroads or the Government own the lands
ferred to.

There are numerous alleged Mexican grants
in the Territory, the title to which, in many
cases, is believed to be fraudulent, either as to
the grant itself or the proposed boundaries.
The Governor asks that immediate action be
ecessary to determine these titles, so that the lands
may be properly improved, and added to the tax-
able value of the property of the Territory.

Timber.—The immense timber region of
northeastern Arizona is commanding recog-
nition. Lumber is being manufactured and
shipped into southern California in successful
competition with the timber districts and mills of
the North Pacific coast; it is also finding a
profitable market in various portions of the
middle Southwest and South into the Republic
of Mexico.

Railroads.—Two railroads have been project-
from north to south in the Territory, the
Arizona Mineral Belt and the Central Arizona
Railroad. The former has been surveyed from
Winslow and Flagstaff, on the Atlantic and
Pacific road, to Globe, in Gila county, connec-
ting at Globe with a road from Tucson, a
distance of 320 miles, through an extensive
timber, mineral, agricultural, and grazing
region. The Central Arizona Railroad has been surveyed
from Chino Station, also on the Atlantic and
Pacific, 154 miles west of Winslow, to Prescott,
the capital; from here it is proposed to con-
tinue it south to the rich valleys of the Salt
river and Gila.

Mormonism.—There has been extensive immi-
ration to the Territory during the past few years of
Mormons who, it is alleged, are practicing
polygamous marriage. A strong opposition is
developing among the citizens against this class
of Mormon immigration, and in some localities,
notably Apache county, citizens are arrayed
against each other upon this subject—Mormons
and Gentiles—which, unless the legal remedy
is applied and polygamous relations prohibited,
may result in such a conflict as will cause the
loss of life and destruction of property. A
number of Mormons are under indictment.

Other Matters.—The Governor asks Congress
for assistance in improving the school system,
the taxation for which is burdensome upon the
ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE.

Indebtedness.—The State now owes the following undisputed debt:  
- Bonds drawing 5 per cent. interest ........................................  $26,000
- Bonds drawing 6 per cent. interest ........................................  $361,000
- Bonds drawing no interest ..................................................  8,100
- Interest overdue and unpaid ................................................  $190,048

Aggregate principal and interest ..........................................  $519,048

Sufficient funds are in the treasury to redeem the $8,100 non-interest-bearing bonds not yet presented for redemption. There will be in the treasury on the 1st of January, 1885, about $550,000. The bonded debt outstanding is composed of the original $5,000,000 authorized to be issued for the establishment of a Real Estate and State banks, from which the $500,000 Holford bonds are to be deducted. Most of these bonds are funded under the act of 1860, and the interest is paid up to 1878.

The question of a new funding act, by which all this indebtedness is to be refunded in a new bond, will occupy the attention of the incoming Legislature.

Wealth of the State.—In 1888 the taxable property of the State was $126,862,392. The assessment for 1884 will show an increase of about $5,000,000. This is based on official returns from fifty-three out of the seventy-five counties in the State.

Population.—Immigration has steadily poured into the State during the year, the population now being estimated at 1,000,000.

Crops.—From crop statistics made by the Secretary of State, it is ascertained that a much larger acreage was planted during the year than in 1888, and the yield was greater by one fourth, both of cotton and corn. The autumn season was exceptionally fine for the gathering of cotton, and the staple was exceedingly good.

Public Lands.—The Commissioner of State lands reports that the State now has for disposal 80,000 acres of swamp and overflowed, and 20,000 acres of lands forfeited for the non-payment of taxes. The former are disposed of at one dollar an acre, the latter at fifty cents an acre, or, upon occupation and settlement, each head of a family can have 160 acres by simply paying an office-fee of five dollars.

ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE: American.—The thirty-third meeting of the American Association for the Advancement of Science was held in Philadelphia, Sept. 4 to Sept. 11, 1884. Owing partly to the recent meeting of the British Association, it was more largely attended than ever before. Prof. C. A. Young, of Princeton, the retiring President, was succeeded by Prof. J. P. Lesley, of the University of Pennsylvania. At the opening meeting the necrological list for the year, and the list of proposed new members, the contributions received, etc., were read. The principal gift was one of $1,000 from Mrs. Elizabeth Thompson, of Stamford, Conn., to be expended in researches in heat and light. Governor Patterson, of Pennsylvania, delivered the address of welcome. A short history of the A. was given by Prof. Young. It was in 1840, as a geological society, under the presidency of Prof. Hitchcock. The name changed to American Assocites and Naturalists, and in 1847 the title was adopted. During the six meetings were held. For this meeting were the sections of the society: their presidents and vice-presidents:


The reading of papers, of which were announced, and of which 804 were read, was begun immediately on the first day of the sessions of the sections. They met daily at 10 a.m., and the remnants at 2 p.m. The papers of Prof. L. "The Study of Chemical Affinity," Eddy on "The Modern Teaching of Science in our Universities," and Prof. on "The Geology of the Crystalline Northwest," were among the papers of the first day. On the second day of the Anthropological Section, much was excited by a paper read by Mr. Fletcher on the habits and customs of the Omaha Indians. On this and subsequent days there were read several papers in this section which were read dies. In Section E, an interesting read by Prof. J. E. Hilgard on "The Level of the Atlantic Ocean and Gulf of Mexico," with Remarks on the Gulf Stream and Deep-Sea Temperature." In it the level of the ocean at the mouth of Mississippi and at Sandy Hook, N. J., to be forty inches. This was a startling assertion, requiring the belief of its author to sustain it. O ther technical papers were read in the Section. At a general meeting in the Prof. Minot presented a petition, many eminent scientists, reading as follows:

The undersigned respectfully request the Assembly of the national Scientific Congress, to meet at different countries, and, if it should be feasible, to take measures to initiate the under

The same petition had been presented to the British Association in Montreal. T can Association referred it to a c
ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE.

The meeting of the British Association for the Advancement of Science was held in Montreal, Canada, from Aug. 28 to Sept. 3, 1884. For the first time in its history its annual meeting occurred outside of the British Islands. The society was founded fifty-three years ago, by Sir David Brewster, Sir Humphry Davy, Sir John Herschel, and other eminent scientists. To attend the Montreal meeting 800 members crossed the ocean. The sum of $10,000 was raised in the city of Montreal to defray the expenses, and 300 members were received as guests in private residences. The Council of the Association invited the standing committees and fellows of the American Association for the Advancement of Science to attend as honorary members. The proceedings were opened with an address from the Mayor and Corporation of Montreal, and on the following day the Governor-General, Lord Lansdowne, welcomed the Association.

The President-elect, Lord Rayleigh, Professor of Experimental Physics at Cambridge University, was introduced by Sir William Thomson. Prof. Rayleigh's address on "Progress in Physics" has attracted much attention. The work of the society, which represented the reading of 827 papers, was divided among eight sections. The eight sections, whose presidents

were to confer with the British committee probable now that no such Conferences are to be organized. The proceedings were interrupted on the 7th, and on Monday, the 8th, more were read, and receptions were offered by the Association by the University of Pennsylvania and the Woman's Medical College. One of the notable papers of this was presented by Thomas Hargrave, in Sec- treating the apprenticeship system, as a possibility of substituting therefor training by lectures or trade-schools.

next day the election of officers for the place, with the following result:

- Prof. H. A. Newton, of Yale. Vice- 
- Section A: J. M. V. Van Vleck, of Middle- 
- Section B: Prof. C. F. Erskine, of Prin- 
- Section C: William E. Nichols, Boston; 
- Section D: Prof. S. Burrush Webb, Cambridge; 
- Section E: Edward Orton, Columbus, Ohio; 
- Section F: G. Wider, Cornell University; 
- Section G: H. Gates, Cornell; 
- Section H: Prof. William 
- Section I: Prof. Edward Al- 
- Permanent Secretary.—Prof. F. W. 
- Cambridge (re-elected). General Secret- 
- Secretary: N. W. Dillinger, of 
- Secretary.—Sec- 
- Section A: E. W. Hyde, of 
- Section B: Prof. A. A. Michelson, of 
- Section C: Prof. F. F. Dunning- 
- Secretary of Virginia; 
- Section D: C. J. Wood- 
- Section E: Prof. H. Carville Lewis, 
- Section F: M. C. Fernald, Maine; 
- Section G: W. B. Walmsley, Philadelphia; 
- Section H: 
- Secretary, Mrs. Erminnie A. 
- New Jersey; 
- Section I: J. W. Chickering.

is the first time in the history of the 

a woman has been elected an official. Mrs. Smith had attracted attention the week before at the Mont- 

ting of the British Association, where on the Iroquois Indians had been received. The next place of meet- 

d was chosen.—Bar Harbor, Maine, with the title of the Secretary, if found more suit- 

able general meeting closed with the resolutions, prepared by Prof. 

ige, asking Congress to provide at 

the Department of Agriculture and to 

er various State boundaries. In the 

ological Section another paper on the 

ians was read by Mr. Frank La 

full-blooded Omaha. In the same 

ref. Edwards Morse read a paper en- 

Interview with a K华人. It was 

esting, and excited a great deal of 

The chair was occupied during its 

by Prof. Kubech, of the University.

On the following day various ex- 

the West and North were arranged 

feature of the proceedings was a 

in Section II, by Prof. Graham 

"The Evolution of a Race of Deaf- 

He asserted that con- 

was on the increase, and was 

y to the fourth generation in some 

cases. He advocated a mingling of the deaf and dumb with the rest of the people. When the last day of the session, Sept. 11th, was reached, only six of the nine sections were un- 

adjourned. Most of the papers were technical. In the Section of Geology a paper of general interest, by Prof. H. Carrington Bolton, of Trinity College, and Prof. Alexis A. Julien, of Columbia College, was read. Its subject was "Musical Sand," a variety that produces a long, musical sound, like the note of a violin, when it is compressed. In the Chemical Section, Prof. A. Vernon Harcourt spoke, by special invitation, on "Minute Study of Chemical Change" and on "A Lamp for producing Con- 

stant Fire."

Owing to the illness of Prof. Lesley, Prof. 

Cope presided at the general meetings. By one 
census, the number of members, with guests, 
was put at 1,257, of whom 300 were foreign- 

ers. Among other exercises of special interest may be mentioned the following: Prof. 

Young's introductory lecture on "Pending 

Problems in Astronomy"; Prof. Cope on "Evolution and Origin of Life"; Prof. J. B. 

Martin, of England, on "The Future of the 

United States"; Prof. E. L. Nichols, of Law- 

rence, Kansas, on "The Sensitiveness of the 

Human Eye"; and Prof. R. S. Ball, Astron- 

omer Royal of Ireland, on "The Methods of measuring Distances between the Stars." Three hundred scientists came by special train from Montreal, where the British Association had just closed its meeting.

Abstracts of the papers will be found printed in the journal "Science," published in Boston.

British—The fifty-fourth annual meeting of the British Association for the Advancement of Science was held in Montreal, Canada, from Aug. 28 to Sept. 3, 1884. For the first time in its history its annual meeting occurred outside of the British Islands. The society was founded fifty-three years ago, by Sir David Brewster, Sir Humphry Davy, Sir John Herschel, and other eminent scientists. To attend the Montreal meeting 800 members crossed the ocean. The sum of $10,000 was raised in the city of Montreal to defray the expenses, and 300 members were received as guests in private residences. The Council of the Association invited the standing committees and fellows of the American Association for the Advancement of Science to attend as honorary mem- 

bers. The proceedings were opened with an address from the Mayor and Corporation of Montreal, and on the following day the Governor-General, Lord Lansdowne, welcomed the Association.

The President-elect, Lord Rayleigh, Professor of Experimental Physics at Cambridge University, was introduced by Sir William Thomson. Prof. Rayleigh's address on "Progress in Physics" has attracted much attention. The work of the society, which represented the reading of 827 papers, was divided among eight sections. The eight sections, whose presidents
and vice-presidents are given below, held meet-

ings simultaneously in the different buildings 
of McGill University: and Dr. James Hall, Nat-

Geologist of New York, the degree of LL.D. 

Of the whole number of papers read, above 
forty, or one eighth, were by Americans. 

During the progress of the meeting, Lieut. 
Greely, the Arctic explorer, was present, and 
took such part as his feeble health allowed. 

He was accompanied by Lieut. Ray, who spoke 
upon the result of the recent Arctic expedition. 

At the meeting of the General Committee, 

the total membership of 1,772 was reported. The 

committee then adjourned, to meet in Lew-
don, Nov. 11. The closing meeting was held 
in Queen's Hall, Sept. 3, with Lord Rayleigh 
the chair, when Sir William Dawson, Princi-
pal of McGill University, conferred the degree 
of LL.D. on nineteen of the members. The 

Association adjourned, to meet again in Aber-
deen, Scotland, in 1885. Three hundred 

of the members then went to Philadelphia, to 
attend the meeting of the American Association 
where they were formally received Sept. 7. 

One of the features of the British Society's 
committee-work. Many reports were re-
ceived from committees on different subjects 
and the sum of $1,582, or $2,000 nearly, was 
allowed for this class of work, divided among 
80 committees, while 11 received no allow-
ance. Reports of the various papers will be 
found in the journals, "Nature," published in 

ASTRONOMICAL PHENOMENA AND PROCESS 

Observatories and Instruments.—The most im-
portant event in the history of observatories 
this country during 1884 has been the com-
pletion of the Lick Observatory in California. 

Its meridian circle has been completed by the 
Repsolds, of Hamburg, and was mounted dur-
ing the month of September, 1884, under the 
direction of Prof. E. S. Holden. This case 
holds the world, with the exception of the great telescope, which is to be larger and more powerful than any ever before 
made. A difficulty has been met with in the 
construction of this instrument which prevents 
us from fixing a definite figure for its complete 
workings. The optician, Feil, of Paris, who contracted to 
supply the rough glass disk, has not yet pro-
duced a crown glass of the necessary size, al-
though the contract was made with him in 
1880. The result is, that the instrument can 
hardly be said to have advanced beyond its 
first stage, because, until the glass is in the 
hands of the optician, the exact size and length 
of the telescope must be a matter of some 
certainty. This delay is the more to be re-
gretted from the fact that the fine collection 
of instruments which the observatory now pos-
sesses can not be made fully available for 
astromonical use until the great telescope is 
completed. By the terms of Mr. Lick's dona-
tion the trustees have no power to employ a 
astronomer. Their duties are confined to com-
pleting the observatory and telescope, and
is ready, the whole establishment is
ed over to the Board of Regents of
sity of California, who are to appoint
. The institution is to be thereafter
omical department of the university.
ke arrangement can be made for
legal difficulty thus arising, the
its must stand idle for several years

is one important additional have been made
tex telescopes of the world. The
r the great Washington telescope,
nearly ten years ago, has
lying idle in the workshop of
ark, awaiting the completion of the
ak Observatory of the University of
or it was designed. Thisy is now so far completed that the
was mounted in the autumn of 1884.
addition has been the Russian tele-
hirty inches aperture, which ranks as
t refractor yet made. The glass was
by the Messrs. Clark about the be-
1884. In the spring following Di-
ue visited the United States for the
esting the glass and accepting it if
factory. Having found the result to
fulfill his best expectations, the
ipped to Pulkowa, where it has
awaits the completion of the
and of the dome which is to contain
mechanical difficulties of getting a
re than sixty feet in diameter into
operation were such that the tele-
d not be mounted until the autumn of
mechanical work of the mounting
umber and ingenuity of its devices
sent use, far ahead of any similar
t before devised, and reflects additional
the Repsolds, of Hamburg, the
orm to whom the work is due. The
alone is a piece of mechanism which
ly and number of its parts seems
the work of an ordinary ob-

The rigor of the Russian winter is
le to astronomical observations, but
ed that active work with the new
ill be commenced early in the

end of mounting Reflectors.—The Messrs.
Paris, have devised a method of the
rors of great reflecting tele-
ch, if entirely successful, may result
creasing the limits of size of these
es. Theoretically, a reflecting tele-
be constructed of far greater power
largest possible refractor, because there
is to its size. But in practice it is
receptors of more than two or three
meter so change their form by the
their own weight that they can not
images of a celestial object. The
but ingenious device of M. Henry
grinding the back of the reflector
shall accurately fit upon a stiff disk
size and form as the reflector it-
self. A sheet of fine flannel is then in-
posed between the two, and the reflector is
upported upon the flannel. The result of the
elasticity of the flannel is that the reflector is
sustained with greater uniformity than by any
other system. This method is founded on the
same general idea as that of the late Dr. Henry
Draper, who mounted his reflector with great
success upon an air-cushion of rubber.

Equatorial Cade.—This term has been ap-
plied to an instrument of new construction recently
mounted at the Paris Observatory. The main
ube of the telescope is directed toward the
outh pole, and therefore in the latitude of
aris looks downward at an angle of 48° with
the horizon. It is so mounted as to turn round
on its own axis, but is otherwise immovable.
From its lower end a second tube projects at
right angles, so that when the first tube is
urned round, this second one sweeps along the
plane of the equator. In the elbow at the
junction point, a reflector is placed at an
gle of 45° with each tube. At the end of the
second tube is placed a second reflector, mounted
upon an axis concentric with the
tube, with which it also makes an angle of 45°.
By turning this second reflector the line of
ight is made to sweep along the meridian from
one pole to the other. By turning the tele-
scope upon its axis it sweeps in right ascension,
and thus by combining the two motions the
line of sight can be directed to any point in
the heavens. The eye-piece being fixed, the
observer sits in a comfortable room looking
down into the telescope, which he directs from
point to point by simply turning one of two
handles. The convenience in use is very im-
portant, and it is expected that far more work
can be done with this usual form of in-
strument. The images of the stars are not se-
iously injured by the two reflections, a result
due to the system of mounting the reflectors on
flannel sheets.
The largest and finest heliometer yet made
has been brought into activity at the observ-
atory of Yale College. One of the first works
undertaken by it is the triangulation of the
Plaines by Dr. W. L. Elkin. A yet finer and
larger instrument has been contracted for by
Director David Gill for the observatory at the
Cape of Good Hope, and will probably be com-
pleted by the Repsolds during the year 1885.

Astronomical Work under the Bureau of Naveation,
Army Department. The United States Naval Ob-
servatory.—The annual report of the Chief of
the Bureau of Navigation to the Secretary of
the Navy comprises detailed reports of the
astronomical work of the Naval Observatory.
A board has been organized, consisting of the
Superintendent, the senior Professor of Math-
ematics, and the senior line officer, who are to
deliberate from time to time upon the conduct
of the observatory, and whose conclusions
shall form the basis of work to be done in each
year. Each officer in charge of a separate
branch of work is to submit annually or often-
er a statement of its conditions, and what he proposes to do during the coming year. It is proposed to distribute this programme among other observatories, in order to avoid the duplication of work. A recommendation of the preceding year is also renewed that a board of visitors be appointed annually to examine into the conduct of the observatory and make such suggestions as may add to its general usefulness. With the great equatorial Prof. Hall has continued his observations of the satellites of the planets Mars, Saturn, Uranus, and Neptune, and has also made some determinations of stellar parallax. Good progress has been made in reducing the observations of these satellites made in preceding years, and it is proposed to continue it steadily until all the observations have been completely reduced and the final results obtained. With the transit circle Prof. Eastman has continued the observations upon the sun, moon, and planets, as made in previous years. The old equatorial, in charge of Commander Sampson, has been employed principally in observing comets, small planets, and occultations. Time-signals are sent to various points in the United States as usual, and since Nov. 18, 1888, the noon-signal has been given corresponding to the seventy-fifth meridian west of Greenwich, or eight minutes twelve seconds before Washington noon. An appropriation for beginning work upon the proposed new observatory, for which a site was purchased three years ago, is again requested.

Physical Constitution of the Sun.—In previous volumes of this "Cyclopedia" mention has been made of Prof. Langley's researches upon the sun's heat. These researches mark an epoch in the history of the subject, from the facts that those made on Mount Whitney were made under conditions more favorable than any which have hitherto been obtained, that they were made with a newly invented instrument of extraordinary sensitiveness (the bolometer), and that the law of absorption in the atmosphere was taken into account more accurately than by previous investigators. Beginning with questions of atmospheric absorption, Prof. Langley remarks that in all previous investigations of the subject it has been assumed that every successive layer of atmosphere through which the solar rays passed absorbed a quantity of solar heat proportional to its density and the length of the path of light through it. He showed that, although this law was true of light of any one color, it was not true when the whole light and heat of every color or wave-length was measured. To show the principle involved let us suppose light of two colors, red and blue, to come from the sun to our atmosphere. Let us also imagine that the atmosphere exerts a very powerful absorption on the blue light, but suffers the red light to pass freely. Then a large quantity of blue light will be absorbed in the upper regions of the air, thus leaving very little of that color to reach the lower levels. The result will be that a small proportion of the total light will be absorbed at the lower levels, because nearly all the blue light having already been absorbed, there will be none of that color left to be absorbed, while the red light passes freely in any case. Now, since observations can only be made at the lower strata near the earth, it follows that the rate of absorption in these strata will be less than in the higher strata. Consequently, the allowance for absorption will be too small, and the quantity of heat emitted by the sun, as calculated from observation at the earth's surface, will likewise be too small. If the difference of the rates of absorption depended only upon the red and blue, as we have supposed, the problem would be easy of solution; in fact, however, the light which is most absorbed is scattered all through the spectrum, as is shown by the dark lines, and it thus becomes impossible to make an accurate calculation. Prof. Langley, however, found that from the best estimate that he could make it was probable that 40 per cent. of the total amount of heat radiated by the sun toward the earth was absorbed in the closest atmosphere. By measuring the quantity of heat which actually reached his instrument, and allowing for the absorption, he reached the following conclusion:

Let a plane surface measuring one square centimeter be exposed perpendicularly to the sun's heat at the mean distance of the earth from the sun; and let the absorbing atmosphere be entirely removed. Then the quantity of heat which will fall on that surface will be such as will raise the temperature of one gramme of water at the rate of nearly 3° centigrade per minute. This result is considerably greater than that obtained by previous experimenters who observed under less favorable conditions and did not properly allow for absorption.

In connection with these researches Prof. Langley has also investigated the heat spectrum of the sun far below the ordinary visible spectrum, and found in it a great number of lines produced by the absorption of the sun's atmosphere or that of the earth. Respecting the apparatus with which these determinations were made, Prof. Langley remarks that although its results are better than those generally obtained in heat measures, it is necessarily inferior to the eye, and that its use may possibly at some future time be superseded by photography. The general result may be summed up as follows: Besides the light-waves that can be perceived by the eye, the sun sends out heat-waves, which differ from the light-waves in nothing except being of greater length and therefore imperceptible to the eye. This has been long known, but Prof. Langley, by inventing a species of artificial eye, as embodied in the bolometer, has been enabled to investigate these obscure rays and measure their wave-length to a higher degree of accuracy than had before been attained. He concludes that this dark spectrum is far longer than was supposed,
Astronomical Phenomena and Progress.

No exact limit can be set to it; but he adds it to about twice the wave-length known, and believes that beyond heat can scarcely pass through the earth at all, and therefore is nearly all before it can reach any human eye.

Frolich, of Berlin, has devised apparatus purpose of comparing the solar heat to day with that radiated from a box blackened with smoke and kept so steam. His regular measures were near Berlin, but he also made ob- ses on the Faulhorn at the height of 500 feet from his data Dr. Frolich found solar heat diminished when the spots are numerous, while the higher grades of heat were attended with fewer sun his result, although suspected by others, has not, however, been proved.

Maximum of Solar Spots.—The last epoch set sun-spots which has been invested, according to Dr. Wolf, about of the year 1870. From various ob- maxima Dr. Wolf fixed the period at 22 years; this would bring the next computed s at the beginning of 1882. It appears, that this maximum has been delayed 2 even two years, as it was not until middle of 1884 that the diminution of was so well marked as to show that much hail actually passed. It is notice this epoch has not been marked by the displays of such brilliancy as have some observed. The maximum of 1860 t remarkable in this respect. It has been supposed that brilliant auroras are a part of the sun-spot maximum; if so, the year 1884 may be expected t of brilliant auroras.

Parallax and Velocity of Light.—No impor-ations have been made to published us on the subject of the solar parallax; minations of the velocity of light and tant of aberration have been made omise to give a more accurate value portant constant than any that can be direct measurement. The new deter- of the velocity of light, made first A. A. Michelson, and then by Prof. S. b, agree in giving a velocity of light from 299,860 kilometers per second.

The combination of this result with the above velocity of light gives 8.794" as the solar parallax, a result in good agreement with the best recent measures. The corresponding distance of the sun may be stated in round numbers as 98,000,000 miles, which we are now entitled to regard as the most probable result, and which is not likely to be altered by much more than 100,000 miles by any future discovery. The fluctuations in the adopted value of this distance have been very remarkable. From 1825 to 1855 the distance 95,000,000 miles, found by Encke, was received with a degree of confidence entirely unwar- ranted by the character of the observations on which it depended. When it was found to be in error by a larger amount than was expected, it was rejected without due examination, and from various observations made about 1880 the distance was supposed to be about 91,000,000.

Reduction of the Transit of Venus Observations of 1882.—Although the observations of the last transit of Venus succeeded much better than those of 1874, no definite information is yet available respecting the progress of the reduc- tions in foreign countries. In the United States the work of the commission has been directed principally to the measurement of the photograph- and an examination of the instruments with which the photographs were taken. The measurements of the photographic plates have been completed under the direction of Prof. W. Harkness, U. S. N., and a careful investigation of the action of the photo-heliograph under the influence of the sun's rays is now in progress. It is found that the reflectors change their fig- ure under the influence of the sun's rays by an amount which is very appreciable when the most delicate measures are employed. The following table shows the various stations at which photographs were taken according to the plan devised by the American commission, and the number which are available at each:

<table>
<thead>
<tr>
<th>Station</th>
<th>Number Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Washington, D. C.</td>
<td>59</td>
</tr>
<tr>
<td>At Cedar Keys, Fla.</td>
<td>145</td>
</tr>
<tr>
<td>At San Antonio, Tex.</td>
<td>121</td>
</tr>
<tr>
<td>At Cerro Robleto, New Mexico</td>
<td>218</td>
</tr>
<tr>
<td>At Princeton, N. J.</td>
<td>128</td>
</tr>
<tr>
<td>At Eck Observatory, Cal.</td>
<td>180</td>
</tr>
<tr>
<td>At New Haven, Conn.</td>
<td>66</td>
</tr>
</tbody>
</table>

Total for northern hemisphere: 959

<table>
<thead>
<tr>
<th>Station</th>
<th>Number Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Wellington, South Africa</td>
<td>190</td>
</tr>
<tr>
<td>At Santa Cruz, Patagonia</td>
<td>211</td>
</tr>
<tr>
<td>At Santiago de Chile</td>
<td>197</td>
</tr>
<tr>
<td>At Auckland, New Zealand</td>
<td>51</td>
</tr>
</tbody>
</table>

Total for southern hemisphere: 699

The laborious work of carrying through all the calculations growing out of these measures is not yet commenced, and will probably re- quire several years for its completion.

Visibility of the Satellites of Mars.—In 1877, when the satellites of Mars were discovered, they were supposed to be such difficult objects that
they would be entirely invisible except when Mars was near perihelion. They have, however, been well observed at every opposition since their discovery, including that of 1884. It is now expected that in the most powerful telescopes they will be visible even in the least favorable oppositions, including those of 1886 and 1888.

The Planet Jupiter.—It has for some time been suspected that the planet Jupiter bore a remarkable resemblance to the sun, in that its equatorial regions rotated in less time than those nearer the poles. This view seems to have been entirely confirmed by observations upon the remarkable red spot which was visible from 1879 until 1888. This spot was in the middle latitude, and from its motion the following periods of rotation of the planet on its axis were obtained by Denning, of England:

<table>
<thead>
<tr>
<th>TABLE I.</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERVAL</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>1880, Sept. 27—1881, March 17</td>
</tr>
<tr>
<td>1881, July 1—1882, March 80</td>
</tr>
<tr>
<td>1880, July 22—1880, May 6</td>
</tr>
<tr>
<td>1883, Aug. 28—1883, Dec. 5</td>
</tr>
</tbody>
</table>

From a white spot near the equator the following times of rotation were obtained:

<table>
<thead>
<tr>
<th>TABLE II.</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTERVAL</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>1880, Oct. 20—1881, Sept. 50</td>
</tr>
<tr>
<td>1881, Sept. 20—1882, Dec. 30</td>
</tr>
<tr>
<td>1887, Dec. 28—1888, Nov. 65</td>
</tr>
</tbody>
</table>

It thus appears that there is a difference of more than five minutes between the period of rotation at the equator and in the latitude of the spot. This result is of great interest, and shows that the great analogy in the motions of the planets and the sun. No satisfactory explanation of this more rapid rotation at the equator has yet been found. Since the distance which the equatorial regions of the planet must travel in order to make one complete revolution is greater at the equator than anywhere else, the time of its revolution should, it might be supposed, be greater, instead of less, as we actually find it.

Saturn and its Satellites.—Important and interesting researches on the Saturnian system have been made by Prof. Asaph Hall with the great Washington telescope. One of these researches has led to a more certain value of the mass of Saturn than any before attained. The mean distance of the outer satellite was found from the observations of 1875, 1876, and 1877, which give the following separate values of this element, when seen from a point distant 958665 astronomical units:

1875 = 515.494" ± 0.006" ... 57 observations.
1876 = 515.494" ± 0.006" ... 40 "
1877 = 515.497" ± 0.008" ... 81 "

Mean = 515.495" ± 0.007"

By comparing the observations of Sir William Herschel in 1789, one by Sir John Herschel at the Cape of Good Hope in 1837, and his own observations, Prof. Hall found the sidereal revolution to be performed in 79-331032 days. From these results, the mass of Saturn comes out to be 97.8 times that of the sun. This mass is one half per cent. greater than that of Bessel, and more than one per cent. greater than that found by Leverrier. It agrees, however, with other determinations from the motions of the satellites, and especially with the conclusion of Dr. Meyer described in the "Annual Cyclopaedia" for 1883. The other researches refer to the motion of Hyperion, the minute satellite discovered by Bond in 1848, the orbit of which is next within that of Titan. Some years ago Prof. Hall showed that the line of apsides of the orbit of this satellite was revolving in a retrograde direction. This was apparently in contradistinction to the received results of gravitation, since, the secular variation should be from west to east. But in a paper published by the Royal Astronomical Society in May last, it was shown by the comparison of all the observations since 1839 that there could be no doubt of this seemingly anomalous motion. This unexpected result led Prof. Newcomb to investigate the subject, and he found that the motion was due to the fact that three times the period of revolution of Hyperion was very nearly equal to four times that of Titan, the largest of the satellites, which lay next within the orbit of Hyperion. The correspondence was not perfectly exact, and the result of its not being exact was that the line of apsides was dragged around as it were by Titan, in such a way that all conjunctions of the two satellites take place at or near the point where Hyperion was farthest from Saturn. Thus there exists a third case of a relation among motions in the solar system. Those previously known were the rotation of the moon on its axis, which we know to correspond exactly to its time of revolution around the earth, so that the same face is always presented to us, and the relation among the satellites of Jupiter which prevents their ever being in conjunction at the same time.

In the spring of 1885 the ring of Saturn reaches its greatest inclination to the line of sight of an observer on the earth. The winters of 1885, 1886, and 1888 are, therefore, the most favorable for studying the planet and its rings which astronomers will enjoy until another revolution is completed, which will not be until 1914. It is understood that, under favorable circumstances, Prof. Hall has succeeded in seeing the planet through the division in the ring, thus showing beyond doubt that the division is a real gap, and not merely a dark portion of the ring. So far as known, the observations made with the great Washington telescope do not confirm the view which has sometimes been expressed by astronomers, that the rings of Saturn change their aspect
to time. Observers have sometimes
the outer ring as broken up into a
concentric rings, thus giving rise to
that this ring was sometimes con-
considered sometimes divided up. A some-
defined shaded line, known as the
sion, is always seen under favorable
distantly near the outer edge of the outer
this appearance may have given rise
pressure of one or more divisions.
ity separation ever been seen between
ring and the inner edge of the bright
fact the latter seems to fade into the
insensible gradations of shade. On
hand Mr. Trouvelot, who was for-
warded to the Harvard College Ob-
but who has returned to Meudon,
presents himself very decidedly in
supposed changes. These changes
so consid-
erations of the brilliancy and color
ace of the rings.
anges, sometimes slow and some-
rapid, in the form of the shadow
he globe of the planet upon the

ter. The color of this belt is a Vandyke brown.
Several alternate belts, ranging from a creamy
tint to a very pale rose madder, are seen in mid-
dle latitudes, and terminate with the bluish-
white polar cap.

The Zone of Asteroids.—The discoveries of small
planets, which fell off so remarkably during
the years 1882 and 1883, were recommenced
with their old vigor in 1884, nine being dis-
covered during the latter year. This carries
the whole number now known up to 244.
The following table shows the discoveries of the
year:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Discoverer</th>
<th>Date, 1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>292</td>
<td>Honoria</td>
<td>Palis, at Vienna</td>
<td>April 26</td>
</tr>
<tr>
<td>297</td>
<td>Colentina</td>
<td>Palis, at Vienna</td>
<td>June 27</td>
</tr>
<tr>
<td>308</td>
<td>Hygeia</td>
<td>Knorre, at Berlin</td>
<td>July 1</td>
</tr>
<tr>
<td>309</td>
<td>Adonis</td>
<td>Palis, at Vienna</td>
<td>August 6</td>
</tr>
<tr>
<td>407</td>
<td>Vulpes</td>
<td>Bovely, at Marbeldes</td>
<td>August 27</td>
</tr>
<tr>
<td>414</td>
<td>Germania</td>
<td>Luther, at Halle</td>
<td>September 12</td>
</tr>
<tr>
<td>498</td>
<td>Etruria</td>
<td>Palis, at Vienna</td>
<td>September 29</td>
</tr>
<tr>
<td>424</td>
<td>Idus</td>
<td>Palis, at Vienna</td>
<td>September 29</td>
</tr>
<tr>
<td>446</td>
<td>Unnamed</td>
<td>Palis, at Vienna</td>
<td>October 14</td>
</tr>
</tbody>
</table>

Cometary Discoveries in 1884.—The first comet
discovered in 1884 is catalogued properly with
the comets of the preceding year, as it passed perihelion on Dec. 25, 1883. It was discovered
by Ross, an amateur observer at Externieck,
early near Melbourne, Australia, on Jan. 7, 1884, a
"faint nebulous object with an ill-defined, tail-
like projection." By January 18th, the tail had
reached a length of a degree and a half. The
comet was invisible in the northern hemisphere,
and was under observation at the southern ob-
servers for only about a month.
The first comet of 1884, in order of perihelion
passage, was that discovered by Brooks at Phelps, N. Y., on Sept. 1, 1883 (comet G, 1883).
As soon as sufficient observations were
taken to determine approximately the orbit, it
became evident that this was a return of the
comet originally discovered by Pons at Mar-
belle on July 20, 1812, one of a group of which Halley's comet is another member, hav-
ing a period of about seventy-five years, and an
aphelion a little beyond the orbit of Neptune.
As the second comet of this group to return to
perihelion, the comet was looked for with con-
siderable interest, and this interest was subse-
sequently increased when observations showed
the rapid changes suffered by the head in ap-
proaching the sun, and the curious fluctuations
in the brightness of the nucleus. From a star
of the eleventh or twelfth magnitude at the
time of discovery, it increased gradually in
brightness to the 7th magnitude on September 29,
and then suddenly decreased to the ninth
magnitude on September 29. A gradual in-
crease again took place till October 6, when it
was a second time noted at 7th magnitude, and
then, after another short period of decrease, a
final steady increase in brightness began about
the first of November, and continued until a
maximum of the second magnitude was reached,
ASTRONOMICAL PHENOMENA AND PROGRESS.

about the time of perihelion, in the latter part of January. From Nov. 27, 1888, to March 8, 1884, the comet was reported visible to the naked eye. The tail, which was detected about the first of December, attained a length of six by January 20, and then faded out gradually until it was invisible even in the telescope by February 26. The nucleus was observed as late as March 29, 1884. The spectroscopes gave the usual hydrocarbon spectrum of comets.

The second comet of 1884, in order of perihelion passage as well as of discovery, was found by Barnard, at Nashville, Tenn., July 16, 1884. It was a nebulous object, slightly condensed near the center, and, for a telescopic comet, quite bright. The orbit proved to be elliptical, with a period of about 53 years, perihelion occurring August 16. The elements bear a remarkably close resemblance to those of De Vico's comet of 1864 (1844 1), but the identity of the two objects is improbable. The comet, at no time prominent, was last reported visible about the end of October.

A new comet was discovered by Wolf, a student of astronomy at Heidelberg, on Sept. 17, 1884. It appears to belong to the group of the Faye-Moller comet (comet 1857 IV, and comet 1874 IV). There is no evidence of any previous appearance, though, if the period of 675 years assigned is correct, it would be visible from the earth at only about every third return. The comet shows a pretty well-defined, star-like nucleus surrounded by its nebulous envelope, but it has not developed a tail. Perihelion was passed Nov. 17, 1884. The fact that this comet was never observed before, although it is now moving in an orbit in which the time of revolution is less than seven years, led Dr. Krueger to investigate the question whether we had not another case of a comet taking a new orbit by the action of Jupiter. Tracing back the course of the comet, he found that about May 28, 1875, it must have passed very near to Jupiter, and might therefore have had its orbit entirely changed. Another astronomer has undertaken to compute the change produced in the orbit by this approach, and found that before 1875 it might have been moving in a much larger orbit. This result, however, entirely uncertain, owing to the want of exact knowledge of the time of revolution. All that can be said with confidence is that a great change was produced by the action of Jupiter. It will probably perform seven or nine revolutions in its present orbit without again approaching Jupiter, and may then again encounter that planet and be once more thrown into a new orbit.

A round, faint, nebulous object was found by Spitaler on the evening of May 26, 1884, while he was searching with the twenty-seven-inch refractor of the Vienna Observatory for comet 1858 III. Unfavorable weather prevented a re-examination of this part of the sky till June 17 and 18, and then the object no longer be seen; nor could it be found. It is still doubtful whether this expected comet of 1885 or not.

Pickering's Photometric Researches.—The application of the photometer to astronomical search has been a specialty of the Observatory since Prof. Pickering its director. The method of observing eclipses of Jupiter's satellites by the observer is likely to be a great improve accuracy upon the older eye-methods, as be expected to supersede them for all poses of accurate astronomy. The work of this class is the determination brilliancy of all the stars down to the magnitude visible at Cambridge by a meridian photometer. The latter instrument of Prof. Pickering's invention is so arranged that an image of the polar star always visible in the field of view, and as a standard of comparison. The instrument itself is mounted in an east-and-west box position. It has two objectives of the aperture and focal length. A prism in each refracts the light of a star, the one for the polar star, and the other for to be measured. The latter prism turned round the axis of the telescope, form an image of any star sufficiently shaped. The two pencils as they object-glass are each divided by a diaphragm, in such a way that one each is made to coincide. The result ingenious devices and precautions is, images of the two stars can be brought close juxtaposition, and by means of a ing apparatus the two images can be into exactly equal brilliancy. The observer occupied the four years, 1879 to 1882, for results, as published in Volume XV. "Harvard Observatory Annals," form the most available catalogue of the ness of stars now at the command of omers.

Astronomical Photography.—In Dr. Gill's graphs of the great comet of 1882, take Cape of Good Hope Observatory, it was that the stars down to the eighth at magnitude were clearly depicted on them. This fact suggested a new method of approximate catalogues of the fainter taking photographs of regions of the several degrees square, and afterward the position of the stars on them. The method has been tried at the College Observatory by Mr. W. H. Pi He had in view the construction of a graphic map of the whole heavens, determination of the light of the brightness He succeeded in obtaining maps of square, containing stars as faint as the magnitude. Should the method prove cessa, it is expected that catalogues of other stars can be made with far less lab etc.
Possible Influence of Comalial Dust.—The phenomena of meteors and shooting-stars show that matter is constantly falling upon the earth from space. But science has hitherto furnished no method of estimating the probable quantity of such matter. The dust collected upon the snow in the polar regions has sometimes been supposed to have originated in this way, but this theory is as yet entirely unproved. Dr. Oppolzer, of Vienna, has recently investigated the question whether the excess of the moon's apparent acceleration above its computed value may not arise from the mass of the earth being gradually increased in this way. By a very careful and somewhat abstruse mathematical calculation he finds that a precipitation of comalial dust amounting to 2½ millimetres in a century, over the whole earth's surface (or about a thousandth of an inch in a year), would completely account for the observed excess of the secular acceleration. The question whether a fall of this amount is possible has not yet been considered by geologists.

The Krakatoa Eruption, and the Red Skies.—The autumn of 1883 was remarkable for a succession of red skies of a very unusual kind, nearly everywhere in the world, but more especially in India and the Indian and Southern Pacific Oceans. As the sun approached the horizon, it was seen to assume a distinctly greenish aspect, and an unusual color seemed to pervade the western sky. As a rule, nothing very unusual was observed during the half-hour after sunset. About that time, however, an extraordinary red glow, as from a great fire, began to pervade the western sky, and in some instances actually led to the belief of a conflagration. The phenomenon was first noticed in India, and gradually spread around the whole world. The theory that found most credence among astronomers was that it proceeded from volcanic dust and vapors thrown up at the great eruption of Krakatoa near the end of August, 1883. (See Meteorology, in "Annual Cyclopaedia" for 1888, page 525.) It was found that the color of the red sky around the world followed closely the course that such vapors might be expected to take, from being wafted from place to place by the winds. Additional interest was given to this view by the discovery that self-registering records of barometric pressure, in various points of Europe, showed that an atmospheric wave from the same eruption was carried around the earth.

Stellar Parallax.—An important addition has been made at the Cape Observatory to our knowledge of stellar parallax by Drs. Gill and Eskin, working in concert, the latter being the guest of the former at the Cape Observatory. The instrument employed was the fine heliometer made for Lord Lindsay, for the observations of the transit of Venus in 1874. This instrument was purchased by Dr. Gill individually and was brought into use at the Cape in 1880. The following results were communicated to the Royal Astronomical Society in 1884:

<table>
<thead>
<tr>
<th>Parallax</th>
<th>Probable error</th>
</tr>
</thead>
<tbody>
<tr>
<td>+0.04</td>
<td>±0.01</td>
</tr>
<tr>
<td>+0.00</td>
<td>±0.06</td>
</tr>
<tr>
<td>+0.00</td>
<td>±0.09</td>
</tr>
<tr>
<td>+0.01</td>
<td>±0.09</td>
</tr>
<tr>
<td>+0.05</td>
<td>±0.08</td>
</tr>
<tr>
<td>+0.11</td>
<td>±0.03</td>
</tr>
<tr>
<td>+0.14</td>
<td>±0.09</td>
</tr>
<tr>
<td>+0.00</td>
<td>±0.06</td>
</tr>
<tr>
<td>+0.00</td>
<td>±0.09</td>
</tr>
</tbody>
</table>

The most interesting of these results are the first two. The nearest fixed star, so far as we know, is a Centauri, but its distance is shown to be a third greater than was formerly supposed. The actual distance from the above parallax is 276,000 times the distance of the sun, a space which light would require four years four months to traverse. Sirius, though the brightest fixed star in the heavens, is shown to be more distant than several others of the fourth, fifth, or sixth magnitude, and must be regarded as emitting some fifty times as much light as our sun. But the case of the Centauri, a star of almost the first magnitude, is yet more remarkable. Its small negative parallax is impossible, and only shows that its distance is so great as to elude even the refined measurements of Dr. Gill. It can hardly be less than eight or ten times the distance of Sirius, and its absolute brightness must be several times that of Sirius.

Parallax of a Tauri.—It does not appear that any attempt has ever been made to measure the parallax of a Tauri, its proper motion being so small that the parallax has been supposed very minute. In preparing his measurements of double stars for the press, Otto Struve, director of the Pulkowa Observatory, noticed that they were very favorable for a determination of parallax, and proposed to one of his assistants to investigate the subject. The observations were very accordant in showing a parallax of 0.516". This result, if confirmed, will place a Tauri among the three or four nearest of the fixed stars.

Motion of Stars in the Line of Sight.—The spectroscopic determination of the motion of stars in the line of sight, which was inaugurated by Mr. William Huggins, is still continued at the Greenwich Observatory. One result of recent observations is quite inexcusable. The earlier determinations of the motions of Sirus, both by Mr. Huggins and the Greenwich observers, were accordant in showing that Sirus was receding from our system at the rate of some twenty-five miles per second. But, according to the recent measures, this motion has entirely ceased, many observations even showing that the star is approaching us. The reality of such a change in the motion must be considered inadmissible.

The Companion of Sirus.—The discovery of this companion is memorable as having been made by Alvan Clark, Jr., in 1862, with the object-glass of the great telescope which had been constructed for Chicago, and as lying exactly in
the direction in which the motion of Sirius for
a hundred years past had shown that some re-
volving satellite must be found. It was there-
fore a case in which the direction of the body
had been indicated by its attraction upon an-
other body, before its existence had become
known. For a few years observations showed
that the motion of the satellite around its pri-
mary was more rapid than that which had been
indicated by theory, the difference in two direc-
tions amounting to nearly 10°. But the observa-
vations made by Prof. Hall and other observ-
eres in 1884 showed that the satellite is now rapid-
ly approaching the planet, and that its position
is coming more and more into agreement with
the old calculations. In a very few years it
will be so close to Sirius that it is questionable
whether even the most powerful telescope will
be able to distinguish it. According to Dr.
Anning, the nearest approach will take place
in the year 1891.

The International Meridian Conference.—Among
the many events of the year pertaining to as-
tromony we must include the work of the In-
ternational Conference that met in Washington
during the month of October, 1884, for the
purpose of deciding upon a common prime
meridian and a common system of time to be
used by all nations. The bill authorizing the
President to invite the Conference became a
law in the year 1882. Before issuing a formal
invitation, it was judged best to inquire in
advance whether foreign nations were ready
to enter upon the discussion of the question.
These preliminary inquiries showed that some
governments were ready to receive proposals
favorably, while others delayed an answer,
waiting a preliminary discussion of the subject
by the International Geodetic Association of
Europe. This body met at Rome in October,
1883. Besides the regular members of the
association, the Astronomer Royal of England
and a delegate from the Coast Survey of the
United States were present. The association,
after considerable discussion, adopted the fol-
lowing conclusions bearing upon the subject,
the preliminary remarks being omitted:

II. That the Conference proposes to the Government
to choose for the initial meridian that of Greenwich,
inasmuch as that meridian fulfills, as a point of de-
parture of longitudes, all the conditions required by
science; and that, being already actually the most ex-
tensively used of all, it presents the greater probability
of being generally accepted.

III. That the longitudes should be reckoned from
the meridian of Greenwich in the sole direction from
east to west, and from zero to 360°, or from zero to
twenty-four hours; the meridians on the charts and
the longitudes in the registers should be indicated
everywhere in hours and minutes of time, with liberty
of adding the indication of the corresponding degree.

IV. That the Conference recognizes for certain
scientific needs, and for the service of the great ad-
ministrations of the means of communication, such as
railways, steamship lines, telegraphs, and posts, the
utility of adopting a universal hour, side by side with
the local or national hours, which will necessarily con-
tinue to be employed in civil life.

V. That the Conference recommends, as the point
of departure of the universal hour and of cosmopolitan
dates, the mean noon of Greenwich, which coincides
with the instant of midnight or with the beginning
of the civil day, situated at the twelfth hour, or at 12°
Greenwich. It follows that the universal time will
correspond everywhere with the mean local time,
reckoned from midnight, less twelve hours and the
longitude of the place, and that the dates change at
the antipodes of Greenwich.

VI. That it is desirable that those states which, in
order to adhere to the unification of longitudes and of
hours, will have to change their meridians, should
adopt the new system of longitudes as quickly as pos-
sible in their observatories and official almanacs, in
their geodetical, topographical, and hydrographical works,
and in their new charts. As a means of transition it
would be well that in new editions of old charts, on
which it would be difficult to change the squares, the
indications according to the new system should at
least be inscribed alongside the enumeration of the
old meridians.

VII. That these resolutions should be laid before
the governments and recommended to their friendly
consideration with the expression of a hope that an
International Convention, confirming the unification
of longitudes and of hours, may be concluded as quickly
as possible by a special conference.

These conclusions of the Roman Conference
indicated that an agreement upon the subject
was possible. The formal invitation from our
Government was therefore sent in the month
of December, 1883, to all nations with which it
was in diplomatic communication. The
date fixed for the Conference was October 1,
1884. Each nation was requested to send not
more than three conferences, but this number was
afterward increased to five. For the most part
the foreign nations were represented by their
diplomatic envoys resident in Washington, but
England, France, and Russia, as well as Brazil,
and a few other states, sent one or more special
conferences. The Conference met at the ap-
pointed time, in the Department of State at
Washington, and Rear-Admiral C. R. P. Rod-
gers, the senior member of the American dele-
gation, was chosen president. The point which
was most warmly discussed was whether the
universal prime meridian to be adopted should
be that of Greenwich. The most vigorous op-
position came from representatives, whose
spokesman was M. Jansen, the emi-
terrestrial astronomer of the Institute of France.
This gentleman took the ground that, to be
entirely acceptable to all, the prime meridian
should not be fixed with reference to the capi-
tal of any one nation, but should be entirely
"a neutral meridian," chosen solely with refer-
ce to geographical considerations. He main-
tained that a meridian passing through Behring
Strait would fulfill the requirements better than
any other. When, after a prolonged dis-
cussion, extending through several sessions, the
question was finally put to vote, the meridian of
Greenwich was adopted, with the single dis-
counting vote of San Domingo, the representa-
tives of France and Brazil refraining from
voting.

The next important subject considered by
the Conference was that of a system of uni-
versal time to be used for all purposes where
it should be found convenient. The following
prolonged discussion upon the relative advantages of different systems of counting time. The final conclusion was in favor of the civil day at Greenwich as the universal day. The conclusions of the Conference were finally formulated as follows:

I. That it is the opinion of this Congress that it is desirable to adopt a single prime meridian for all nations, in place of the multitude of initial meridians which now exist.

II. That the Conference proposes to the Governments here represented the adoption of the meridian passing through the center of the transit instrument at the Observatory of Greenwich as the initial meridian for longitude.

III. That from this meridian longitude shall be counted in two directions up to 180° east longitude being plus, and west longitude being minus.

IV. That the Conference proposes the adoption of a universal day for all purposes for which it may be found convenient, and which shall not interfere with the use of local or other standard time where desirable.

V. That this universal day is to be a mean solar day; to begin for all the world at the moment of mean midnight of the initial meridian, coinciding with the beginning of the civil day and date of that meridian; and to be counted from zero up to twenty-four hours.

VI. That the Conference expresses the hope that as soon as may be practical the astronomical and nautical days will be arranged everywhere to begin at mean midnight.

VII. That the Conference expresses the hope that the technical studies designed to regulate and extend the application of the decimal system to the division of angular space and of time shall be resumed, so as to the completion of this application to all cases in which it presents real advantages.

It is expected that the main conclusions which relate to a universal meridian and a common system of time will meet with universal acceptance. The minor points on which the Conference made its recommendations may have to receive further consideration by those specially concerned, as well as by the public at large. The question of changing the astronomical days from midnight since the commencement of modern astronomy, is now being considered by astronomers whose opinions are not yet in accord on the subject. It was proposed at the Greenwich and Washington Observatories to introduce the change immediately; a decision has, however, been postponed, to await a common agreement among the astronomers of the world, which it is expected will be reached during the present year.

International Communication of Astronomical Discoveries.—All important astronomical discoveries made in Europe or America are now immediately communicated by telegraph to the leading observatories of the world. The credit for devising the system on which this is done is largely due to two amateur astronomers of Boston, Messrs. Ricehe and Chandler. It consists in the use of a dictionary cipher. When a telegram of 500 words and minutes have to be sent, the sender finds the page of Webster's Dictionary corresponding to the number of degrees, and then selects a word corresponding to the number of minutes, which he telegraphs. By this system the sending of seven words gives the astronomer all necessary information respecting the observations and elements of a comet or planet, and at the same time enables him to detect any accidental mistake in transmitting the message. The central bureaus for receiving and transmitting the messages are Cambridge, Mass., and Kiel, Germany.

Astronomical Prizes.—Two important prizes for astronomical research are hereafter to be awarded by the National Academy of Sciences. One of these prizes was founded by the bequest of the late Prof. James C. Watson, of Ann Arbor, Mich., who died in 1880. Owing to the long delay in settling his estate, and designing the medal, the latter has not yet been awarded. The provisions of the bequest permit of the award of a medal biennially, and allow the surplus income from the endowment to be employed in astronomical research. The other medal was founded by Mrs. Draper, widow of Prof. Henry Draper, of New York, in honor of her husband, who was a distinguished member of the Academy. This medal is to be awarded for researches in physical astronomy, the branch which Dr. Draper cultivated with such success.

AUSTRALIA AND NEW ZEALAND. The British colonies of Australia, with New Zealand and the Fiji Islands, have an area of 3,083,440 square miles, and a population of 3,083,656. The area and the population at the end of 1881 are shown in the following table:

<table>
<thead>
<tr>
<th>COLONIES</th>
<th>Square miles</th>
<th>Male.</th>
<th>Female.</th>
<th>Total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>880,175</td>
<td>822,289</td>
<td>57,971</td>
<td>880,175</td>
</tr>
<tr>
<td>Victoria</td>
<td>67,714</td>
<td>64,872</td>
<td>2,842</td>
<td>67,714</td>
</tr>
<tr>
<td>Queensland</td>
<td>666,174</td>
<td>609,924</td>
<td>56,252</td>
<td>666,174</td>
</tr>
<tr>
<td>South Australia</td>
<td>819,915</td>
<td>792,895</td>
<td>27,020</td>
<td>819,915</td>
</tr>
<tr>
<td>Northern Territory</td>
<td>593,500</td>
<td>581,200</td>
<td>12,300</td>
<td>593,500</td>
</tr>
<tr>
<td>Western Australia</td>
<td>973,070</td>
<td>946,928</td>
<td>26,142</td>
<td>973,070</td>
</tr>
<tr>
<td>Tasmania</td>
<td>309,000</td>
<td>299,966</td>
<td>9,034</td>
<td>309,000</td>
</tr>
<tr>
<td>New Zealand</td>
<td>80,844</td>
<td>70,346</td>
<td>10,498</td>
<td>80,844</td>
</tr>
<tr>
<td>Fiji Islands</td>
<td>27,464</td>
<td>25,093</td>
<td>2,371</td>
<td>27,464</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>3,083,440</strong></td>
<td><strong>2,881,280</strong></td>
<td><strong>202,168</strong></td>
<td><strong>3,083,440</strong></td>
</tr>
</tbody>
</table>

The population, according to the census of April 5th, of those colonies that have made returns, was divided in respect of nativity as follows:

<table>
<thead>
<tr>
<th>COLONIES</th>
<th>Born in</th>
<th></th>
<th></th>
<th>Total population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Australia</td>
<td>Great Britain</td>
<td>Germany</td>
<td>China</td>
</tr>
<tr>
<td>Victoria</td>
<td>580,060</td>
<td>582,399</td>
<td>8,571</td>
<td>11,799</td>
</tr>
<tr>
<td>Queensland</td>
<td>106,910</td>
<td>106,514</td>
<td>3,404</td>
<td>11,258</td>
</tr>
<tr>
<td>South Australia</td>
<td>292,037</td>
<td>292,540</td>
<td>7,599</td>
<td>27,103</td>
</tr>
<tr>
<td>Tasmania</td>
<td>68,978</td>
<td>72,948</td>
<td>748</td>
<td>11,705</td>
</tr>
<tr>
<td>New Zealand</td>
<td>293,464</td>
<td>321,240</td>
<td>4,210</td>
<td>5,082</td>
</tr>
</tbody>
</table>

The number of aborigines in New South Wales was 1,648; in Victoria, 780. In Queensland the black population was estimated at 20,585. In South Australia the number in the settled districts was 3,846. In Western Australia there were 2,346 in the employ of colo-
nista. The Maori population of New Zealand was 44,097. The population of Victoria, Queensland, and New Zealand was divided in respect of religion as follows:

<table>
<thead>
<tr>
<th>CREEDS</th>
<th>Victoria</th>
<th>Queensland</th>
<th>New Zealand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protestants</td>
<td>615,859</td>
<td>199,800</td>
<td>427,767</td>
</tr>
<tr>
<td>Roman Catholics</td>
<td>286,480</td>
<td>84,976</td>
<td>60,954</td>
</tr>
<tr>
<td>Israelites</td>
<td>4,890</td>
<td>457</td>
<td>1,589</td>
</tr>
<tr>
<td>Pagans and Mohammedans</td>
<td>11,158</td>
<td>16,571</td>
<td>4,928</td>
</tr>
<tr>
<td>Not reported</td>
<td>39,950</td>
<td>2,640</td>
<td>28,710</td>
</tr>
<tr>
<td>Total population</td>
<td>968,846</td>
<td>218,565</td>
<td>469,283</td>
</tr>
</tbody>
</table>

The movement of population in 1881 was as follows in the different colonies:

<table>
<thead>
<tr>
<th>COLONIES</th>
<th>Marriages</th>
<th>Births</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>5,294</td>
<td>28,900</td>
<td>11,568</td>
</tr>
<tr>
<td>Victoria</td>
<td>6,266</td>
<td>27,140</td>
<td>13,329</td>
</tr>
<tr>
<td>Queensland</td>
<td>1,768</td>
<td>8,270</td>
<td>8,820</td>
</tr>
<tr>
<td>South Australia</td>
<td>2,809</td>
<td>10,100</td>
<td>9,188</td>
</tr>
<tr>
<td>Western Australia</td>
<td>197</td>
<td>1,000</td>
<td>419</td>
</tr>
<tr>
<td>Tasmania</td>
<td>856</td>
<td>8,919</td>
<td>1,288</td>
</tr>
<tr>
<td>New Zealand</td>
<td>8,351</td>
<td>18,789</td>
<td>5,491</td>
</tr>
<tr>
<td>Total</td>
<td>39,336</td>
<td>92,731</td>
<td>83,006</td>
</tr>
</tbody>
</table>

The following table shows the immigration movement in 1881:

<table>
<thead>
<tr>
<th>COLONIES</th>
<th>Immigration</th>
<th>Emigration</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>45,970</td>
<td>6,624</td>
</tr>
<tr>
<td>Victoria</td>
<td>35,455</td>
<td>4,720</td>
</tr>
<tr>
<td>Queensland</td>
<td>18,200</td>
<td>4,740</td>
</tr>
<tr>
<td>South Australia</td>
<td>14,704</td>
<td>6,049</td>
</tr>
<tr>
<td>Western Australia</td>
<td>774</td>
<td>1,027</td>
</tr>
<tr>
<td>Tasmania</td>
<td>10,411</td>
<td>9,453</td>
</tr>
<tr>
<td>New Zealand</td>
<td>12,954</td>
<td>2,068</td>
</tr>
<tr>
<td>Total</td>
<td>157,128</td>
<td>155,963</td>
</tr>
</tbody>
</table>

The following cities, contained, with their suburbs, more than 20,000 inhabitants in 1881:

<table>
<thead>
<tr>
<th>CITIES</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melbourne</td>
<td>99,947</td>
</tr>
<tr>
<td>Sydney</td>
<td>224,211</td>
</tr>
<tr>
<td>Dunedin</td>
<td>45,794</td>
</tr>
<tr>
<td>Adelaide</td>
<td>134,479</td>
</tr>
<tr>
<td>Ballarat</td>
<td>87,259</td>
</tr>
<tr>
<td>Brisbane</td>
<td>111,558</td>
</tr>
<tr>
<td>Auckland</td>
<td>80,059</td>
</tr>
<tr>
<td>Christchurch</td>
<td>80,715</td>
</tr>
<tr>
<td>Sandhurst</td>
<td>24,158</td>
</tr>
<tr>
<td>Hobart</td>
<td>21,118</td>
</tr>
<tr>
<td>Wellington</td>
<td>29,058</td>
</tr>
</tbody>
</table>

Commerce.—The values of the total imports and exports in 1881, and of the portion of Great Britain in the trade, were as follow:

<table>
<thead>
<tr>
<th>COLONIES</th>
<th>Total imports</th>
<th>Imports from England</th>
<th>Total exports</th>
<th>Exports to England</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>17,490,000</td>
<td>5,597,000</td>
<td>7,581,000</td>
<td>17,490,000</td>
</tr>
<tr>
<td>Victoria</td>
<td>16,719,000</td>
<td>7,318,000</td>
<td>17,744,000</td>
<td>16,719,000</td>
</tr>
<tr>
<td>Queensland</td>
<td>5,604,000</td>
<td>4,077,000</td>
<td>7,546,000</td>
<td>5,604,000</td>
</tr>
<tr>
<td>South Australia</td>
<td>5,234,000</td>
<td>2,819,000</td>
<td>7,595,000</td>
<td>5,234,000</td>
</tr>
<tr>
<td>Western Australia</td>
<td>465,000</td>
<td>150,000</td>
<td>500,000</td>
<td>465,000</td>
</tr>
<tr>
<td>Tasmania</td>
<td>1,481,000</td>
<td>840,000</td>
<td>1,508,000</td>
<td>1,481,000</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1,617,000</td>
<td>4,380,000</td>
<td>5,051,000</td>
<td>1,617,000</td>
</tr>
<tr>
<td>Total, 1881</td>
<td>56,769,000</td>
<td>25,681,000</td>
<td>54,565,000</td>
<td>56,769,000</td>
</tr>
<tr>
<td>Total, 1880</td>
<td>43,490,000</td>
<td>20,177,000</td>
<td>40,565,000</td>
<td>43,490,000</td>
</tr>
</tbody>
</table>

The exports of the precious metals and of wool, in 1881, were of the following amounts:

<table>
<thead>
<tr>
<th>COLONIES</th>
<th>Precious metals</th>
<th>Wool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>£1,950,000</td>
<td>£7,581,000</td>
</tr>
<tr>
<td>Victoria</td>
<td>4,774,000</td>
<td>1,385,000</td>
</tr>
<tr>
<td>Queensland</td>
<td>980,000</td>
<td>1,013,000</td>
</tr>
<tr>
<td>South Australia</td>
<td>66,000</td>
<td>1,028,000</td>
</tr>
<tr>
<td>Tasmania</td>
<td>1,147,000</td>
<td>2,914,000</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1,167,000</td>
<td>2,914,000</td>
</tr>
<tr>
<td>Total, 1881</td>
<td>£9,189,000</td>
<td>£21,687,000</td>
</tr>
<tr>
<td>Total, 1880</td>
<td>7,386,000</td>
<td>20,018,000</td>
</tr>
</tbody>
</table>

Railroads and Telegraphs.—The mileage of rail ways completed and under construction in 1881, in the several colonies, was as follows:

<table>
<thead>
<tr>
<th>COLONIES</th>
<th>Open to traffic</th>
<th>Under construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>965</td>
<td>578</td>
</tr>
<tr>
<td>Victoria</td>
<td>1,647</td>
<td>138</td>
</tr>
<tr>
<td>Queensland</td>
<td>890</td>
<td>141</td>
</tr>
<tr>
<td>South Australia</td>
<td>991</td>
<td>90</td>
</tr>
<tr>
<td>Western Australia</td>
<td>211</td>
<td>17</td>
</tr>
<tr>
<td>Tasmania</td>
<td>117</td>
<td>111</td>
</tr>
<tr>
<td>New Zealand</td>
<td>1,967</td>
<td>171</td>
</tr>
<tr>
<td>Total</td>
<td>5,026</td>
<td>1,311</td>
</tr>
</tbody>
</table>

The telegraph mileage was as follows:

<table>
<thead>
<tr>
<th>COLONIES</th>
<th>Lines.</th>
<th>Hours.</th>
</tr>
</thead>
<tbody>
<tr>
<td>New South Wales</td>
<td>8,115</td>
<td>14,178</td>
</tr>
<tr>
<td>Victoria</td>
<td>8,050</td>
<td>6,836</td>
</tr>
<tr>
<td>Queensland</td>
<td>6,850</td>
<td>5,050</td>
</tr>
<tr>
<td>South Australia</td>
<td>4,577</td>
<td>2,977</td>
</tr>
<tr>
<td>Western Australia</td>
<td>1,505</td>
<td>1,268</td>
</tr>
<tr>
<td>Tasmania</td>
<td>925</td>
<td>1,157</td>
</tr>
<tr>
<td>New Zealand</td>
<td>8,284</td>
<td>9,685</td>
</tr>
<tr>
<td>Total</td>
<td>28,428</td>
<td>43,119</td>
</tr>
</tbody>
</table>

Confederation.—The Convention of Australian Governments, which met at Sydney in November, 1883, to consider the question of federative action in matters of common concern, adopted resolutions in favor (1) of the confederation of the colonies in an Australian Dominion; (2) of the annexation of Papua and other islands of the Western Pacific; and (3) of combined protective legislation against criminal aliens. The scheme of federation approved by the delegates, with a dissenting voice, is to create a Federal Council, which shall meet at Hobart, Tasmania; once every two years to take cognizance of questions concerning (1) the relations of Australia with the islands of Oceania, (3) the landing of criminals, (5) fisheries in Australia waters outside of the territorial limits of the colonies; with the prospect of extending it jurisdiction by later agreement to matters connected with quarantine, extradition, justice, currency, etc.

The subject was suffered to rest after the separation of the convention in the middle of December until the meeting of the Victoria Legislature in June. The Premier, who had been the most active promoter of the federative movement, obtained the almost unanimous ratification of the resolutions by both houses. The legislatures of Tasmania and Queensland, which had been waiting for the action of th
leading colonies, adopted addresses praying the British Government to introduce a bill to create a Federal Council. The other colonies adopted the resolutions during the summer, with the exception of New Zealand and New South Wales, where the proposal encountered general indifference and some degree of opposition. These colonies did not act until the beginning of the extraordinary session of the British Parliament. New Zealand, content with the security afforded by her isolated geographical position, and with her independent material progress, feared the expense involved in federation and possible encroachments on her legislative independence. New South Wales also feared that federation with the less progressive colonies would prove an incumbrance, and dreaded lest the British Government should propose the cession of the valuable Errine District to Victoria. The Government refused to bring the subject before the Assembly until the land bill was disposed of. At last, when the British Cabinet had an enabling act prepared, the Legislature of New South Wales approved in qualified terms the resolutions, and that of New Zealand also recorded its general approval.

Victoria was constituted a self-governing colony in 1854. The Legislative Council, of 86 members, is elective by a limited franchise, fixed by the law of 1881 at £10 annual rateable value of freehold property, or the occupancy of rented or leased property rated at £35 annual value for all except professional men. The term of the members, who must have property yielding £100 income, is nine years, one third retiring every three years. The members of the Legislative Assembly are elected for three years by universal suffrage. The Governor is Sir Henry Brougham Looe, formerly Governor of the Isle of Man, who succeeded the Marquis of Normanby in July, 1884. The Prime Minister is James Scitovsky.

The revenue for the year ending June 30, 1884, was £25,324,241, being £383,176 greater than in 1882-83. The railroad revenue increased, owing to the fine grain-crop, from £1,383,249 to £2,079,249. The customs receipts showed a falling off. The revenue for 1884-'85 is estimated at £6,498,878; the expenditure at £6,492,981. The London and Oriental Bank, which failed in 1884, held on deposit £439,994 of the colonial funds. A redemption loan of £5,500,000 is to be floated in 1885 to meet £3,150,000 of debentures, which fall due. An additional tax of two shillings per gallon on spirits was determined on in order to increase the revenue still further, and to satisfy the temperance sentiment of the community, and assimilate the system of taxation to that of New South Wales and the other colonies.

Reidivist Question.—The announcement of a bill by the French Government to provide for the transportation of recidivists, or criminals who have served sentences for former offenses, created excitement and alarm throughout the Australian colonies, and stimulated the movements in favor of confederation and the annexation of the islands of the Western Pacific. The plan of ridding France of her habitual criminals, by sending them to the colonies where the conditions are more favorable for reform, has been in contemplation for several years. It originated with Gambetta, after the hostile demonstration of his Belleville constituents, characterized by him at the time as criminals whom he would track to their lairs. The recidivist bill, introduced in 1884, applies to offenders that have been sentenced twice to penal servitude, or four times for such crimes as larceny, breach of trust, obtaining money under false pretenses, indecent conduct, etc., or six times for begging or vagabondage under suspicious circumstances, or for an equivalent combination of any of the three classes of offenses.

The agitation for diplomatic action and the representations to the home authorities in this sense were resented in France as an interference with her domestic legislation. The Australians objected to the use of New Caledonia at all as a convict settlement, and suggested its acquisition by Great Britain in exchange for the Falkland Islands. New Caledonia was not a penal colony until the transportation thither of 13,000 Communists. After their amnesty, other criminals who were considered suitable subjects for colonization were settled on the Government lands. The strict discipline of Admiral Courbet was followed in November, 1882, by the humanitarian mildness of Captain Paul de la Barrière, a governor who skilfully represents the sentimental laxity that marks recent French criminal legislation. The convicts are allowed almost as much freedom as the other colonists enjoy, and when they have obtained tickets-of-leave they can take up farms and bring out their families. If unmarried, they can select wives from among shipments of female delinquents in the French penal colonies, who volunteer to go out to New Caledonia to marry convicts. Most of these are immoral women. Three-year tickets-of-leave to reside abroad are granted to express on condition that they shall not return to France. Men of this class are sometimes landed in Australia from steamers; others escape in open boats. The criminal class in the English colonies has thus been augmented by some desperate ruffians and some very skilful burglars. New Caledonia has been the destination of French murderers for several years, and transportation thither was so attractive to French criminals that in 1890 an epidemic of murder broke out in the prisons, so that a law had to be passed excluding murders committed in prison from this form of punishment.

In January, 1884, the British Government protested against the sending of any more criminals to New Caledonia in view of the state of feeling existing in the colonies. M. Ferry
characterized the agitation as insincere, and prompted by annexation greed, and declared that the class of offenders deported to New Caledonia were not positive criminals, but promised to respect as far as reasonable the susceptibilities of the colonies. The English Government did not press for pledges that might offend French dignity and provoke the Legislature to more unfavorable action than would otherwise result. Later in the year the French Government announced that the number of recidivists to be dealt with under the contemplated act would not exceed 6,000 the first year, and would rapidly diminish in succeeding years. As the result of a parliamentary inquiry, it was decided that New Caledonia would not take more than one fifth of these, the remainder going to Cayenne. The French Government offered to make a more effectual extradition treaty to insure the return of escaped convicts to New Caledonia.

The colonists were dissatisfied at the want of vigor displayed by the Imperial Government. In 1840 the people of Victoria resisted by force the landing of English convicts at Melbourne, and threatened to collect a ship-load of the worst case and land them on the coast of Devonshire if the mother-country persisted in sending criminals to their colony. This menace was sufficient to put a stop to English transportation. It was now proposed to return escaped convicts from New Caledonia to France, and also to apply to French steamshipmasters a law making it punishable for British shipmasters to land criminals in Victoria, passed while Tasmania was still a penal settlement. Queensland, on whose shores escaped French convicts oftentimes land, took the lead by enacting a law of this character.

Legislature.—Two important bills of a financial nature engaged the attention of the Legislature during most of the session of 1884. Their object was to increase the revenue to meet the cost of railroad extensions partly from the resources of the colony and not swell inordinately the debt to foreign bondholders.

The land act introduced by the Government established the leasing system in Victoria. The public domain remaining unsold consisted of only 20,447,448 acres, classified as follows: - 1. Pasture lands, 8,800,180 acres; 2. Auriferous lands, 961,760 acres; 3. Agricultural and grazing lands, 8,719,000 acres; 4. Lands to be submitted to public auction, 833,330 acres; 5. State forests, timber, and other reserves, and water, 1,388,319 acres; 6. Swamp-lands, 29,880 acres. An act was passed in the session of 1883 to allow a class of inferior land known as the mallee scrub to be offered on pastoral leases. About 4,000,500 acres were occupied under this act, and the work of reclamation began. Under the new act the leasing system was extended to the lands classified as pasturable. The rental depends upon the number of head of stock pastured, and is fixed at the rate of 1s. per annum for each sheep and 5s. for every head of cattle. The leases for blocks of 2,000 and 4,000 acres for fourteen years are sold at public auction. The agricultural and grazing lands are leased in 1,000-acre blocks for fourteen years, at from 2d. to 4d. per acre. The auriferous lands are to be let for mining, and the swamp-lands leased in 160-acre holdings for reclamation.

The coalition ministry, which has a practically unanimous support, brought up the long-mooted question of mining royalties under better auspices than any previous government. The precious metals in the earth belong by common law to the Crown, but the Government has never asserted its rights except in demanding a license-fee from every digger. Neither has it waived them, like the American States, in favor of the discoverer. The miner is not entitled to claim and work a deposit that he has found, on payment of damages to the owner of the land, as in the United States. He is therefore obliged to make terms with the owner if the discoveries are made on private land. The land-owners are thus enabled practically to appropriate property rights that by law are the property of the Crown. They exact a percentage of the gross yield of the mines, of 5, 7½, 10, and sometimes 15 or 20 per cent., which they call a royalty. Without labor or risk they have in many cases received the lion's share of the profits. The wealthy Port Phillip and Clunes company has paid to the freeholders 29 per cent. of its total profits; other companies as much as 50 and 60 per cent. Some companies, working rich veins, have been obliged to stop operations, upon finding themselves unable to pay the royalty contracted for, or upon higher charges being demanded. The question is growing urgent in these times of diminishing productive values. The poorer qualities of quartz which would give employment to the most labor, and which in the older fields will soon become the only dependence of the mining industry, can not be worked at all, owing to the practice of exacting royalties. A royalty of 35 per cent. of the gross product of gold may swallow up 25 per cent. profit on the capital invested in mining poor quartz lodes or poor alluvial leads. The freeholders, who receive thousands of pounds per annum from mines found on their estates, purchased the land in most cases from the state at one pound per acre. The Government proposes to tax the royalties they receive, and to impose different conditions as to mining rights on the lands to be sold hereafter, by which the right of the purchasers to exact royalties will be restricted, and the state itself will receive a royalty from the precious metals.

Victoria took the lead of the mother-country, by passing an act in 1884 amalgamating the two branches of the legal profession.

New South Wales.—The Governor is Lord Augustus W. F. S. Loftus, appointed in 1879. The Prime Minister and Colonial Secretary is Alex-
AUSTRALIA AND NEW ZEALAND.

The estimates for 1885 make the revenue £8,480,000, and the expenditure £8,000,000, leaving a surplus of £270,000.

Throughout the year 1884 Parliament was occupied with the elaboration of and laws that are to take the place of the Preston system, which, after twenty-two years, was condemned by an overwhelming majority in the election of 1883. The session of 1883 was prolonged into November, and did not close until November 1st, a full month from the time of meeting. The reason assigned was a settlement of the land question, before farming operations and land transactions fixed in suspense pending that issue. The introduction of the Government's was a logical and simple measure, which aimed to strike a balance between the interests of the zero, or lessees of state lands, whose farm flocks constitute a large portion of the wealth, and those of the small graziers agriculturists who desire to obtain farms on easy selection and purchase. Under the law the tenant could only acquire title to the maximum of 440 acres, lands on which he had improvements, every pound’s worth of improvements being secured at an appraised price a pound’s shilling of land. This provision, intended torove to the tenant his improvements, enabled the squatters to practice one of the worst forms of the leasehold system. They secured only the sites on which they placed their fences and wells for their present needs, but if the sheep increased and the flocks ascened, they concentrated all the wealth in advance our increasing flocks over a wide area. The great runs were thus rendered secure at the encroachments of other squatters the expanse of freeland, and when an appraiser came at the end of five years to fix the rent on land, the value of land was destroyed by the abstraction of the facilities. The ministerial bill providing that the runs into two parts, half of each was to be left open to freeholders, and the other half secured to the tenant, on a long lease at a low rental, without cessation for improvements. The public lands over 100,000,000 acres, a large portion of which are leased to squatters. Of the 9,000,000 acres that have been sold the largest is not fully paid for.

Legislature authorized the construction 79 miles of railroad. There were on November 1st about 1,600 miles open to traffic, miles having been completed during the year, and 400 miles authorized in previous years were in process of construction. The capital invested was nearly £18,000,000, railways returned a profit of 44 per cent., and during the previous year left Government a gain of about £28,000 after providing for working expenses, maintenance, and interest. The new railroads will entail an expenditure of about £14,000,000. Several of them are to be of a lighter and cheaper character than the old lines. The Northern Railway, to connect Sydney with Queensland, has been opened as far as Glen Innes, and will reach the Queensland line within two years.

The drought, and Industrial Depression.—New South Wales was the greatest sufferer from the drought that has afflicted Australia for the past three years. The colony lost by the water famine not less than 12,000,000 sheep and a proportionate number of cattle. The squatters, embarrassed by their losses, and uncertain about the pending land legislation, ceased making improvements. The consequence was a large influx of labor into Sydney. The Australian Governments are the largest employers of labor. In consequence of their relation to the labor market, they have had the duty imposed upon them of providing labor to the unemployed and of sustaining the rate of wages. The minimum rate of $2 a day has been accepted as a political principle, together with the eight-hour work-day, as expressed in the cant coupled:

"Eight hours for work, eight hours for play,
Eight hours to sleep, eight bob a day."

On account of the stagnation in trade the industrial establishments reduced their force of workmen; but the powers of the trade-unions prevented them from lowering the rates of wages. The Minister of Public Works made arrangements to employ all who were out of work; but, in order not to depart too widely from the purpose of the Government to economize expenditures, he offered six shillings a day instead of the popularly established standard, a resolution that excited much indignation among the working-class. Two thousand men had to be dealt with, an official labor exchange was opened, and special relief works were started in the neighborhood of Sydney for married men. To others who wished it, free passes were given by railway to the coalfields.

Silver Discoveries.—Australia has not heretofore been classed among the silver-producing countries. Ores have been worked in Victoria, and to a larger extent in New South Wales, with moderate success; but the aggregate yield down to 1883 was less than a million ounces. The recent discovery of silver-bearing rock of unexampled richness promises to place Australia ahead of the United States in this industry. Like the silver-mines of Nevada, Australia’s wealth of silver lay hidden in a vacant and barren region—in the Barrier Range, a cluster of low, naked peaks in New South Wales, on the South Australian border. The stony stream-beds in the deep valleys are dry for years together. A waterless, saline depression separates the mountains from the hill-country of South Australia. On the eastern
side is the Darling river region, which pastures numerous flocks and herds with the help of dams and wells to supply water. Several lodes of rich galena-ore were discovered. One trial invoice, reduced in England, yielded 695 ounces of silver, 20 per cent. of lead, and 6 per cent. of copper per ton. Several others averaged 40 ounces of silver and 67 per cent. of lead. Claims were entered and capitalized for vast amounts before a shaft was sunk. For one claim, an acre in extent, £50,000 was paid. In a few weeks the mining camp of Silverton sprang up from the wilderness into a town of 2,000 inhabitants. In the Thackaringa district, on the South Australian side of the boundary, thick seams were discovered which assayed £2 to £40 per ton. The ore-beds extend over an area sixty miles long and from twenty to thirty miles broad. Rich as are some of the galena-ores, it is the black silver or sulphate ores that constitute the peculiar wealth of this region. Black rock, which was at first cast aside as worthless, assayed as high as one third of its weight of pure silver. In the Apollon mine is a mass of mineral eighty feet long and fifty feet deep, the poorest of which contains 7,000 ounces of silver per ton, and the best 22,000 ounces.

**Queensland.**—The Governor of the colony is Sir Alexander Musgrave; the Premier, T. T. McIvor. The Queensland Government has taken up in earnest the question of indentured black labor, by which wealth has been rapidly produced, but the settlement of the country retarded. Arrangements have been made for bringing laborers from Great Britain and the Continent. Legislation is in progress for the settlement of the public lands in a manner to encourage immigration and the development of the natural resources of the country, and to yield an adequate return to the state. Railroads are being extended to the limits of the settled districts, and a new line is projected from Cloncurry to the Gulf of Carpentaria. The labor trade of the Pacific is to be subjected to stringent regulations. Recruiting labor in New Guinea and New Britain is prohibited.

**South Australia.**—The Governor is Sir W. C. F. Robinson. A new ministry was formed in June, composed of the following members: John Colton, Premier and Chief Secretary; W. B. Rousewell, Treasurer; C. C. Kingston, Attorney-General; J. Coles, Commissioner of Lands; T. Playford, Commissioner of Public Works; H. C. Baker, Minister of Education.

**Western Australia.**—The Governor is Sir Frederick N. Broome. This Crown colony is the largest in extent, but the least progressive, of the Australasian commonwealths. The soil is too poor for agriculture, except in a few localities, and the rainfall is deficient. Even sheep-farming, which is the largest industry, is but very moderately successful, owing to these causes and to the presence of poisonous herbs in the pastures. Notwithstanding the hotness of the climate, the sheep grow heavy fleeces. Nine tenths of the country is covered by timber. The gigantic and valuable jarrah is abundant in the south. The colony produces good wine; also an excellent grade of hops for which there is sometimes a demand in India. There are lead-mines, which were profitable with the price of the metal declined. The export timber-trade has not met with success. Wealth has increased faster than population. The export and import trade has increased per cent. in twelve years; the number of sh from 650,990 to 1,559,797; the public revenue from £105,300 to £250,372.

**Tasmania.**—The Colonial Governor is Sir C. Strahan; the Prime Minister, W. R. Gibbons. Tasmania is the most salubrious and attractive of the Australasian colonies, with an abundance of natural resources. The monopoly the land by a few large sheep-farmers conveys these natural advantages and has hitherto checked all development. Annexation of Victoria has lately been agitated as a means of escaping from the rule of these monopolists, in order to keep their vast sheep-runs on the hands of settlers, secured the defeat of Government schemes of railroad construction in 1883. In 1884 the measure was successfully carried through Parliament. Under the domination of this plutocracy, sheep-farming displaced agriculture, causing the wheat production to decline 665,996 bushels between 1875 and 1880. Their supremacy is perpetuated by a very limited franchise, which allows only 1 per cent. of the population to vote for members of the Legislative Council, and disfranchises half the adult males from voting for the popular representatives.

The productivity of the Mount Bishop mine excited a mining fever. Of the many opened but few proved at all successful. At times the gold fields are the scene of speculation, in which, many companies stopped in 1884.

**New Zealand.**—The Governor is Sir W. F. Jervois. The ministry, which was reconstituted in 1888 under H. A. Atkinson, resists in the beginning of September, 1889, the threat of a vote of want of confidence presented by the House of Representatives. The new ministry is composed as follows: R. Stout, Prem and Attorney-General; Sir Julius Vogel, Colonial Treasurer and Postmaster-General; Richardson, Minister of Public Works; J. B. Eccleston, Secretary for Crown Lands and Native Affairs; J. A. Tole, Minister of Justice; W. Reynolds, Minister without a portfolio.

The new Treasurer proposes a conversion of the debt at reduced interest. The revenue 1884=85 is estimated at £3,380,000, and expenditure at £3,770,000. Annual increments in the revenue are expected, sufficient to meet cuts or reductions in taxation, which the new ministry have inaugurated by lowering property-tax one half.

**The Maoris.**—After vainly appealing for peace to the New Zealand Government to red
their grievances and observe their treaty rights, the Maori nation sent a deputation of chiefs to England in 1883 for the purpose of laying their case before the supreme Government. In 1884, the Maori King, Tawhiao, and Major Te Whero, one of the native delegates in the New Zealand Assembly, came on the same mission. They asked to have a larger native representation in their own government, petitioned for the creation of a native commission, and demanded that the lands wrongfully taken from them in the past be restored. In their memorial they set forth facts regarding the violation of the treaty of Waitangi in relation to chiefship, villages, lands, forests, and fisheries. Wars have been waged against them for the mere purpose of wresting away portions of their domains. The acts of 1869, 1865, 1873, and 1890 were particularly iniquitous measures of confiscation. Lord Dorby's answer discouraged the hope of imperial intervention. The Maoris built a hall three years ago, for the separate legislature to which they aspired. The Maori delegates to the Colonial Parliament are said to be remarkable for their eloquence and ability. The Maori children now receive an elementary education. The people are making rapid advances in civilization, and exhibit a high order of intellectual capacity as a race, but they are fast dying out, having already shrunk in number to forty-four thousand. Te Whiti and the other imprisoned insurgents have been set at large.

AUSTRIA-HUNGARY, an empire constituted since 1867 as a dual monarchy. The Cisleithanian Kingdom, or Austria, and the Transleithan, or Hungary, are connected by a common army, navy, and diplomacy, and in the person of the hereditary sovereign, Franz Joseph I, reigning Emperor of Austria and King of Hungary, who was born Aug. 18, 1830, and ascended the throne in 1848, succeeding his uncle, Ferdinand I, who abdicated. His heir-apparent is the Archduke Rudolf, born Aug. 21, 1858.

The common affairs of the two monarchies, restricted to military defense and foreign policy, are regulated by the Delegations, consisting of 120 members, chosen in equal numbers from the Austrian and Hungarian legislatures—30 from the upper and 40 from the lower house of each. The common Ministers, responsible to the Delegations, are as follows: Minister of Foreign Affairs and of the Imperial Household, Count G. Kálnoky de Kőrösapatka, called to the head of the administration, Nov. 31, 1881; Minister of War, Count Bylandt-Rheydt, appointed June 21, 1876; Minister of Finance, Baron von Kállay, appointed June 4, 1882.

Area and Population. The area and population of the provinces of Austria, according to the census of Dec. 31, 1880, and of Hungary, according to a return of the Statistical Bureau, published in August, 1883, are given in the following table:
The population of the city of Vienna in 1880 was 706,402, and that of the thirty-five villages included in the metropolitan police district, 377,293, making with the garrison, of 30,703 troops, a total population of 1,103,857. The population of the other cities of the empire, containing more than 40,000 inhabitants, was as follows:

<table>
<thead>
<tr>
<th>City</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buda-Pest</td>
<td>860,561</td>
</tr>
<tr>
<td>Prague</td>
<td>162,898</td>
</tr>
<tr>
<td>Trieste</td>
<td>146,144</td>
</tr>
<tr>
<td>Lemberg</td>
<td>106,748</td>
</tr>
<tr>
<td>Graz</td>
<td>87,291</td>
</tr>
<tr>
<td>Bratislava</td>
<td>59,660</td>
</tr>
<tr>
<td>Buda-Neusiedl</td>
<td>72,675</td>
</tr>
<tr>
<td>Kosmonov</td>
<td>60,085</td>
</tr>
</tbody>
</table>

Commerce.—The following table exhibits the values of the imports and exports of merchandise across the Austro-Hungarian customs frontier from the neighboring countries, from the free port of Trieste, and through the other ports of the empire, for the years 1880 and 1881, in millions of guildens and tenths of millions:

<table>
<thead>
<tr>
<th>Source and Destination</th>
<th>Imports 1880</th>
<th>Imports 1881</th>
<th>Exports 1880</th>
<th>Exports 1881</th>
</tr>
</thead>
<tbody>
<tr>
<td>German Empire</td>
<td>872.8</td>
<td>601.7</td>
<td>405.7</td>
<td>440.7</td>
</tr>
<tr>
<td>Roumania</td>
<td>41.9</td>
<td>60.9</td>
<td>52.1</td>
<td>50.9</td>
</tr>
<tr>
<td>Italy</td>
<td>84.6</td>
<td>84.7</td>
<td>86.5</td>
<td>86.5</td>
</tr>
<tr>
<td>Russia</td>
<td>10.5</td>
<td>10.1</td>
<td>11.9</td>
<td>14.5</td>
</tr>
<tr>
<td>Turkey, Servia, and Montenegro</td>
<td>115.6</td>
<td>118.6</td>
<td>145.4</td>
<td>162.7</td>
</tr>
<tr>
<td>Switzerland</td>
<td>8.6</td>
<td>8.9</td>
<td>4.1</td>
<td>4.3</td>
</tr>
<tr>
<td>Other considerable countries</td>
<td>114.9</td>
<td>114.0</td>
<td>114.0</td>
<td>114.0</td>
</tr>
<tr>
<td>Total by land</td>
<td>487.9</td>
<td>590.9</td>
<td>500.1</td>
<td>606.4</td>
</tr>
<tr>
<td>Commerce by sea</td>
<td>119.7</td>
<td>118.9</td>
<td>114.3</td>
<td>114.0</td>
</tr>
<tr>
<td>Total commerce</td>
<td>607.6</td>
<td>684.4</td>
<td>666.4</td>
<td>717.4</td>
</tr>
</tbody>
</table>

The values of the imports and exports of the free port of Trieste in 1882 were, in thousands of guildens, as follows:

<table>
<thead>
<tr>
<th>Source and Destination</th>
<th>Imports 1881</th>
<th>Imports 1882</th>
<th>Exports 1881</th>
<th>Exports 1882</th>
</tr>
</thead>
<tbody>
<tr>
<td>European and North African ports</td>
<td>91,801</td>
<td>90,917</td>
<td>104,098</td>
<td>106,400</td>
</tr>
<tr>
<td>Brazil</td>
<td>6,983</td>
<td>6,488</td>
<td>1,326</td>
<td>877</td>
</tr>
<tr>
<td>United States</td>
<td>10,131</td>
<td>8,550</td>
<td>1,977</td>
<td>1,878</td>
</tr>
<tr>
<td>Other American ports</td>
<td>83,759</td>
<td>47,162</td>
<td>4,009</td>
<td>9,070</td>
</tr>
<tr>
<td>Total foreign commerce</td>
<td>144,474</td>
<td>155,567</td>
<td>119,069</td>
<td>121,129</td>
</tr>
<tr>
<td>Austrian ports</td>
<td>12,097</td>
<td>10,317</td>
<td>25,065</td>
<td>26,980</td>
</tr>
<tr>
<td>Total commerce</td>
<td>156,571</td>
<td>165,884</td>
<td>144,034</td>
<td>148,049</td>
</tr>
</tbody>
</table>

The imports and exports of the general classes of merchandise in 1880 and 1881 across the customs line were of the following values, in millions and tenths of millions of guildens:

<table>
<thead>
<tr>
<th>Class of Merchandise</th>
<th>Imports 1880</th>
<th>Imports 1881</th>
<th>Exports 1880</th>
<th>Exports 1881</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food, etc.</td>
<td>198.1</td>
<td>176.8</td>
<td>394.5</td>
<td>805.4</td>
</tr>
<tr>
<td>Raw materials</td>
<td>104.9</td>
<td>115.9</td>
<td>139.8</td>
<td>159.7</td>
</tr>
<tr>
<td>Manufactured articles</td>
<td>191.2</td>
<td>207.5</td>
<td>215.3</td>
<td>287.5</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>52.1</td>
<td>61.8</td>
<td>85.8</td>
<td>40.8</td>
</tr>
<tr>
<td>Total</td>
<td>467.6</td>
<td>484.4</td>
<td>666.4</td>
<td>717.4</td>
</tr>
</tbody>
</table>

The imports of precious metals amounted to 32,200,000 guildens, the exports 22,500,000 guildens; the imports 96,500,000 guildens, the exports 75,000,000 guildens. The imports of principal sugar, increased from 64,172,400,000 guildens; those of live and animal food products from 50,900,000,000 guildens. The exports of spirits, and a decrease in the exports of fuel, consisted of manufactured implements and fabricated goods. The exports of fine wares likewise showed an increase.

The exports of sugar in 1888 were 5 metric quintals, 316,465 less than in 1887, cultivators of the beet in Bohemia a part of the Austrian Empire and the number of sugar suffered from the crisis sugar-trade as severely as the produce country. The state and private railroads increased their tariffs to promote the export of sugar with a view of the best houses in Vienna failed in 1884.

Nautigation.—The number of vessels at the port of Trieste in 1885 was 6,574, of 9,332,808; the number cleared with tonnage, 1,388,497. The number of vessels cleared at the port of Trieste was 17,479, of 6,301,519 tons, of which 2,565,559 tons were steamers; the sailing under the Austrian flag was 5,478,240 tons. The tonnage cleared was 6,299,120 tons; the steam tonnage, 5,478,449 tons, under the Austrian flag, 5,478,449 tons. The merchant navy in 1888 comprised 48 vessels engaged in foreign commerce, 816 tons; 35 coasting-vessels, of 12,674 steamers engaged in foreign commerce, 72,356 tons; 52 steamers for the internal trade, of 7,250 tons, besides 8,185 smacks and other small craft.

Railroads.—On the 1st of January, 1888, there were 11,911 kilometres of railroad line in Austria, and 7,824 kilometre in Hungary. Of the Austrian lines 385 were owned and managed by the state, and 8,908 kilometres were owned and managed by companies. In the state owned and managed its own lines, kilometres in length, and administered lomights of private lines, the remainder...
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The length of telegraph lines in 1882 was 38,043 kilometres, of
the state owned 23,544 kilometres, and companies 12,333. The total length
was 95,993 kilometres. The number
of dispatches in 1882 was 6,826,308. The
number of letters, postal circulars, etc., forwarded by the Aus-
ter-Office in 1882 was 841,724,000, of
which 7,128,000 were international; the num-
ber of newspapers, 75,978,000; the amount of
transferred by postal-orders, 4,941,800,
and of which 75,300,000 guildens was
wages of foreign countries. The receipts of
the Post-Office were 18,104,840 gul-
dens, 15,113,779 guildens. The numbers,
foreign newspapers, 00; the amount of money forwarded,
0,000 guildens; the receipts, 6,811,035
and the expenditures, 4,419,165 guildens.

The establishment of the Hungarian army numbers 16,676
officier-3,271,838 men. The war strength is
officers and men; of the Czecht the
är, 121,542; of the Honved, 120,282.

The recruits are divided into volunteer and obligatory
military service; seven in the
and two in the Landwehr. The excess
of the required annual contingent
sent to the Landwehr, except a number,
and ten per cent. of the annual recruit,
attached to the field army as a re-
supply losses in the ranks. The Hon-
ich can only be employed outside of
the Austrian army. The Landwehr
is kept up to the same degree of effi-
cient cavalry; the Landwehr service
is kept up to the same degree of effi-
cient cavalry; the Landwehr service
is kept up to the same degree of effi-
cient service. In October, 1883, new regu-
lar cavalry was organized; the
and equipped Landwehr cavalry, con-
of three regiments and three Union regi-
to begin with. The horses are bought
by the Government and given into the care of
private individuals, who keep them in good
condition for six years in return for their use,
except during five months of the first year de-
voted to ménage, and the periods of tactical
exercise, and for full possession when the six
years are over.

The Navy.—The Austrian Government has not kept peace with other
powers in the field of naval development since the days when Teghott
covered the Austrian navy with glory at Hel-
goland and Lissa. Baron von Pöchki, who suc-
ceded Teghott in the command of the navy
in 1871, retired on account of sickness in
November, 1883. His successor, Rear-Admiral
Sterneck, one of Teghott's most efficient
subordinates, was appointed, with the hope of
insuring new life into the neglected and
sluggish naval service. The first act of the new
commander was to form the ironclads into a
squadron, and put them through elaborate
manoeuvres to exercise the officers in the prin-
cipal design of the present naval armament,
which is to keep the Adriatic clear in case of
war. The ironclads were then placed out of
commission, and four corvettes on cruises to
distant parts of the world for the technical
improvement of the officers and crews, and for the sake of the commercial
ad-
advantage of showing the Austrian flag on distant
coasts where there are consular agents, or any
Austro-Hungarian trading interests. The iron-
clad fleet consists of 6 casemated vessels and 3
frigates. The unarmed steamers are 2 frig-
ates, 3 close-decked corvettes, 5 open-decked
corvettes, 4 torpedo-boats, 7 gunboats, and 10
transport vessels, yachts, etc. On the Danube there
are two monitors. The number of officers in
time of peace is 533, and of men 5,990.

Finance.—The closed accounts of 1880 make
the ordinary expenditures 102,089,579 gul-
dens (the value of the Austrian gulden or forin
is 4f. 8 cents), and the extraordinary expenditures
18,570,415 guildens, including 8,256,418
guildens of military expenses in the occupied
provinces; total expenditures, 110,659,994 gul-
dens. The total receipts were of the same
amount, made up of net receipts from cus-
toms, 4,905,019 guildens; payment from the
Hungarian treasury, 2,217,038 guildens; quotes
of the two monarchies, 108,643,442 guildens.
(The common expenses, beyond the receipts
from customs and other sources, are assessed
on the two monarchies in the proportion of 70
per cent. on Austria and 30 per cent. on Hun-
gary.) The budget for 1883 fixes the ordinary
expenditures at 109,015,475 guildens, of which
4,310,100 guildens are for the diplomatic ser-
vice, 2,905,161 for the army, 7,915,764 for
the marine, 1,338,784 for financial administra-
tion and military pensions, and 125,655 for the
audit bureau; the extraordinary expenditures
at 8,819,396 guildens; total expenditures, 117,-
930,768. The receipts from various branches
of the administration are reckoned at 3,249,780
guildens, from customs 14,870,255 guildens,
and the payment from the Hungarian treasury, 1,998,383 guldena, leaving 99,911,768 guldena to be assessed on the two monarchies.

Foreign Affairs.—The reconciliation of Austria and Russia is Prince Bismarck's last and greatest achievement in the interest of European peace. The war-cloud that overcast Europe upon the conclusion of the Austro-German alliance parted with the failure of Russia and France to join in a counter-alliance. But in the Balkan Peninsula, Russia continually stirred the elements of disturbance, and by secret machinations and half-disguised manifestations of dissatisfaction and jealousy endeavored to thwart the political and commercial progress of Austria and the German people in southeastern Europe long after her own internal dangers and the strength of the Central European League afforded a double preventive against the predicted struggle between the Slav and the Teuton. The open encouragement of the Herzegovinian insurgents in the Russian press showed the danger of the situation. The bond of sympathy between the Slav races and the position of the Czar as the traditional protector of the Balkan peoples creates for both powers a situation of perplexity and embarrassment. The fixing of boundaries to their several spheres of interests, so as to obviate jealousy and misunderstanding, is the only mode of meeting in a pacific spirit the difficulties that must arise. The circumstances of the Herzegovinian insurrection, and, still later, the favor shown by the Czar to the Prince of Montenegro, and the marriage of the daughter of the latter to the Servian pretender, showed the will and the power of Russia to throw obstacles in the path of Austria. A change in the attitude of Russia was observable in the autumn of 1883, when the Russian troops were ordered back from the German frontier. In January M. de Giers visited Vienna, after conferring with Bismarck at Varcha, and the sincerity of the rapprochement. When the three Emperors met at Skiernevice in the autumn (see Germany), it was seen that a degree of concord has been reached, which clarifies the atmosphere in southeastern Europe, and dispels the dangers of the Eastern question in that quarter. The basis of the Austro-Russian understanding is not known. If Russia has secured the acquiescence of the German powers in the union of Bulgaria and Eastern Roumelia, she has saved her honor in gaining the dearest point of the San Stefano Treaty, and can extend her commercial enterprise and political influence in the direction of Constantinople, while leaving Austria scope to win the Serbs and Albanians, and continue her slow advance toward the Aegean. The question of the division of the Balkan Peninsula belongs to the remote future. Thus far Russia has only succeeded in vexing Austria in the western Balkans, while on the other side Austro-German combinations, depending on the jealousies of the youthful states of Roumania and Bulgaria upon the personal predilections of their have no lasting basis. If Austria-Hungary proceeds the provisions of the Berlin Treaty, incorporating Bosnia and Herzegovina, will naturally seek compensation in the cove of whose greatest interests lie. A cease of the intrigues and rivalries of the powers in all the petty states of the Peninsula would conduces to healthier conditions in those principalities. The coming of the Emperors in September does signify the admission of Russia to the German military alliance, but, according to the explanation of Tisza in the Hungarianament, assurance of peaceful relations to those between Italy and the allied empires.

The Occupied Provinces.—The Turkish inces, placed under Austro-Hungarian iristration by the Treaty of Berlin, have an area of 61,655 square kilometres. The population of Bosnia and Herzegovina, according to a census taken in 1879, is 1,158,446, consisting of 946,761 Greek Catholics, 448,677 Mohammedans, 209,391 Roman Catholics, and 249,969 of other creeds. The population of the Sandjak of Novi-Bazar is 189,000.

Among the conditions of the friendly standing between Austria and Russia was sealed by the meeting of the Emperors at Skiernevice, is supposed to have the withdrawal of Russian objections to the incorporation of Bosnia and Herzegovina, not only because of the difficulty which the two monarchies shoo attached, or whether they should be atten tered as an imperial province, but for its provoking the ill will of the Mohammedan minority. The partition of the Balkan Peninsula by the reforms must be carried out in order to insur well-being and contentment of the people. Under the convention of April, 1879, the Austro-Hungarian Government undertook to administer the laws as they stood. The evils that drove the Christian peasants panted to rebellion and provoked the mixture of Europe remain the same. The sources of the rayak is in fact harder than expected. The rents and tithes are col more rigorously and punctually by the authorities, to these burdens are added tobacco monopoly and indirect taxes an obligatory military service, the introduction which led to the Herzegovinian insurrection.

The cause of Bosnian troubles has been agrarian. When the Osmanlis first entered the country, the land was divided into three parts, one of which was retained by the Sultan; one held by the Vukuf, or ecclesiastic property, the revenues of which are t
served for the service of the mosques; the appanage system, on a kind of feudal tenure; the spanak, or Turkish cavalry, at first one ninth of the products; janizaries, or foot-soldiers, as in the land, the kmeta, or peasant, gradually reduced to wretched serfdom; the rent was increased to one third, one half, the product of the land, the entrepreneur had to deliver at his landlord's pleasure. After the great insurrection of the tenant farmers and the landlords, the kmeta received their half. If he did not deliver the whole, he was paid even shares with the landlord. This system is still in force. When put in practice it was evaded by regulations forbidding the kmeta to gather his crops; if they had been viewed by the beg, or landlord, even though, as frequently happened, over the absence or carelessness of the landlord, they rolled on the ground; requiring him to pay his tretina, or third, as assessed on the standing crop at the inspection, though it might not be wholly destroyed before it could be gathered; and making the rents payable in gold, though for lack of communications it was often impossible to market the grain. The new law, as provided by Omer Pasha resulted in a malignant outburst of fanaticism and an exodus of Christians into Croatia and Slavonia. This led to the first interposition of Austria, and a new edict of the Porte in 1859, for the protection of the tenancy. By 1875 the confusion had again reached a pitch where the Porte was powerless to enforce the laws. When the Ausro-Hungarian Government, and the administration it promised to have the existing laws judicially tested and impartially executed. The decisions that have been pronounced regarding the landlord's share in the crops, the mode of its assessment, and the conditions of payment, betray a bias in favor of the landlord rather than in the interest of the yazak. The Austrian officials, mostly young and inexperienced men, associate with the wealthy Musulman landowners, but have no unofficial intercourse with the peasantry. The bureaucratic formalism of the authorities bears harder on the people than the easy-going Turkish régime, under which, in bad seasons, they could by wise and petitions escape part of their taxes and rents, or have the payment deferred. The chasm between the Government and the people is widening. The economic condition of the country has visibly deteriorated, in spite of improved means of communication, the cultivation of new lands, the colonization of German laborers, and other local remedies. The increase ofbrigandage, and the sympathy of

the people for the kosidacs, or highway robbers, are symptoms of the impoverishment of the peasantry and their alienation from the authorities. Besides the perennial agrarian question and the pressure of the taxes, the Bosnians suspect the Austrians of a design to suppress their nationality, the evidence of which they see in the recruiting law and the propaganda of the Roman Catholic religion. Among their complaints is that of the lack of schools in which their own language is used. The land question, however, transcends all other causes of dissatisfaction. They expected under Christian rule to be free forever from their Moslem oppressors, and to become the owners of their lands. Austria has disappointed them, and seems to have assumed the government only with the intention of handing them over again to Turkey, with their betters more firmly fastened than before they first attracted the interest of Europe. Hence the agitation in favor of union with Serbia. Their Servian brothers, they think, would drive out the bega, and restore to them the heritage of the land. A reform of taxation would afford a partial relief; but the Austrian government is precluded from any effectual readjustment, since the only property-owning class, the Turkish landlords, is exempt from taxation. When the provinces are definitively annexed there will be an irresistible demand for a radical solution of the land question. The most likely plan is the creation of a peasant proprietor by the expropriation of the landlords and the eakuf by means of a credit operation and the repayment of the purchase-money through a long series of years by the peasants, a method that has been carried out in many states without fiscal loss.

Austria.—Austria proper, or Cisleithania, has been governed, since the recognition of Hungarian independence, by a twofold Legislative, a central body, called the Reichsrath, and local assemblies, or Provincial Diets, for the individual provinces. The Reichsrath consists of an upper house, or House of Lords, and a lower house, or House of Deputies. The House of Lords is composed of the princes of the blood royal, 14 in number in 1883; the territorial nobility, numbering 58; the archbishops (10), and bishops of princely rank (7); and life-members appointed by the Emperor for distinguished merit and ability, in number 105. The Abgeordnetenhaus, or House of Deputies, consists, under the electoral law of 1875, of 388 members elected by four different constituencies: 1, the people of the rural districts; 2, the people of the towns; 3, the chambers of commerce in the large towns; 4, the large landed proprietors.

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formation of the ministry, holds no portfolio. The Minister of Agriculture is Count Falken-
barn, one of the original ministers. Count S.
Conrad von Eybeschitz, appointed Jan. 17, 1880, directs the department of Public Worship and
Instruction. Dr. J. Dunajffsky, Minister of
Finance, entered the Cabinet June 26, 1880. The
Minister of Commerce and National Economy
is Baron F. Fino von Friedenthal, and of
Justice A. Prazik, both appointed Jan. 4, 1881.

Finance.—The product of taxes increased from
305,851,000 guildens in 1876 to 347,094,600 in 1881, the increase in the direct taxes being
from 90,942,000 to 93,608,000 guildens, and in the indirect taxes from 211,909,000 to
253,426,000 guildens. The budget estimate of receipts in 1881 was
409,645,924 guildens; the actual receipts 441-
939,940 guildens; the estimated expenditures,
485,113,304 guildens; the actual expenditures,
477,785,771 guildens. The budget for 1888
makes the total gross receipts 493,785,271
guildens, and the total net receipts 388,072,055.
The revenue from direct imposts is estimated at
92,905,000 guildens, of which the land-tax
furnishes 38,000,000 guildens, the house-tax
28,600,000; industrial imposts, 3,500,000; the
income-tax, 28,000,000, and arrears, etc., 900-
000. The customs revenue is placed at 42-
764,196 guildens, and the cost of collection at
27,895,340 guildens. The excise duties are ex-
pected to yield 85,398,600 guildens, of which
22,426,500 guildens are derived from beer,
7,500,000 from spirits, 4,113,000 from wine,
4,980,000 from the cattle-tax, and 37,209,000
from sugar; the cost of collection is estimated at
12,482,940 guildens. The yield of the salt
monopoly is estimated at 19,092,000 guildens,
cost of collection 8,017,000 guildens; tobacco
monopoly 67,800,000 guildens, cost of collection
24,061,300 guildens; stamps, 16,730,000 guildens
net; legal dues, 52,177,000 guildens; the lot-
terie, 120,000,000 guildens. This mode of
“collection" satisfies all elements save the one
most potent but now bitter and desperate G
party, which forms a large and hitherto
past minority, still holding about two
of the seats in the upper chamber. This
it in isolation, and is inclined to give
fierce contest against the new tendencies
it has been denied the moral support
pected from Germany, and since its
its constituency is falling away. The con-
tion that forms the majority, and rather
than follows Count Tsafe, is composed of
Czechish and Polish groups, which are
ning for autonomy and the preser-
their respective nationalities and lan-
and of the Clerico-Conservative Hobes
and Liechtenstein Clubs. The small Con-
Club, of Istrians and Italians, votes on
questions with the Government and
times with the minority. The regular
consists of the German, Centralist
stitutional party, which controlled the
government after the war of 1866, and exe
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The War of Languages.—The language question in Bohemia became a more serious matter when it extended from the arena of parliamentary discussion into the field of social life. The success of the Czechs in restoring their national tongue as the language of the courts, of official intercourse, and of instruction, did not settle the question for those parts of Bohemia where there is a preponderant or considerable German element. The German party responded with a proposition to separate from the kingdom the German districts. There followed a social persecution of the Czechs in those districts more grievous than the Germans had suffered in the Czechish districts during the earlier stages of the conflict. In the Reichsrath the Constitutionalists offered a challenge, by presenting Count Wurmbrand's resolution affirming German to be the state language of Czechithania, which the House of Deputies rejected by 186 votes to 105, after a declaration of the necessity of a state of the position of German as the actual language of the state was not assailed. A proposal to refer the language question in Bohemia to a committee composed of members of all the nationalities, with the right of the Bohemians in the various districts, was rejected by the Left and withdrawn when the Czech party showed a willingness to accept this plan. The Liberals threatened to abstain from legislative work, but changed their minds in order to follow the National Liberals of Germany in the new path of social legislation, during the normal work-day bill in earnest of their conversion to socialistic principles. The language conflict was transferred to the Bohemian Diet, where the German Liberals fought a losing battle with interpellations and fruitless motions.

Suspension of the Constitution in Vienna.—Austria-Hungary were until recently free from socialistic agitation. For three or four years no refugees from Germany and agents from Switzerland have spread among the industrial population the Anarchist doctrines in a dangerous and revolutionary form. But the Governments of the two monarchies felt no inclination to copy the anti-Socialist enactments of Germany. The invitation from Germany and Russia to join in a treaty for the extradition of Socialists and revolutionists was rejected. In 1883 a murder for the sake of robbery was committed by persons who were evidently connected with Anarchist associations. The police began to subject the Socialists to an exasperating surveillance, and to treat them as a quasi-criminal class. Collisions occurred, and finally a policeman, Hildeck, was murdered. On New-Year's-eve a Jesuit preacher in the Vienna suburb of Favoriten, who had offended the Socialists by defending the rights of property, was stoned from the chancel and the congregation dispersed in a panic. On the 10th of January a money-changer, named Eisert, was robbed and murdered in the suburban Marienhil-Strasse by a band of Socialists despairing. A number of revolting crimes, notably the murder of Count Majlath, chief judge in Hungary, and the series of murders committed by Hugo Schenk, who enticed away several women on promise of marriage and killed them for the sake of their money and valuables, alarmed people at this time with the idea of an epidemic of crime. On the 29th of January, in the suburb of Floridsdorf, the detective Bloch, who had been active in tracking out the murderers of Hildeck, was assassinated. After this deed the Government felt the necessity of providing against a state of terrorism, though still averse to special anti-Socialist legislation. Count Tasafo therefore took advantage of an act, passed May 2, 1889, to meet a state of insurrection. This law empowers the Government to suspend constitutional rights in particular localities. On Jan. 30 a decree of the ministry was issued suspending civil rights in Vienna, Konstanz, and Welsch Neustadt, the judicial districts of the metropolis. The rights suspended are the inviolability of the post, the guarantee against domiciliary visits without warrant, the liberty of association, the righ to assembly, and the freedom of the press. Another decree, based on the law of May 28, 1873, suspends trial by jury, enacting that certain crimes shall be tried by a bench of six judges. Both decrees remain in force till Dec. 31, 1894. Count Tasafo had difficulty in finding a majority in the House of Deputies to confirm these decrees. The Constitutional party denounced them as a reactionary stroke aimed against the freedom of political and religious opinions, while among the young Czechs and other liberal sections of the majority there was a reluctance to consent to the exercise of dictatorial powers and the employment of repressive measures.

Anarchist Trials.—The murder of Bloch, the detective, was arrested while escaping, and was tried in June. He proved to be a shoemaker, named Stellmacher, a young man of remarkable intelligence and resolution, who was deeply versed in socialistic theories and had been active in their propagation. Facts were revealed
showing an organization, with head-quarters in Switzerland, and ramifications throughout Austria-Hungary, for the spread of Anarchist literature. By the confession of Steinfächer, the murder of the detective was conspired by a group of Socialists, who appointed him to perform the act. On the evidence, though meager and conflicting, of members of Eissert's household, he was convicted of the murder of the banker, after confessing that he killed Biich, and was executed, Aug. 8. Kammerer, the murderer of Hlubec, and one of the murderers of Eissert, was tried and condemned. Several of the accomplices in the Eissert robbery were arrested. The police soon made up their minds that the two convicted murderers, and a very few other persons, were the only Anarchists that were capable of desperate and criminal deeds. In September they discovered a secret printing-press in the house of a decorative painter named Bachmann. He, with his wife and several associates, who were also arrested, had been engaged since the execution of Steinfächer in printing and distributing black-rimmed circulars of incendiary import, pretending to emanate from an executive committee of the party.

Normal Work-Day.—The party of the Left formerly opposed social legislation as obstinately as the German Liberals. But after the conversion of the most influential section of the latter to the principle of social reform, they have recanted the theory of laissez-faire, and, in order to regain the sympathies of the working-classes, and to prove their capacity for positive legislative work, inaugurated industrial legislation by proposing a legal limit to the working-day. They copied the Swiss law, which makes eleven hours a legal day's work. The fractions that compose the majority readily acceded to such a proposition, emanating from the party that especially represented the manufacturing classes. The effect of the measure, however, was defeated by an amendment, which passed by a scant majority, leaving the Ministry of Finance to make out a list of industries, upon representations from the Chamber of Commerce, in which twelve hours' labor will be allowed, which list is subject to revision every three years.

Other Legislation.—The Government made no further progress in their programme of tax reform. Authorization was obtained for the acquisition of several railroads by the state. Additional transfers of state railroads from the central administration to the provincial authorities were effected against the lively resistance of the German Liberals. Notable among the minor legislation was an act ordering indemnity to individuals condemned by the tribunals whose innocence is subsequently established.

Vienna Cattle Regulations.—Simultaneously with the opening of the new Vienna cattle-market, built at a cost of 2,000,000 gulden, the Lower Austrian Government undertook to regulate prices of beef, which were kept up by a combination between Hungarian cattle-growers and Vienna commission merchants. The dealers refused to use the market, subject to such a control, and transferred the wholesale business to Pressburg. In the beginning of April, 1884, the Government issued an order restricting the direct importation of beers from Pressburg, by imposing quarantine and sanitary inspection at the frontier. The order raised a storm of indignation in Hungary, where it was declared to be conceived in the interest of the Bohemian and Moravian stockraisers. Minister-President Trauza threatened retaliatory measures, and hinted at the abrogation of the Austro-German reciprocity treaty. The measure failed of its purpose. The Bohemian cattle that were offered at the market were below the standard, so that the butchers went to Pressburg for their supply. On that account, and because the decree was considered an infraction of the customs union, and was likely to lead to a serious conflict with Hungary, it was rescinded.

Hungary.—The kingdom of Hungary possesses an ancient Constitution, consisting of fundamental statutes enacted at various dates since the foundation of the kingdom in the ninth century. The Constitution was abrogated after the rebellion of 1848, restored in 1860, and extended to its ancient limits in 1867, when the dual compact was concluded with Austria. The Hungarian Diet consists of an upper chamber, called House of Magnates, and a lower, called House of Representatives.

The Cabinet.—The Council of Ministers is composed as follows: President and Minister of the Interior, Koloman Trauza de Broskev; Minister Adlatus, Baron B. d'Orezv; Ministers of Public Instruction and Worship, A. de Trefort; Minister of the Honved, Lieut.-Gen Baron Fejervary, who was appointed on the death of Count Guido Raday in October, 1884. Minister of Communications and Public Works, Baron G. Kemény; Minister for Croatia and Slavonia, K. Bedevich de Komer; Minister of Justice, Dr. T. Pailler; Minister of Finance, Count J. Szépany; Minister of Agriculture Industry, and Commerce, Count P. Széchanyi.

Finance.—According to the closed account for 1881, the ordinary receipts amounted to 284,780,987 gulden; the extraordinary receipt to 208,806,965 gulden; total, 493,587,952 gulden; the ordinary disbursements to 509,729,876 gulden; the extraordinary disbursement to 195,163,961 gulden; total, 504,928,837 gulden, leaving a deficit of 16,350,975 gulden. The total receipts are estimated in the budget for 1881 at 501,028,969 gulden, and the total expenditures at 522,711,484 gulden, showing an estimated deficit of 21,681,615 gulden. The direct taxes, on lands, houses, industrial establishments, financial societies, capital incomes, transportation, military exemption etc., are expected to produce 80,080,400 gulden; the excise duties, 15,724,978 gulden; the tobacco monopoly, 38,303,464 gulden.
balance between the ordinary revenue and expenditure in 1884.

Legislation.—The session that opened September 28, 1881, came to an end May 29th. Among the principal acts of the session are the incorporation of the Military Frontier with Croatia-Slavonia, the conversion of the 6-per-cent. rent, the introduction of a system of gendarmerie, the embasement of the Theiss, and the rebuilding of Szegedin, the act for the regulation and state control of intermediate schools, the extensions of the railroad network and the convention with the Austro-Hungarian State Railway, and the authorization of new Parliament buildings. The Government, upon the reassembling of the Diet in January, sustained a blow from an unexpected quarter. When the subject of obligatory civil marriage was brought up in 1883, the Government did not venture to proceed beyond a resolution, which was passed November 24th. In January the ministry proposed a law legalizing marriages between Christians and Jews. Such a law has long existed in Austria. The Premier specially identified himself with the project, which was promptly passed by more than the normal majority. An agitation was then set on foot by the Clerical Conservatives and the Anti-Semitic. Magistrates who never entered the legislative hall were summoned in sufficient number to throw out the bill in the Upper Chamber. It was the first time that the House of Magistrates had ventured to assert their legislative powers in opposition to the Government. The bill was sent up a second time, and again voted down by a bare majority, which included Austrian noblemen who possessed no interest in Hungary, except the hereditary right to sit in the House of Magistrates, who came in sufficient numbers to turn the scale. The members who appeared for the purpose of defeating the measure were mostly frivolous young nobles, with no serious motives.

The New Parliament.—The elections for the next triennial session took place in July. The Liberal or Government party maintained its preponderance, electing 230 members. The Moderate Opposition returned 60. The party of Independence, otherwise called the party of '45, elected 55. The Anti-Semitic party obtained 21 seats and took their place for the first time as an organized party. The unattached members, or "Savages," who usually vote together and with the Government in most questions, hold ten seats. The groups representing the non-Magyar nationalities are the Transylvanian Saxons, whose 14 members act in concert with the Moderate Opposition; the 40 Croats, who are usually found in alliance with the Government; and 6 Romanians and Serbs. The Government commands a majority of more than 50 over all the opposition parties and groups, not counting the 50 Croatian and "Savage" votes.

The ministry set before the new Parliament, besides important tasks, an extensive pro-
gramme of parliamentary reform. The action of the Magnates on the bill to permit mixed marriages between Hebrews and Christians precipitated the question of reforming the obsolete constitution of the Upper House. The House of Magnates is the largest Upper Chamber in the world, containing from 700 to 800 members. For many years past seldom more than 50 or 60 have taken part in the deliberations. The House has attempted neither to initiate, amend, nor reject legislation, but has contented itself with allowing the regular attendants formally to approve the enactments of the Chamber of Deputies. The list of Magnates comprises the princes of the blood royal, who own lands in Hungary, 2 in number; 50 or 60 dignitaries of the Roman Catholic, Greek Catholic, and Oriental Greek Churches; 10 Barons of the Empire and the Count of Pressburg; the 68 Counts Palatine, who are simply Government officers; 18 princes; 866 counts; 268 barons; 2 Deputies of the Croatian Diet; and 5 regents of Transylvania. Tisza's scheme of reform cuts down the representation from the hereditary nobility, all of whose male members have held a seat by right of birth. The Esterházy, Zichy, Szapary, Bathory, and other great houses, furnished twenty or thirty peers each. In the reformed House of Magnates only those noblemen have a seat who pay 3,000 gulden of land-taxes. Magnates naturalized in Hungary are not to lose their seats if they sit in the Austrian Upper House. To the spiritual peers are added representatives of the Evangelical, Calvinist, Unitarian, and Jewish bodies. Another feature of the scheme is the creation of life-peers, not to exceed one third of the total number, from the ranks of citizens who have distinguished themselves in any sphere of public life.

The plan by which Koloman Tisza proposes to reform the Lower House is by changing the duration of the Legislature from three years to five. The motives for this seemingly reactionary step are to prevent the petty gentry, who constitute the bulk of the representatives from ruining themselves in election expenses, and to minimize the excitement, the abuses, and the scandals of the periodical elections.

A third measure is the enlargement of the disciplinary powers of the parliamentary presiding officers, which have been limited to the right to call to order, and, if the member proves refractory, to administer a rebuke.

The Croatian Question. — The episode of the escutcheons has united the Croats in as strong a determination for independence from Hungary as that which fired the Hungarians in their struggle with Austria. After the revolution of 1848, the Slav provinces of Croatia, Slavonia, and Dalmatia were severed from Hungary. A year after the establishment of the dual monarchy, Croatia, Slavonia, and a part of Dalmatia, merged into a single state, were reunited with the Magyar Kingdom. The compact of union was carried through under pressure by a Magyar ban, and was so unpopular that in 1871 years later, the National party, which represented the Croatian sentiment of national dependence, gained a majority in the Hungarian Government dissolved assembly, and when a still larger Opposition was returned, would have pressed to more arbitrary measures if the National had not offered to come to terms. They to uphold the compact on the promise of cessions and benefits, but soon sank in opposition of a Government party, neglecting the fulfillment of those promises. The就像 they had denounced in opposition. Those of the party were dissatisfied with the treatment of Croatian Hungarian Government, and with practices of the party in power, seconded constituted a Moderate Opposition, under the name of the Independent National party. Radical Opposition, which aimed at liberty, independence grew up under the lead of Stareckich, who was at first almost solitary representative of the Great Oes idea. They took the name of the party, in reference to their assumption the compact of 1868 was not concluded regular and constitutional manner. The of Croats under the compact is various interpreted in the various parties, and by Hungarian Government, which has treated as a province or land of the crown, certain guaranteed autonomous rights, certain Croatian jurists insist that the is personal, with a common Legislative common purposes, of the same nature as which subsists between Hungary and At The Croats consider that they are exp by the Magyars. Of the taxes collected land, Slavonia has been levied on only a small portion of which is return public improvements or any other useful. They are cut off from the port of Fiume differential railroad tariffs, which favor Hungarians so much. The prevalent the secessionists and Great Croatian movements is derived partly from the notion the growing agrarian distress, which is due to backward agricultural methods as too sudden breaking-ray of feudal and ecclesiastic institutions, is caused by the stepletly treatment of Croatian economic interests the Hungarian Government. To this action is joined the fear that Hungary in to destroy the autonomous institutions of the istria, reduce it to a Hungarian province eventually crush out the Croatian national and language. Hence the outbreak of the Minister Szapary occasioned by replacing Croatian with the Hungarian arms on a building. The national aspirations are of ours degrees. The movement has grown in sympathy with the success of the Sla-
AUSTRIA-HUNGARY.

In asserting their nationalities, Austria received encouragement both from Croatia and Dalmatia. The more moderate party in the revision of the compact with Hungary and the rest of Dalmatia, with the port of Trieste, hoped to complete the "triune king," Croatia, Dalmatia, and Slavonia. The Serbians and Croats saw their hopes on a war, in which Great Croatia, with the Serbs in Dalmatia, Slavonia, Carniola, and southern Styria, Istria, Bosnia, and Dalmatia, would take a coordinate position with the rest of Dalmatia, with the port of Trieste, and Hungary.

The Serb Party.—The incorporation of the Frontier in 1883 imported a new element into the political life of the country. This district, nearly as large an area, and more if as many inhabitants, as Croatia, unified in military fashion to prevent its neighboring Turkish provinces from being seized by Austria-Hungary, the military administration is removed. The population is of Servian na- ture. The incorporated district sends 35 members of the Croatian Diet. The deputies, uniting with the Serbs already in the Chamber, formed a group apart, which was the same in the Croatian Assembly as in the Serb one, demanding in return for their votes a vote in favor of their nationality and religion.

Their reward was the recognition of the rights of the Greek-Oriental Church. Their efforts were shown toward the religion and national sentiment of their Serb brethren. The Emperor, formerly sheltered the persecution. The Croatian Diet adopted the Hungarian statute of 1868, regulating the educational autonomy of the Greek-Oriental Church, and passed a law intended for the suppression of the schools. The law passed in the Croatian population. Before the law of the act of 1894, all their religious duties were based upon ancient innovations. The act recognizes the Greek-Oriental Church, and legalizes the Serb schools under the supervision of the Greek Orthodox clergy. The use of the Cyrillic alphabet is used.

The Diet.—The Hungarian Government suspended the Constitution, and appointed a Royal Commissioner, extraordinary powers, to restore order and prevent an outbreak of the insurrection that followed the substitution of Hungarian for Croatian on the government buildings. After the suppression of the disturbances, Knheu-Hedervary, a Hungarian of descent, was appointed Ban; Pejačevich, who had refused to restore the Hungarian constitution, having resigned. When the National Assembly met together in December, there was no Government party left. Many went over to the Opposition, and those who remained were too timid to face the danger of the Hungarian Government. Members who spoke in justification of the authority were hissed from the galleries and mobbed in the street. The Starchevich party uttered the most incendiary language, and allowed no other sentiments to be heard. Soldiers and gendarmes were posted in the chamber to prevent violence, and the leaders of the Opposition were forcibly removed. After a month of violent scenes, the Government obtained a vote of indemnity for exceptional measures taken during the insurrection, and a provisional budget allowing them to collect taxes and pay necessary expenses for six months, and then dismissed the Assembly. After clarifying the function of the Legislator and repressing popular agitation, the Hungarian Government adopted conscription measures, such as the employment of the people on public works to relieve distress, and the authorization of railroads in Croatia and the Military Frontier.

Before reassembling the Diet in May, the Ban assured himself of a working majority by a bargain with the Serbs. The inevitable arrangement of the Hungarian ministry for a breach of the Constitution in appointing a dictator was framed in moderate terms. The vote of censure pointed out that the Constitution could only be suspended by the crown, on the recommendation of the Ban, and demanded, as a guarantee against one-sided action in the future, the appointment of deputations to consider and declare the principles of the bilateral compact between Hungary and the united kingdoms of Croatia, Dalmatia, and Slavonia.

The budget was voted and the action of the executive strengthened by the suspension of the law making judges irremovable. The debate on the military bill grew more and more violent. The Speaker again used arbitrary means to silence the patriotic fury of the Radicals. Students of the university encouraged the defenders of national rights, and, when the Government proceeded to investigate these demonstrations, the professors resigned. Magistrates and corporation officials in various towns were dismissed on account of anti-Magyar demonstrations. In July, the session was again summarily closed. The adjourned House came together in August to complete the business of the session, which was the last one of the triennial period. After another week of conflict between unbridled license and gag-rule, the Legislature was dissolved. The elections for the new Diet took place in September. The result proved the thorough disaffection of the Croatian people.

The National party, by putting forth all the means of pressure at the disposal of the Government, obtained enough seats to make, with the Serbs, a majority. They showed an actual
gain of three, or 69 members, about one half of them Serbs, out of the 110 elected. But the Moderate Opposition and the club of "Savages," or independent members, dwindled to almost nothing, while Dr. Starchevich's following increased to 25. The agitation in the country grew more intense. Local officials were removed and replaced by Government commissioners in many places. In Agram the petty state of siege was proclaimed. The new Diet was opened September 30. The transaction of business was a greater impossibility than before. On the 24th of October all the members of the Radical Opposition were removed and excluded from the House by gendarmes. The introduction of Hungarian laws into Slavonia furnishes an additional cause of irritation in Croatia. Joint deputations were recently appointed to adjust the matter; but, as the Croatsians demanded that Flume be restored to Croatia, the deputations separated without accomplishing anything. Another grievance is the alleged injustice to Croatia in the adjustment of its financial accounts of the monarchy.

BALLOONS, NAVIGABLE. Experiments in astatic navigation, made by Capt. Renard, the director of the French military ballooning establishment at Meudon, and Capt. Krebs, his assistant, were more successful than any previous attempt. The first to apply his ingenuity to the problem was Henri Giffard, who experimented with steam in 1855. In 1872 Depuy de Lôme attempted balloon-steering by hand-power. In 1886 Frederick A. Gower, an American, in France, succeeded in guiding a fish-shaped balloon, of 2,500 cubic metres capacity, with a bronze steam-engine of five-horse power, consuming petrol gas. The same year Tissandier experimented in a distaff-shaped balloon with a Siemens motor, actuated by a bichromate battery. The brothers Tissandier have worked as assiduously at the solution of the problem as the officers in the Government works. The constructive features and mechanical principle are very nearly the same in both balloons. That of Messrs. Renard and Krebs is elliptical, with conical ends, but with the forward end larger and blunter than the other; while the Tissandier balloon has symmetrical ends. In the latter the propelling screw is behind the car. The Renard-Krebs balloon has a propeller in front and a rudder behind. The steering is accomplished chiefly with the screw, which has a lateral play like a ship's rudder. The same principle has been tried in steamships to increase their steering capacity, but is impracticable, because no metal is strong enough to withstand the resistance and sailed back to the starting-point, descending in a slanting direction to within a few feet of the earth, where the machine was reversed and stopped, and the balloon pulled down by a rope. A second trial was a failure, because a stronger wind was blowing, and one of the storage batteries refused to work; but a third ascent, made in November, was entirely successful. The balloon went through evolutions in the air and descended at the point of departure, as in the first voyage.

BAPTISTS. I. Regular Baptists in the United States.—The "American Baptist Year-Book" for 1884 gives statistics of the regular Baptist churches in the United States, of which the following is a summary: Number of associations, 1,198; of churches, 27,918; of ordained ministers, 17,327; of members, 2,474,771; of Sunday-schools, 15,989, with 184,395 officers.
BAPTISTS.

The missionaries had supplied 1,599 churches and out-stations, connected with which were 26,962 members, and 46,129 persons in Sunday-schools, and reported the organization of 145 churches and 2,849 baptisms. The work of the society among foreign populations had been carried on chiefly among the Germans, the Scandinavians, the French (in New England and at St. Anne, Ill.), and the Chinese in San Francisco. The condition of all the German and Scandinavian Baptist churches in the United States, the greater portion of which are self-supporting, is presented as follows in the report of the society:

_German_: 188 churches, with 150 mission stations supplied by them, 130 pastors, 11,000 members, and 196 Sunday-schools, with 1,655 teachers and 12,309 pupils, 41 students for the ministry. The German Baptists of Canada, 13 churches and 887 communicants, co-operate with the society, and receive aid from it.

_Scandinavian_: Swedish, 108 churches, 48 pastors entirely devoted to the work of the ministry, 5,705 church-members, 57 houses of worship, and 73 Sunday-schools, with 389 teachers and 2,786 pupils. Norwegian and Danish: 29 churches, 85 ministers, and 1,500 members. Nine missionaries were employed among the French, and reported more than 40 baptisms in New England. A Scandinavian department is established in the Theological Seminary at Chicago, and a French department in the seminary at Newton, Mass. Nineteen missionaries were employed among the Indians, including four teachers in the Indian University. This institution returned 126 students. The missions in Mexico were conducted in the State of Nuevo Leon, in the city of Mexico, and on the border, at El Paso, Texas, and returned about 300 members. The school at Monterey was attended by 127 pupils. The schools among the freedmen now number 15. Two schools for girls had been added during the year, viz., Hartshorn Methodist College, at Richmond, Va., and Spelman Seminary, at Atlanta, Ga. The seminary at Natchez, Miss., had been removed to Jackson. The whole number of pupils in the 16 schools was 2,628.

The seventieth annual meeting of the American Baptist Missionary Union was held in Detroit, May 23d. The Executive Committee reported that the receipts for the year had been $342,448, and the expenditures $350,896. The reports from the mission-fields showed that there were in the Asiatic missions (Burma, Assam, the Telugus in India, China, Bangkok, Siam, the Bassas in Africa, and Japan) 162 ordained and 680 unordained preachers, 566 churches, and 33,849 members; and in the European missions (Sweden, Germany, France, Spain, and Greece), 870 preachers, 541 churches, and 68,473 members; in all, 1,582 missionaries, 1,127 churches, and 112,122 members. Baptisms during the year, 4,979 in the Asiatic and 7,087 in the European missions.

_Southern Baptist Convention._—The Southern
BAPTISTS.

Baptist Convention met at Baltimore, Md., May 7th. The Rev. P. H. Mell, D. D., of Georgia, was chosen president. The Home Mission Board reported that its receipts had been $66,414, and its work had been prosecuted at a cost of about $48,000. The board had employed 144 missionaries, who had served 338 churches and stations, and reported 5,665 baptisms, and 141 Sunday-schools with 6,897 teachers and pupils. A church-building department had been organized in November, 1888, for the purpose of assisting destitute churches by loans in building and repairing their houses. It appeared that there were, in the 164 associations heard from in the Southern States, 619 churches that had no houses of worship. The department had helped twenty-three churches, and estimated that 2,000 church-buildings were needed, for which the sum of $500,000 would be required. Theological instructors had labored among the colored people in Georgia and in Texas. The mission among the Indians, with the Levering Manual Labor School, had been continued. The convention adopted resolutions respecting the colored people, recognizing their claim to assistance, and advising that the work of instruction among them be continued; and, with respect to the Indians, that the success of the work thus far among them justified its continuance, advising that that people be encouraged to build for themselves neat houses of worship, and favoring the preaching of the gospel among the wild tribes. The receipts of the Board of Foreign Missions had been $80,465, the largest amount ever returned in one year. This sum, with the balance of $4,160 from the previous year, gave the board $86,625 at its disposal. The Women's Auxiliary Societies had contributed $18,895 to the treasury of the board. Reports were made from the missions in West Africa, Italy, China, Brazil, and Mexico; in connection with which were returned 95 missionaries (native and foreign), 42 stations and out-stations, 1,141 church-members; contributions of $1,077; 684 Sunday-schoolers; and 176 additions. An account was given to the convention of the Kabyles of Algeria as a people among whom it might be expedient to begin a mission. The Southern Baptist Theological Seminary reported the value of its endowment as $220,000; number of students, 118.

The colored Baptists of Kentucky report 45,000 communicants, with a university attended by more than 200 students, and having property valued at $20,000 and a weekly newspaper. Their Women's Educational Convention had raised $1,000 during the year.


II. Free-Will Baptist Church.—Statisti Church are given in the "Free-Will Register and Year-Book" for 1885; the following is a summary: Number meetings, 46; of quarterly meetings, 1,498; of ordained preacher of licensed preachers, 159; of members in addition to the churches regularly c with the regular quarterly and yearly; there are many other small Free-Will bodies in the Southern and Western substantial agreement in faith and prac the churches represented in the Gene fference. The "Liberal Baptist Year published in 1884, makes the follow mates of the number of members bodies of this kind:

Free Baptist Associations in the United States.
General Baptists
Separate Baptists
United Baptists
Church of God *
Free Christian Baptists of New Brunswick
Free Baptists of Nova Scotia
Total.

These, added to the members of the Free-Will Baptist churches, will make members in general sympathy with the ple of that body.

The educational institutions of the Will Baptist Church include Hillsdale Hillsdale Mich., with nine depart instruction and 867 students; Bates Lewiston, Maine, and the theologies connected with it; New Hampton In New Hampton, N. H.; Nichols Latin Lewiston, Maine; Maine Central 1 Pittsfield, Maine; Green Mountain S

* See section under this heading below.
The receipts of the Seventh-Day Baptist Tract Society had been $10,161, while the amount of its special funds was $5,650. One million seven hundred and sixteen thousand pages of printed matter were on hand in the depository at the time of making the report. The net resources of the printing-house were returned at $9,354. The society was publishing a general weekly paper, a general missionary paper, and a Sabbath-school paper; a quarterly review, which had not proved profitable, and would be given up; and a Dutch newspaper in connection with its aggressive work in Holland. An American Scandinavian paper was contemplated.

The total receipts of the Seventh-Day Baptist Missionary Society, for the year ending September 14, 1894, were $10,239. Besides this, $1,500 had been raised in local contributions. Reports had been received from 28 home missionaries. The foreign mission, at Shanghai, China, returned three missionaries, two native preachers, three native teachers in two day schools, and 63 pupils.

The Seventh-Day Baptist General Conference met in its seventieth annual session at Lost Creek, W. Va., September 24th. Albert Whitford presided. The new churches of Texarkana, Ark., and Daytona, Fla., were received into the Conference. Upon the suggestion of the Committee on Denominational History, the Conference extended a general invitation to individual members and churches to preserve by writing or printing all noteworthy facts relative to the Church and its work, and to furnish their material, unless they have other use for it, to the committee. The Committee on the State of Religion reported a net increase in the denomination of 145 members, and that the greater portion of the increase was found in connection with what were called the weaker churches. A Woman's Executive Board was constituted for the purpose of enlisting the women of the denomination in its various benevolent enterprises, and of raising funds for the same. A Ministerial Bureau of seven members was constituted, whose duty was defined to be to receive applications of ministers desiring places for work and of churches wanting ministers, and to make such recommendations as they might deem best in all such cases. Resolutions were passed recommending total abstinence from all that intoxicates, as the only consistent and safe principle upon which to carry on the temperance reformation, and declaring it the duty of both national and State governments to prohibit the traffic in intoxicating drinks.

IV. Church of God.—The fourteenth Triennial General Eldership of the Church of God met in Wooster, Ohio, May 28th. Elder George Sigler, of Pennsylvania, was chosen Speaker. The Board of Missions, reporting for three years, stated that it had employed thirteen missionaries for the first, eight for the second, and eight for the third of those years, whose...
work had been performed in the States of Michigan, Missouri, Nebraska, Kansas, Arkansas, and Texas, and in the Indian Territory, and by whose agency many churches had been organized and many Sunday-schools established. No missionaries had as yet been employed in foreign fields. Arrangements were made during the meeting of the General Eldership for the collection of funds for the foreign missionary work, and a decision was recorded to co-operate with the Free-Will Baptist Board of Foreign Missions. The book-agent reported a business for three years of $3,748. The Board of Publication reported that the Church Hymnal had been completed and three editions of it sold, while the demand for the hymn-book had not diminished. The sales of a tract on the Washing of Saints' Feet having ceased, the copies of it had been gratuitously distributed.

The subject of establishing a Book Concern was referred to the Board of Incorporation. The Board of Education had decided to establish an educational institution at Findlay, Ohio, and the buildings for Findlay College were in course of erection there. The sense of the General Eldership was expressed to the effect that brethren moving West would do well to consider the propriety of settling in neighborhoods already occupied by the Church of God, or in colonies, so as to have the privileges of the Church with them. Resolutions were adopted requesting brethren to oppose the "growing desecrations of the Lord's day" by the publication of Sunday papers, theatrical performances, railroad excursions, and opening beer-gardens, saloons, and places of amusement; declaring the question of the prohibition of the liquor-traffic the most important issue before the people, and condemning all kinds of license favoring that traffic; and recommending to the Annual Eldership to require a pledge of abstinence from the use of tobacco for license to preach. A directory of the officers and several boards of the General Eldership was ordered published in the Church Advocate, Harrisburg, Pa.

Baptists in Ontario and Quebec.—The statistics of the Baptist Churches of Ontario and Quebec, by conventions, are as follow: Western Convention, one association, 386 churches, 20,584 members, 964 baptisms during the year; Eastern Convention, three associations, 80 churches, 4,440 members, 178 baptisms during the year; Manitoba and Northwest Convention, 10 churches, 501 members, 47 baptisms during the year; total, 386 churches, 25,275 members, 1,189 baptisms. Including the Grand Ligne Mission Churches, there are also 25 or 30 Baptist Churches within the two provinces, not connected with the associations. The number of members in communion with them is estimated at about 1,100.

VI. Baptists in Great Britain.—The English "Baptist Year-Book" for 1884 reports the statistics of British Baptists: Number of churches, 2,508; of chapels, 9,782; of pastors in charge, 1,169; of ministers, 804,452; of Sunday-school pupils, 487,187. The number of churches had decreased during the past ten years, but the number of chapels had increased by 356. The increase of Sunday-school pupils during the same period had been about 100,000. The Baptist Building Fund at its anniversary in May returned a capital of £26,620. It had during the year voted 26 loans to the amount of £12,010. Twenty-five new chapels had been opened during the year, and eight had been enlarged. The expenditure incurred had been £21,381, and £5,937 new settings had been added; but an indebtedness of £28,376 had been contracted.

The ninety-second annual meeting of the Baptist Missionary Society was held in London, April 29th. The total receipts of the society, general and special, for the year had been £59,784; and a debt of £23,215 had been incurred. Report was made of the condition and operation of the missions, as follows: India, 27 principal stations, 180 sub-stations, 46 European missionaries, and 120 native evangelists; Ceylon, 3 principal stations, 73 sub-stations, 5 missionaries, 20 native evangelists; India, 3 principal stations, 62 sub-stations, 15 missionaries, 15 native evangelists; Japan, 1 principal station, 4 sub-stations, 2 missionaries, 2 native evangelists; Africa, West Coast (Cameroons and Victoria), 5 principal stations, 10 sub-stations, 2 missionaries, 6 school-teachers, 8 native evangelists; Central Africa (the Congo), 5 principal stations, 18 missionaries: West Indies, 7 principal stations and Calabar College in Jamaica, 26 sub-stations, 7 missionaries, 48 native evangelists; Norway, 16 stations, 1 missionary wholly supported, 14 assisted Norwegian ministers; Brittany, 8 principal stations, 26 sub-stations, 8 missionaries, 8 native evangelists; Italy, 9 principal stations, 9 sub-stations, 9 missionaries, 10 native evangelists.

The Jamaica Baptist Union returned 2,543 baptisms with a net increase of 1,168 members; 134 churches; and 26,027 members.

The autumn session of the English Baptist Union was held in Bradford, beginning October 6th. The Rev. A. Glover, of Bristol, presided. A paper was read by the Rev. Dr. Angus, of Regent's Park College, reviewing the statistics of the denomination from 1866 to 1883. It showed that the Baptist churches of England had enjoyed during the period under review a net increase of about 100,000 members, of whom 60,000 had been added during the first ten and 40,000 during the last ten years. The increase of chapel accommodation had kept pace with the increase in population, and had probably done something to provide for the moving of the population and the redistribution of the seats necessary to meet the altered conditions of different neighborhoods. In all, 204,957 sittings had been provided at a cost of £792,000, or an
average of £8,000 a year for the first ten years, and £75,000 a year for the second ten years. Nothing was included in this account for school-room repairs, decorations, ministers’ houses, organs, or interest on chapel debts, and it applied to England alone. At the meeting in behalf of missions, report was made that ten mission-stations had been established on the Congo river, at distances of one hundred miles apart, so as to cover a stretch of 1,300 miles of territory, and twenty missions were to be sent out two by two to supply them. The mission in India was to be strengthened, and an additional income of £5,000 was needed for the purpose. The President of the Union made an address on the duties of the Baptist churches toward unbelief and the unbelieving, toward the masses outside of the Church at home, and toward the heathen world.

At the meeting of the Baptist Total Abstinence Society it was stated that one half of the ministers of the Baptist denomination, and 508 out of 226 students in the Baptist colleges, were total abstainers.

VII. Baptist Union of Scotland.—The Baptist Union of Scotland held its annual meetings in Glasgow, in October. It was reported that the denomination now embraces 87 churches and 140 preaching stations and cottage meetings, with 9,517 members, and 79 Sunday-schools, having 828 teachers and 1,967 pupils. The increase of members during the year was 967.

BELGIUM, a constitutional monarchy in western Europe. The House of Representatives is elected in the ratio of one member to at least 40,000 inhabitants, by citizens paying direct taxes to the amount of 43 francs, which restricts the franchise to about one thirteenth of the adult male population. The 193 deputies are elected for four years, one half of the terms expiring every two years. All laws relating to finance and military service must originate in this chamber. The members of the Senate are elected in the same way as the deputies; their number is exactly half that of the deputies, and their terms are twice as long. The reigning sovereign is Leopold II., born April 9, 1835, who succeeded his father, Leopold I., December 10, 1865.

Area and Population.—The area of Belgium is 5,445 square kilometres, or 11,375 square miles. The population at the beginning of 1883 was 5,685,846, or 490 to the square mile. The foreign-born population in 1880 was 143,361, of whom 51,069 were of French origin, 41,391 of Dutch, and 51,196 of German. Of the 5,630,009 inhabitants returned in the census of December 31, 1880, 2,237,868 spoke French, 2,479,746 Flemish, 41,072 German, 49,013 French and Flemish, 35,321 French and German, 2,809 Flemish and German, and 14,544 all three languages. The entire population profess the Catholic religion, except about 15,000 Protestants and 3,000 Jews. The population of Brussels at the close of 1881 was 165,350, with suburbs, 388,781; of Antwerp, 175,688; of Ghent, 138,755; of Liége, 128,233; of Bruges, 44,598; of Malines, or Mechlin, 43,354; of Verviers, 41,692; of Louvain, 36,867; of Tournai, 32,817. The number of marriages in 1881 was 59,487; of births, 185,621; of deaths, 125,217. The net immigration in 1881 was 1,842.

Commerce.—The aggregate imports of merchandise in 1881 were valued at 1,680,900,000 francs, the exports at 1,932,700,000 francs. The countries that figured most largely in the import trade were France, with 334 millions; the United States, 270; England, 257; the Netherlands, 238; Germany, 225; Russia, 198. The export trade was mainly with France, 414 millions; England, 254; Germany, 235; Netherlands, 180. The share of the United States was 43 millions. The values of the general classes of merchandise were as follows, in millions of francs and tenths of millions:

<table>
<thead>
<tr>
<th>Class</th>
<th>Import.</th>
<th>Export.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food, etc.</td>
<td>496-8</td>
<td>594-9</td>
</tr>
<tr>
<td>Raw materials</td>
<td>498-3</td>
<td>480-8</td>
</tr>
<tr>
<td>Manufactured articles</td>
<td>314-1</td>
<td>409-9</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>320-9</td>
<td>409-9</td>
</tr>
<tr>
<td>Total</td>
<td>1,800-5</td>
<td>1,800-7</td>
</tr>
</tbody>
</table>

The imports of cereals were 349 millions of francs, exports 187 millions; imports of colonial goods 68, exports 48 millions; imports of tobacco 174, of spiritsuous liquors 27 millions; imports of animal food-products and animals 43, exports 66 millions; imports of fuel 14, exports 81 millions; imports of raw metals 50, exports 112 millions; imports of textile materials 361, exports 86 millions; imports of glass and pottery 54 millions, of textile yarns 134, and fabrics 81 millions, of machinery 56 millions, of paper 29 millions.

Navigation.—The number of steamers entered at Belgian ports in 1881 was 3,201, tonnage 2,733,603; the number of sail-ships 1,885, tonnage, 638,961; total tonnage entered, 3,862,561— in 1880, 3,571,182; total tonnage cleared, 3,831,095—in 1880, 3,654,964.

The merchant marine in 1882 comprised 18 sailing-vessels, of 7,354 tons, and 41 steamers, of 70,486 tons.

Railroads.—The length of the railroad lines in operation in 1882 was 4,393 kilometres, of which 3,039 belonged to the state. The receipts from state lines amounted to 119,556,301 francs, expenses 74,642,328 francs; the receipts from lines owned by companies 92,620,403 francs, expenses 21,197,596 francs.

Posts and Telegraphs.—The number of private letters forwarded by the post-office in 1882 was 81,629,309; postal-cards, 22,586,876; newspapers, 88,675,000. The receipts were 12,739,743 francs; expenses, 7,796,598 francs.

The length of telegraph lines in 1882 was 5,851 kilometres; of wires, 26,074. The number of dispatches in 1882 was 8,397,391; receipts, 2,628,597 francs; expenses, 3,425,503.

The Army.—Although a neutralized state,
under the guarantees of the powers, Belgium maintains a considerable army for the defense of her territory. It is recruited by enlistments and conscription. The infantry numbers, under the army law of 1873, 25,671 men and 1,678 officers in active service, and about 52,200 men on the war footing; the cavalry, 5,680 men and 236 officers on the peace footing; the artillery, 7,559 men and 466 officers on the peace footing; the engineers, 1,571 men and 136 officers; the train, 877 men and 26 officers. The total effective, including the gendarmerie, is, in time of peace, 46,472 men and officers, with 10,014 horses and 304 pieces of field-artillery; in time of war, 108,688 men, 13,800 horses, and 240 guns. The civic guard in 1881 numbered 80,954 men in active service.

Finance.—The receipts of the treasury in 1880 were as follow:

<table>
<thead>
<tr>
<th>Receipts</th>
<th>Francs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct taxes</td>
<td>41,572,000</td>
</tr>
<tr>
<td>Customs</td>
<td>21,887,000</td>
</tr>
<tr>
<td>Excise</td>
<td>52,348,000</td>
</tr>
<tr>
<td>Various taxes</td>
<td>426,000</td>
</tr>
<tr>
<td>Registration duties, etc.</td>
<td>85,059,000</td>
</tr>
<tr>
<td>Tolls and dues</td>
<td>9,611,000</td>
</tr>
<tr>
<td>Railroads</td>
<td>109,912,000</td>
</tr>
<tr>
<td>Telegraphs</td>
<td>3,015,000</td>
</tr>
<tr>
<td>Other revenues</td>
<td>15,187,000</td>
</tr>
<tr>
<td>Repayments</td>
<td>4,416,000</td>
</tr>
<tr>
<td>Extraordinary receipts</td>
<td>593,000</td>
</tr>
<tr>
<td>Total ordinary receipts</td>
<td>297,889,000</td>
</tr>
<tr>
<td>Special receipts</td>
<td>103,905,000</td>
</tr>
<tr>
<td>Total receipts</td>
<td>894,315,000</td>
</tr>
</tbody>
</table>

The expenditures under the various heads were of the following amounts:

<table>
<thead>
<tr>
<th>Expenditures</th>
<th>Francs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public debt</td>
<td>92,554,000</td>
</tr>
<tr>
<td>Dues</td>
<td>4,641,000</td>
</tr>
<tr>
<td>Justice</td>
<td>15,568,000</td>
</tr>
<tr>
<td>Foreign Affairs</td>
<td>1,214,000</td>
</tr>
<tr>
<td>Ministry of the Interior</td>
<td>9,482,000</td>
</tr>
<tr>
<td>Public Instruction</td>
<td>17,961,000</td>
</tr>
<tr>
<td>Public Works</td>
<td>90,584,000</td>
</tr>
<tr>
<td>War</td>
<td>44,058,000</td>
</tr>
<tr>
<td>Government</td>
<td>5,438,000</td>
</tr>
<tr>
<td>Finance</td>
<td>15,072,000</td>
</tr>
<tr>
<td>Repayments, etc.</td>
<td>5,478,000</td>
</tr>
<tr>
<td>Total ordinary expenditures</td>
<td>292,590,000</td>
</tr>
<tr>
<td>Special services</td>
<td>5,950,000</td>
</tr>
<tr>
<td>Total expenditures</td>
<td>308,540,000</td>
</tr>
</tbody>
</table>

The budget voted for 1882 fixed the total ordinary receipts at 296,647,709 francs, and the expenditures at 310,755,995 francs. The budget for 1883 made the receipts 299,571,760 francs, and the expenditures 323,870,816 francs. The total annual amount of the public debt in 1882 was 1,969,299,744 francs, on which the annual charge is a little over 4 per cent.

Political Crisis.—The movement for the secularization of education in France, extending into Belgium, caused the overthrow of the Malon ministry, which had been in office eight years, in the elections of 1878. Frère-Orban, with Van Humbeek as Minister of Education, accepted the task of reforming the schools on liberal principles. The education act of 1879 repealed the law of 1842, which vested the control of state schools to a large extent in the clergy, and provided that religious instruction should form no part of the regular lessons, but that the priests might have the buildings for that purpose after school-hours. The Government devoted the resources of the state without stint to the improvement of the state schools. A system of public education, unequalled in its pedagogic and sanitary arrangements, was soon developed. The Conservative party identified itself with the Catholic clergy in opposing the "godless schools." Political passion and religious hatred combined divided the people into hostile camps. The antagonism was more bitter than in any other country. The clergy employed the enormous wealth of the Belgian Church in improving the clerical schools, and in establishing others where none existed. Parents incurred spiritual penalties and social ostracism by sending their children to the public schools. In many places Conservatives and Liberals held no communications with each other. The Government were provoked by the furious opposition of the Clericals to reprimands which detracted from the strength of their cause, such as the prosecution of Canon Bernard, the refusal to pay public honors to the Archbishop of Mechlin, and the attempt to suppress the procession of the Holy Blood at Bruges. The Government were put to much greater expense than they anticipated in order to compete with the lavishly endowed Catholic schools. Even in the cities, parents generally preferred religious instruction for their children. Throughout the country the clerical schools were attended by three and a half times as many pupils as the state schools. The serious error was committed of saddling every village with a state school, although in many every family sent its children to the church schools. The expense of these empty schoolhouses and idle teachers, defrayed partly by the general taxes and partly by the local rates, angered the Flemish peasantry, and plunged the Government into financial difficulties.

Extravagant expenditures on the fortifications of Antwerp and the valley of the Meuse, and upon the Palace of Justice, and other improvements at Brussels, swelled the annual deficits, to meet which, and the expenses of assigning 20,000 men to the reserve of the army, an increase in taxation was necessary. The Radicals, under the lead of Paul Janson, endeavored to extend the contest with the Clericals to other questions, and gave the Catholic party various causes of offense by irritating investigations and menaces against the rights and property of the Church. Their tactics excited distrust, although M. Frère-Orban with firmness confined the anti-Clerical policy of the Government mainly to the establishment of the principle of state education. In spite of the doctrinarian zealotry that imposed the undenominational schools on the unwilling half of the community, and of the fierce popular passions inflamed against them, the Government schools advanced in public favor. The Government went before the people in the bien-
tional election to fill half the seats of the Chamber of Deputies, which took place June 15, was attended by an unfortunate financial crisis and a dissolution in the Liberal party. The Janson faction, which, besides anti-Clerical views, advocated universal suffrage and a revision of the Constitution, was split by the moderates, who divided the electorate of the city equally with the Jansonists. The consequence was a victory, for the first time in forty years, for the Clerical party, which selected its list of 16 deputies by a majority of 1,200. The Clericals gained enough seats in the Chamber of Deputies, as in the late Chamber, to make it a subordinate department ministry of the Interior. The composition of the Cabinet was as follows: Premier of Finance, M. Jules Malou; of Affairs, M. Moreau d'Anday; of Commerce, M. Bernaert; of Works, M. Vanboom; of War, Gen. Pontus; of the Interior, M. Jacobs; of Justice, M. Woots. The cabinet, which had a Liberal majority, was dissolved and the elections appointed for June 15th. Although the Liberals regained control of Brussels and Nivelles, the result was a large majority of 25. The government inaugurated the new policy of reducing all legal proceedings begun under the rules of family courts, or ecclesiastical adoptions, to be at once dropped. New governors were appointed, a course for the law. Malou had been to resign the prime ministers in 1878. The Cabinet was to dismiss the heads of the communes and order new elections, but the desire of the Pope to resume diplomatic relations with Belgium, which was on offer in 1880, was notified to the chamber as an agreement made to that effect by the Vatican. The diocese of the Chambers, which met in the Vatican, to take the place of the Pope, to resign the diplomatic relations with Belgium, which was on offer in 1880, was notified to the chamber as an agreement made to that effect by the Vatican. They were unable to redeem their pledge not to impose fresh taxes. An increase in the excise duty on spirits was proposed, which would add 5,000,000 francs to the revenue and take over 5,000,000 francs away from the communes. They were also obliged to entertain the scheme of creating an army reserve, which the Minister of War agreed with the military authorities in considering necessary.

The crisis in the sugar industry prompted the Government to propose a bill, which was adopted, for imposing a surtax on foreign su-
sugar to counteract the bounties of other countries. The new French sugar law was expected to close to Belgian producers the French market, which took three fifths of their exports of raw sugar.

On the 31st of August, the day after the school bill passed the Chamber, a monster procession of Liberals marched with a petition to the King's palace. The Clericals organized a counter-manifestation for the following Sunday. As many as 180,000 people were brought to Brussels from all parts of the kingdom. The Liberals gathered in vast numbers on the streets, all wearing a blue flower as a party badge. The peasantry, who composed the bulk of the procession, were as ripe for a collision as the turbulent populace of the town. Some of the inscriptions on their banners expressed in insulting language their ancient enmity toward the people of the capital. But besides the peasants many noblemen, burgomasters, and politicians marched in the line. Black flags indicative of mourning and caricatures of priests hung in effigy were displayed. The citizens were many of them armed with sticks, and in front of the Bourse they blocked the way, and, charging upon the ranks of the demonstrators, carried off many of the obnoxious banners. The countrymen defended themselves stoutly, but the procession was broken up, only 8,000 reaching the palace to hand in the petition addressed to the King. The municipal authorities, who were condemned for not making better provisions against a breach of the peace, requested the assistance of the military. Troops of cavalry charged into the crowd many times, trampling down eighty persons before the mob was dispersed. Many people were injured, but no lives were lost.

The school bill of M. Jacobs passed the House of Deputies by a majority of 80 to 49, August 30. The only concession made by the Government was to allow discharged teachers an indemnity of 750 francs. When the majority rejected the proposition to require that the clerical teachers should be Belgian citizens, the Liberals withdrew all their amendments. The King postponed for some time the signing of the act. It was promulgated September 22. The Liberals bent all their energies to gain the communal elections in October. They demanded that the King should regard these as a criterion as to whether the country had given Parliament a mandate to destroy the state school system. In the elections of October 19th they won a decisive victory in all the important towns except Mechlin. In these elections the franchise is wider than in the parliamentary elections; it belongs to all who pay 10 francs in direct taxes, and to an additional class of recently created electors. There was a very large vote, however, that had been cast for the Conservatives in the June and July elections which now returned to the Liberals. The King had firmly withstood the clamor that sought to deter him from signing the school law, declaring that he would follow the strictly constitutional course. The expression of the popular will at the polls King Leopold was too wise to ignore. It was one of the rare conjunctures when a constitutional monarch has to determine whether a ministry with a parliamentary majority behind them are the exponent of the national will. The country was on the brink of revolution on account of the educational question. A precedent was not wanting, since in 1837 a Clerical ministry went out in consequence of a party reverse in the municipal elections. The King consequently requested the retirement of the two Ultramontane ministers, Jacobs and Woesta. The Cabinet replied that they must stand or fall together; but, after consultation with the Ministry of Finance; M. Jacobs was succeeded in the premiership, taking the Ministry of Finance; M. Jacobs was succeeded in the Ministry of the Interior by Prof. Thonissen, of Louvain; Chevalier Moreau took the Ministry of Commerce and Agriculture, giving up that of Foreign Affairs to Prince Carman-Chinay; M. de Volder was appointed Minister of Justice; M. Vandenhoebroek remained Minister of Railways, and Gen. Pontus, Minister of War. The ministers took office as an interim ministry for the purpose of securing the voting of the estimates and dissolving Parliament in the spring or at an early period. They were intrusted solely with the establishment of an army reserve, which Gen. Pontus made a condition of retaining office. The scheme adopted was to form a reserve of 30,000 men by extending to thirteen years the period during which the soldiers who have served their time are obliged to rejoin the army in the case of mobilization.

**BICYCLES AND TRICYCLES.**

**Construction.**—The bicycle is a vehicle having two wheels in the same plane, connected by a backbone or perch, the fore-wheel having about three times the diameter of the rear. The frame is constructed on the suspension principle, has a rubber tire set in a U-shaped rim, direct spokes of small steel wire, and an axle fixed to rotate with it; it is set in such a frame and mounted in such a way as to constitute at once the driving, guiding, and substantially supporting wheel of the vehicle. The remainder consists of a smaller suspension-wheel, similarly constructed (except that its axle does not rotate with it), having its bearings in the lower forked end of a hollow cylindrical perch, which extends upward and in a curved line over the large wheel; at this upper end it takes a swiveled or socket joint perpendicular to the axle, and immediately above the periphery of the large wheel, in a closed head or upper part of an elliptical hollow fork; the perch bears on it a step to mount by, and a saddle and spring for the rider; the fork, extending downward on
BICYCLES AND TRI CYCLES.

le the fore-wheel, has ball bearings for and extending upward has a cross-bar e parallel with the axle below, and le length: the fore-axle is provided achable cranks, oppositely projecting outermost ends at right angles with it, sar on their us rubber-seals. The s so con- and proportion to be provided, and in equilib the hands of the rider, his position behind a per- sion line past through the fores so almost y over the The radius re-wheel is a length of a leg, measur to the he foot, less eth of the l the height y above the bery. The so light as nly port-weight of a a machine nout forty and so e that prevent the shake and not to a rigid it is mainly s, with the adjuncts to perative.

are several varieties of vehicles popu- w as bicycles, which differ in some from the one described above; the set of their construction being to give l safety to the rider. The principal may be described as follows: 1. A having the small wheel in front, to be steering. The motive power is trans- the driving-wheel by two levers, one side of the wheel, which are cony leather straps wound around the t set of gravity pawls and ratchets. il machine having a forty to forty- h fore-wheel, and the rear-wheel trail considerable distance behind. The tended about twelve inches below the x the fore-wheel, and projects slightly and to its lower extremities are fast- al-levers to which secondary cranks ng with the axle are jointed. 3. A driving-wheel of the standard size, and a driving apparatus, consisting of short arms working on universal joints at the sides of the fork, to which are jointed bent levers, these being fastened at about their centers to the cranks; the part below the crank, curving back- ward until it is perpendicular to the upper part, terminates in the pedal. This is known as the 'Extraordinary.'

The refrigerator, although seemingly a simple thing, is in reality a complex structure, and embodies some of the finest results of modern mechanics, and, as ordinarily constructed, contains nearly three hundred pieces. Only the most important parts, with their principal vari- ations, need description.

The tire is of rubber, round, and of various qualities and densities, and varying in thickness from one inch for the heaviest roadster, to three-eighth inch for the lightest racer; it
is stretched about the rim and fastened for greater security with a kind of cement made for the purpose.

The rim or felloe of the wheel is either U- or V- or crescent-shaped in section, the groove being designed to hold the tire.

The spokes are of either charcoal-iron or steel wire, and are headed at the rim, from which they pass alternately to either side of the hub, where they are fastened to the flanges in one of two ways: 1. By nipples, which are pieces of steel about one inch long, having a screw cut on one end, the other taking the form of a nut; through the center of this, longitudinally, a hole is drilled, the spoke is passed through and headed, and the nipple is then screwed into the hub. 2. By screwing the spokes themselves directly into the hub.

The hub consists of the axle and the flanges; these latter are circular disks of metal about four inches in diameter in the fore-wheel, and smaller in the rear-wheel; they are firmly secured to the ends of the axle, and to them the spokes are fastened.

These parts constitute the suspension-wheel, the theory of which is, that the rim should be a perfect circle and true in its own plane, without reference to the spokes; then these latter suspend the weight at the hub from the rim, and the pull of the spokes all around preserves the circular shape of the wheel.

The bearings are of three kinds—parallel, cone, and ball. Parallel bearings are constructed with a plain axle or spindle, fitted with a plain hardened steel cylinder. Cone bearings are of two kinds: with the ends of the axle in the form of a hollow truncated cone, and the bearings beveled at their edges to fit them; or with the bearings hollowed, and cones on the axle to fit. Ball bearings consist of either a single or double row of balls, introduced between the axle and the bearing-case, substituting a rolling for a sliding friction; these balls are either in a groove continuous around the bearing, or in separate circular holes.

The fork connects the bearings of the front-wheel with the head and backbone, for which it furnishes support, and by it, through the head and handles, the front-wheel is guided and held against obstructions tending to deflect it from its course. It also takes the vertical lift and thrust of the rider when he adds strength to his weight for propulsion, and so must combine with lightness rigidity against forward, backward, lateral, and vertical strain, and the twist of turning the handles. It is usually constructed of fastened steel tubing, tapering gradually from the head to the bearings.

The head is that part above the fork which affords bearing and connections for the perch and the handles.

The perch serves to connect the other parts of the machine, and is subject to much strain. It is a round or elliptical steel tube, tapering from a point below the saddle downward to the point of bifurcation for the rear-wheel.

The saddle is small and nearly heart-shaped, with the small end foremost, and consists of a light, strong frame, over which a piece of leather is stretched taut. It is attached to the spring, which in turn is fastened to the perch immediately behind the head.

The accessories are a small oblong bag for carrying an oil-can, a wrench, and other tools;
tessed either to the head or the hub; ched to the handle-bar; a small bag long the perch just below the saddle, or baggage when touring; a luggage-assisting of a strong wire frame and ingeniously fastened to the handle-
se head; a bugle; a whistle; and s for measuring the distance covered.

dsactively American feature of the the interchangeability of parts, all le by machinery, and so made as possible with absolute accuracy.

— Baron von Drais constructed in chine consisting of two wheels, one other, connected by a bar. The for-
el was axed in a fork swiveled to

d of the bar, and bearing guide the machine. The stride the bar, propelled vances by striking his feet sound, and directed it by the handles, by turning ion of the fore-wheel.

ine was called the Draiz 1818 the Draisine, with oments, was introduced and, the next year into and Philadelphia, Boston, places in this country, time it was very popular.

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is improved Draisine, or velocipede. ears no notice was taken of it, but in Idenity.

Merchants, stidents, all classes of people, even an to use it. Riding-schools and de-
uply were opened in all the large be furor culminated in 1869, and two - the "bone-shaker," as it was popu-
lar, was a thing of the past. one-shaker" was the parent of the cycle. It had two wheels of nearly made of wood with iron tires; the ing placed midway between the An Englishman enlarged the size of wheel, and brought the saddle more ver it, and decreased the size of wheel proportionally. Another En-
vanted the suspension - wheel, and an suggested the rubber tire. All rpresentments were made in 1868. The se was imported from England into rry in 1875, and was exhibited at anal Exposition. In 1877 the first for importing bicycles was estab-

lished, and in 1878 the first American company for their manufacture was organized. There are now half a dozen manufacturers, twice as many importers, and hundreds of dealers in all parts of the country. The num-
ber of machines annually sold is regularly increasing, and in 1884 was estimated to be about six thousand. The number in use in the United States is not far from thirty thousand, exclusive of boys' machines; the number in use in Great Britain is between two and three hundred thousand. A great drawback to their use here is the poor condition of the roads, and the main body of riders is confined to the large towns and sections of the country where the roads are naturally good.
the point of support, the equilibrium of the machine and rider is maintained.

Mathematical computation has shown that, as compared with walking, a given distance can be accomplished on a bicycle in about one third of the time, and with less than one sixth of the exertion. This does not take into account rough roads, hills, nor wind, all of which affect the bicyclist more than they do the pedestrian.

The rake (the backward inclination of the fork from the perpendicular) is an important element in the construction of a bicycle. A certain amount is necessary for safety; an increase of this amount involves a disproportionate loss of energy in propelling the wheel, and a decrease diminishes the percentage of safety and renders the rider unduly liable to forward falls or "headers." It should be about 3-98 inches for a fifteen-inch wheel, varying 0.7 inch for each size larger or smaller.

Organizations.—The League of American Wheelmen is an association of bicycle and tricycle riders, and riders of other velocipedes, in the United States and Canada, organized at Newport, May 31, 1880, and having for its object "to promote the general interests of bicycling and tricycling; to assert, defend, and protect the rights of wheelmen; and to encourage and facilitate touring." Its membership is open to all amateur wheelmen of good standing (including ladies), and numbers about 5,000 riders, from nearly every section of the United States and Canada. Consols are located at all places of importance, who collect information about the condition and improvements of the roads, mishaps to wheelmen from careless or willful drivers and other causes, tours, etc., and forward it to the president.

In this way a vast amount of knowledge of the roads of the country is being collected, a subject of which heretofore comparatively little has been known. At the annual meeting of the League there are generally a parade of all the attending wheelmen in line, raced for the league championship, and a banquet. The place of meeting is in some large city, and changes from year to year. The Cyclists' Touring Club is an international organization, whose members are to be found in nearly every country in Europe, in Australia, and in America, where it has large and constantly increasing membership. The headquarters are in England. The Canadian Wheelmen's Association is an organization similar to the League of American Wheelmen, but designed exclusively for Canadian riders. Besides these three associations there are over four hundred local clubs, in all parts of the country, formed for the enjoyment of their pastime, and for promoting the use of the vehicle by the general public. The first club was formed in Boston in 1878.

Periodicals.—"Outing and the Wheelman" is an eighty-page illustrated monthly magazine, devoted to the out-door poetical and practical recreations, including bicycling and tricycling, to which it gives the leading place. There are, besides, the "Bicycling World," the successor to the "American Bicycling Journal," established by O. H. Hinsdale; the "Wheel," the "West Coast Cyclist," and the "Amateur Athlete," which is the official organ of the League of American Wheelmen and several other wheel publications.

Race-Tracks.—There are many race-tracks in this country, specially constructed for the bicycle. In-door tracks are made either of boards, smooth and closely fitted, or of concrete, and have raised corners, to prevent contact of the wheel from slipping in turning. Out-door tracks are either ordinary clay tracks, or rolled grass-tracks, or cinder-paths. The first mentioned is sufficiently well known to need no description. The grass-track is a bed of good turf with the grass cut short, and the watered and rolled to make it firm. The cinder-path is the best, and is coming into general use. One of the best of this kind is at Harvard College. It is a quarter of a mile in length, with a home-stretch and back-stretch of 150 yards straight-away, joined by semicircular ends. The width of the track is fifteen feet, and the home-stretch twenty feet. The ground is first removed to the depth of a foot at the sides, sloping to eighteen inches at the center; a blind drain, eight inches wide by five inches deep, filled with round stones, laid along the center; a layer of broken stone of a uniform depth of six inches is then laid on, and over this a layer of slag or broke granite four inches deep; then comes a layer of coarse cinders, a layer of finer cinders, and on top a thin coating of screenings. The track is then watered and rolled, a process that must be repeated frequently, to keep it in good order.

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BICYCLES AND TRICYCLES.

Records.—Some remarkable feats have been done on bicycles. The carriage road on Mount Washington has been repeatedly ridden down, and a hill in Boston nearly one third of a mile long, with a grade in some places of one foot in seven, has been climbed. The longest "straightaway" ride recorded was from San Francisco to Boston, over 3,000 miles. Two hundred miles have been done within twenty-four hours in this country, and 260½ miles within the same time in England; and 1,404 miles in six days of eighteen hours’ riding-time each, by one rider. One hundred miles have been covered inside of ten hours; and 236 miles without a rest, on an English track.

Below are two tables, the first giving the earliest American records as far as obtainable, the second giving the present records, English and American:

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Records marked * were made by professionals, the others by amateurs.

These records were all made from a still or standing start. The fastest quarter-mile, with a flying start, is 36½ s., and the fastest mile 3 min. 13½ s.

Trick-Riding.—This has been carried on to such an extent that there are professionals whose sole business is to give exhibitions of feats of this kind. Some of the most difficult and graceful of their performances are: riding with one foot on the saddle and the other on the handle; balancing, getting on and off, and climbing all over the machine while it is standing still; riding over obstructions, and up and down flights of steps; spinning around on one wheel like a top; riding with the small wheel and a portion of the backbone removed; riding with the entire backbone removed, the only points of support of the rider being the pedals and handles. Besides these, many other difficult feats are performed by both single and double trick riders.

The Tricycle.—This is a velocipede having three wheels upon the ground for support, traction, and steering. In the mechanical means for propulsion by the feet and guiding by the hands, in the arrangement of the wheels, and in other particulars of construction, it offers so many varieties that a general description is impossible. There may be two large wheels and one small one, two small wheels and one large one, or the three wheels may be all of different sizes; the small wheel may be in front or in the rear, may be in the center or
in the plane of one of the large wheels; both the driving and the steering may be done either by one or by two of the wheels. The tricycle has the same general principles of construction as the bicycle—suspension-wheel, ball-bearings, and hollow tubing frame.

A three-wheeled velocipede was used and patented in France in 1826, and since then velocipedes of this species have been more or less used, and from time to time improved. The tricycle was in use in very small numbers, both in England and the United States, prior to the introduction of the bicycle; but it is only since the successful and general use of the latter that makers have given tricycles sufficient attention to improve them, and have ventured on the expense of making them with care and accuracy. There is a species of tricycle designed to carry two, which is called a "sociable," and many of them are now in use throughout Europe, and some in this country. The tricycle requires more power to propel it, by about one-fifth, than the bicycle does, is not so speedy, nor perhaps so graceful; but it is more comfortable and safe. In this country several firms are engaged in its manufacture and importation, and its use is growing rapidly.

BLAINE, JAMES GILLSPIE, an American statesman, born at Indian Hill Farm, on Monongahela river, Washington co., Pa., Jan. 81, 1830. He is a great-grandson of Col. Ephraim Blaine, of Middlesex, Cumberland co., Pa., who was Commissary-General of the Continental army, on the staff of Gen. Washington, from 1775 till the close of the Revolutionary War. The family were a part of the colony of Scotch and Scotch-Irish Presbyterians who had settled in the Cumberland valley about 1735. His father inherited a large landed estate in western Pennsylvania, and removed to Washington county in 1810, where in 1820 he married the daughter of Neil Gillespie, a well-known Roman Catholic, a man of wealth, noted in his section for high character and ability. The education of the boy was looked after with great care by his father and his maternal grandfather, who personally conducted it to some extent themselves. He was sent to school for a time at Lancaster, Ohio, in 1841, where he lived in the family of his relative, Thomas Ewing, at that time Secretary of the Treasury. In his fortieth year he entered Washington College (Pa.), where he was graduated, the youngest member of his class except one, in September, 1847. He was awarded one of the honors of the class, and delivered at commencement the English orationary and an oration on "The Duty of an Educated American." He ranked high in mathematics and languages.

After graduation, he was an instructor for some time in the Western Military Institute of Kentucky. During this period he made the acquaintance of Miss Harriet Stanwood, the lady who became his wife, and who is the mother of a large family of sons and daughters. After leaving Kentucky, Mr. Blaine lived in Philadel-

phia for three years, where he was at
in one of the public institutions, and w
editorial writer for a considerable part
in the staff of the "Daily Inquirer." Blaine at the same time completed his
studies, which he had been pursuing ever
he left college. He had an excellent opp
ortunity in 1853 to enter the law-office of The
Cuyler (who afterward became prominent
the bar of Philadelphia), and seriously con
cluded the acceptance of this place with the
ention of pursuing the law as his profe
But he was induced by a very flattering
from Maine to remove to that State and
upon the editorial profession. He settled, t
fore, in 1854, in Augusta (Mrs. Blaine's
place), and purchased a half interest in
"Kennebec Journal." His partner was
L. Stevens, late United States Minister to
den. Mr. Blaine is gifted with an extra
ordinary memory, and, on assuming his edi
duties, rapidly familiarized himself with the
details of Maine politics by reading every
of the paper in the bound files, from Jan
1835, when it was originally established.
der his management, the paper was a
financial success and a journal of great
ence; while, both through its columns
through his personal qualities of leader Mr. Blaine became powerful in the coun
the Whig and Republican parties. From
from 1861 he edited the Portland "Advert
but still retained his residence at Augusta
In 1866 he was a delegate to the first
ational Convention of the Republican p
Philadelphia, which nominated Fre
and in 1859 he was made chairman o
Republican State Committee, which po
hold until 1880. In the same year he elect
ted to the lower house of the State l
lature. In 1864 he was elected to the house of
Augusta, on his return from Philadel
1866, in response to a request of his fr
and neighbors that he tell them about the
vention. During the canvass they beg
sparks of the project, since then he has
known as one of the most effective pol
ators in the country.

In his capacity as editor, he had calle
attention to the condition of the penal an
formatory institutions of the State, and sev
criticised their management. Thereupon
ner Morrill appointed him a commissioner
e xamine the prisons and reformatories of
States, and suggest improvements in the
main. In the discharge of this duty
Blaine visited fifteen States, and made an
orate report. Most of his recommendations were adopted, and the penal institutions of Maine were thereby greatly improved.

He retained his seat in the Legislature
1869, and in the last two years of his se
was Speaker of the House.

In 1862 he was elected to the national I
Representatives, where he held a se
successive re-elections till July, 1876,
Governor of Maine appointed him United States Senator, to fill the vacancy caused by a resignation of Hon. Lot M. Morrill. Subsequently he was elected by the Legislature, re-elected for the term ending in 1888, and in 1893, for the term ending in 1899.

In Congress he distinguished himself by his intimate knowledge of parliamentary law, his readiness in debate, his advocacy of American as opposed to foreign interests, and his loyalty to the national government. Often than almost any other member he was pitted in debate against those he had taken part in the secession movement.

In the Thirty-eighth Congress he was a member of the Committee on Post-Offices, and was instrumental in establishing postal-cars; in the thirty-ninth he was chairman of the Committee on Military Affairs; in the Forty-first he was on the Committee on Appropriations, among Mr. Blaine's more notable speeches in congress, were those on the ability of the American people to suppress the rebellion; against paying the national debt in greenbacks; in favor of resuming specie payment; against placing the Southern States under military rule with suspension of habeas corpus; on moving the political disabilities of Jefferson Davis; in advocacy of the revival of American commerce; favoring a bimetallic currency, with silver dollar of full intrinsic value with the gold dollar; upon the wrong of suppressing the stored vote in the South, and thus increasing the power of a Southern white voter over a Northern white voter; in favor of restricting Chinese immigration, because it was injurious to the free laborers of the United States.

In the Republican National Convention of 1876, held in Cincinnati, Mr. Blaine was a candidate for the presidential nomination. On the first six ballots he had the highest number of votes, but on the seventh Mr. Hayes obtained a majority. Subsequently Mr. Blaine again was a candidate for the nomination in 1880. In the convention he had 294 votes on the first ballot, against 384 for Gen. Grant and 270 for Senator Sherman; and this number did not greatly decrease till the thirty-sixth ballot, when the opponents of Grant united on Mr. Garfield and nominated him.

On the inauguration of President Garfield, March 4, 1881, Mr. Blaine was made Secretary of State. He was with the President when he was assassinated in the railroad-station in Washington, July 2, 1881, and was practically the head of the government from that date until Garfield's death in September. He retired from President Arthur's Cabinet Dec. 19, 1881, and in the same month was chosen by Congress to deliver the oration in the memorial services for the late President, Feb. 27, 1889, an oration, which proved to be one of his best efforts, may be found, in full, in the Annual Cyclopedia" for 1889, page 137.

In the National Republican Convention, held in Chicago, June 3-6, 1884, on the first ballot for a presidential candidate Mr. Blaine received 334 1/2 votes, in a total of 642; his chief competitors being President Arthur and Senators Edmunds and Logan. On the second ballot Blaine's vote rose to 349, on the third to 376, and on the fourth to 461—most of his competitors, except Arthur, having dropped out. The nomination, as usual, was at once made unanimous. Hon. John A. Logan was nominated for Vice-President. Mr. Blaine's letter of acceptance was published July 19. The following extracts show its salient points:

Revenue laws are in their very nature subject to frequent revision in order that they may be adapted to changes and modifications of trade. The Republican party is not contending for the permanency of any particular statute. The issue between the two parties does not have reference to a specific law. It is far broader and far deeper. It involves a principle of wide application and beneficial influence, against a theory which we believe to be unsound in conception and inevitably hurtful in practice. In the many tariff revisions which have been necessary for the past twenty-three years, or which may hereafter become necessary, the Republican party has maintained and will maintain the policy of protection to American industry, while our opponents insist upon a revision, which practically destroys that policy. The issue is thus distinct, well-defined, and unavoidable. The pending election may determine the fate of protection for a generation. The overthrow of the policy means a large and permanent reduction in the wages of the American laborer, besides involving the loss of vast amounts of American capital invested in manufacturing enterprises.

The agricultural interest is by far the largest in the nation and is entitled in every adjustment of revenue laws to the first consideration. Any policy hostile to the fullest development of agriculture in the United States must be abandoned. Realizing this fact, the opponents of the present system of revenue have labored earnestly to persuade the farmers of the United States that they are robbed by a protective tariff, and the effort is thus made to consolidate their vast influence in favor of free trade. But, happily, the farmers of America are intelligent, and can not be misled by sophistry when conclusive facts are before them. They see plainly that during the past twenty-four years wealth has not been in the hands of one section or another, or by one interest at the expense of another section or another interest. They see that the agricultural States have made even more rapid progress than the manufacturing States. The farmers see that in 1860 Massachusetts and Illinois had about the same wealth—between $600,000,000 and $800,000,000 each—and that in 1880 Massachusetts had advanced to $5,600,000,000, while Illinois had advanced to $3,200,000,000. They see that New Jersey and Iowa were just equal in population in 1860, and that in twenty years the wealth of New Jersey was increased by the sum of $550,000,000, while the wealth of Iowa was increased by the sum of $1,600,000,000. They see that the nine leading agricultural States of the West have grown so rapidly in prosperity that the aggregate addition to their wealth since 1860 is almost as great as the wealth of the entire country in that year. In these extraordinary developments the farmers see the helpful impulse of a home market, and they see that the financial and revenue system enacted since the Republican party came to power has established and constantly expanded the home market.

As a substitute for the industrial system which under Republican administrations has developed such extraordinary prosperity, our opponents offer a policy which is but a series of experiments, to be followed by a system of revenue—a policy whose end must be harm to our
manufactures and greater harm to our labor. Experience in the industrial and financial system is the country's greatest dread, as stability is its greatest boon. Even the uncertainty resulting from the recent tariff agitation in Congress has hurtfully affected the business of the entire country.

Any effort to unite the Southern States upon issues that are at the heart of the memories of the war will summon the Northern States to combine in the assertion of that nationality which was their inspiration in the civil struggle. And thus great energies which should be united in a common industrial development will be wasted in hurtful strife. The Democratic party shows itself a foe to Southern prosperity by always invoking and urging Southern political consolidation. Such a policy quenches the rising instinct of patriotism in the heart of the Southern youth; it rears and stimulates prejudice; it substitutes the spirit of barbaric vengeance for the love of peace, progress, and harmony.

The growth of the country has continually and necessarily enlarged the civil service, until now it includes a vast body of officers. Rules and methods of appointment which prevailed when the number was smaller have been found insufficient and impracticable, and earnest efforts have been made to separate the great mass of ministerial officers from partisan influence and personal control. Impartiality in the mode of appointment must be based on qualifications, and security of tenure to be based on faithful discharge of duty, are the two ends to be accomplished. The public business will be aided by separating the legislative branch of the Government from all control of appointments, and the executive department will be relieved by subjecting appointments to fixed rules, and thus removing them from the caprice of favoritism. But there should be rigid observance of the law which gives to the people of each State the power of selecting the officers who are to be placed in the service of the Union.

The claim of the Mormons that they are divinely authorized to practice polygamy should no more be admitted than the claim of certain heathen tribes, if they so desire, to continue the rite of human sacrifice. The law does not interfere with what a man believes, it takes cognizance only of what he does. If the citizens of the United States are entitled to the same civil rights as others, and to these they must be confined. Polygamy can never receive national sanction or toleration by the admission of the community that upholds it as a State in the Union. Like others, the Mormons must learn that the liberty of the individual is the ceaseless where the rights of society begin.

During the latter half of the canvass, Mr. Blaine addressed large audiences in his own State, and in New Hampshire, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Ohio, Michigan, Indiana, Illinois, and Wisconsin. He made public addresses continuously for forty-three days, speaking, it is said, over four hundred times in that period. The speeches were usually from ten to fifteen minutes in length. (For returns of the election, see the articles CLEVELAND, GOYER, and UNITED STATES.) After the result had been determined, he made, at his home in Augusta, a speech in which he arraigned the Democratic party for carrying the election by suppressing the Republican vote in the Southern States, and cited the figures of the returns to show that, on an average, only one half or one third as many votes had been cast for each presidential elector or member of Congress elected in the South as for each elected in the North. This speech had a startling effect, and attracted universal attention, though Mr. Blaine had set forth the same thing in a speech in Congress as long before as Dec. 11, 1878, when he said:

The issue raised before the country is not one of mere sentiment for the rights of the negro; though far distant be the day when the rights of any American citizen, however black or however pale, shall form the mere dust of the balance in any controversy.

The issue has taken a far wider range, one of portentous magnitude; and that is, whether the white voter of the North shall be equal to the white voter of the South in shaping the policy and fixing the destiny of this country; whether, in a word, it is not more boldly, the white man who fought in the ranks of the Union army shall have as weighty and infus- tial a vote in the government of the republic as the white man who fought in the ranks of the rebel army.

In Iowa and Wisconsin it takes 182,000 white people to elect a representative in the government of the State; in South Carolina, Mississippi, and Louisiana, every 60,000 white people send a Representative.

In 1884 Mr. Blaine published the first volume of a work entitled "Twenty Years of Congress," and he is understood to be now at work on the second volume. (See portrait in Vol. VI of "Annual Cyclopedia," page 738.)

BOLIVIA, an independent republic of South America. Previous to the war with Chili, Bolivia was divided into nine provinces, and the population was about 2,400,000.

Ports.—The Chilianas, in 1880, by right of conquest, seized the entire Bolivian seaboard, including the port of Cobija, Bolivia's only outlet to the ocean. By the terms of the armistice, however, the landlocked republic, in 1884, came into possession of the new port of Antofagasta, between which and the nitrate-fields of Atacama, Blanche, is line of railway is to be laid.

Government, Public Offices, etc.—The executive power resides in a President elected for four years. The position of chief magistrate, however, has hitherto been gained rather by force of arms than by the people's voice. The President is assisted in his functions by two Vice-Presidents and four Cabinet ministers appointed by himself. The legislative power is vested in a Senate and a Chamber of Deputies, the members of both being elected by universal suffrage.

The President of the Republic is Gen. Campero, inaugurated in June, 1880; the First Vice-President, Don Mariano Baptista; and the Second Vice-President, Dr. B. Salinas.

The Bolivian Envoy Extraordinary and Minister Plenipotentiary to the United States is Dr. L. Cabrera; the Bolivian Consul-General at New York is Señor M. Obarría; the Consul at New Orleans, Señor T. P. Machera; and the Consul at San Francisco, Señor F. Herrera.

The United States Minister resident at La Paz is Hon. Richard Gibbes.

Army.—The army, previous to the outbreak of the war with Chili, was commonly reported as 8,021 strong, including eight generals and 1,018 other officers. The expenditure for the department usually amounted to two thirds of the entire revenue.

* For particulars relating to area, territorial division, and population, reference may be made to the volumes of 1880 and 1886, in which latter minute details will be found.
The financial condition of Bolivia is most deplorable. Deficits covered a ruling of invariable occurrence each year. In the budget for the fiscal year 1881, the revenue and expenditure were at $3,465,790 and $4,799,225, with a consequent deficit of $1,333,435, or 1. President Campero, in his message to Congress in 1883, spoke of the revenue and expenditure as having amounted, for the fiscal year, to $2,527,015 and $3,800, respectively; adding that, to provide for future deficits of $1,778,012, "a loan would be necessary." The Congress of 1884, the Executive to raise a loan of 1 million dollars.

Toward the end of the year, the export duty on silver was reduced to 50% of the nominal value. During the year, the production of 250,000 shillings of ore gave rise to the suspicion of the famous "Silver Table" of trabeculae, or silver veins, which have been reached.

The debt of Bolivia, concerning returns have for many years impaired its credit, is set down in British credits at $30,000,000, including £2,000,000. The nominal capital of £1,700,000 ($2.5 million), negotiated in London in 1873, is now only 68% of its face value.

The exports and imports are computed at the respective average $6,000,000 and $9,000,000. Official returns are not available. But Bolivia carries trade, unburdened by taxes, through territory; and Argentine statistics Bolivian transit trade for the year are as follows: Inward, 50,000; outwards, 1,892,180. It is probable figures first above given may with some accuracy be referred to the traffic with former Peruvian port of Arica. The chief exports consist of silver, copper, coffee, bismuth copper, oil, and cacao. The main manufactured goods from the direct trade with the Argentine in 1882 were as follows: Imports, $128,588. The follow exhibits the value of the imports products and of the Bolivian exports to Great Britain during the period:

<table>
<thead>
<tr>
<th>Year</th>
<th>Imports from Great Britain</th>
<th>Exports to Great Britain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1882</td>
<td>$3,005,182</td>
<td>$2,014,975</td>
</tr>
<tr>
<td>1883</td>
<td>1,308,615</td>
<td>597,935</td>
</tr>
<tr>
<td>1884</td>
<td>1,643,525</td>
<td>334,645</td>
</tr>
<tr>
<td>1885</td>
<td>1,634,903</td>
<td>566,819</td>
</tr>
<tr>
<td>1886</td>
<td>1,694,868</td>
<td>454,015</td>
</tr>
</tbody>
</table>

The East Indian and Australian barks are represented as inferior in quality to those of Ecuador. According to Dr. Francisco Salmon's analysis, the Chalhanna bark, the best from the Bolivian bark, is valued at $120 per ton. As a proof of the superiority of the Bolivian bark, reference is made, in the table below, to the following comparative analyses by Delondre and Pelletier:

<table>
<thead>
<tr>
<th>Bark</th>
<th>Yield per 1,000 of bark</th>
<th>Peru (without outer bark)</th>
<th>Ecuador (inside bark)</th>
<th>Carabaya (outside bark)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolivian bark (from Chalhanna)</td>
<td>$120 to $125</td>
<td>10 to 12</td>
<td>15 to 20</td>
<td>15 to 20</td>
</tr>
<tr>
<td>Carabaya bark (from Chalhanna)</td>
<td>15 to 20</td>
<td>15 to 20</td>
<td>15 to 20</td>
<td>15 to 20</td>
</tr>
<tr>
<td>Cucho (red)</td>
<td>15 to 20</td>
<td>15 to 20</td>
<td>15 to 20</td>
<td>15 to 20</td>
</tr>
<tr>
<td>Huancayo (Peruvian, without outer bark)</td>
<td>20 to 25</td>
<td>20 to 25</td>
<td>20 to 25</td>
<td>20 to 25</td>
</tr>
<tr>
<td>Ecuadorian (inside bark)</td>
<td>20 to 25</td>
<td>20 to 25</td>
<td>20 to 25</td>
<td>20 to 25</td>
</tr>
<tr>
<td>Carabaya (outside bark)</td>
<td>15 to 20</td>
<td>15 to 20</td>
<td>15 to 20</td>
<td>15 to 20</td>
</tr>
<tr>
<td>Bogotá (inside bark)</td>
<td>20 to 25</td>
<td>20 to 25</td>
<td>20 to 25</td>
<td>20 to 25</td>
</tr>
<tr>
<td>Piayu (outside bark)</td>
<td>20 to 25</td>
<td>20 to 25</td>
<td>20 to 25</td>
<td>20 to 25</td>
</tr>
</tbody>
</table>
department of La Paz, yields forty-eight ounces of sulphate of quinine to the quintal (100 lbs.).

Railways.—In addition to the line between La Paz and Lake Titicaca, a new line is to be constructed between Antofagasta and the nitrate-works of Aguas Blancas, and work on another broad-gauge line between Tacna and La Paz was to be begun in the course of 1885, by Messrs. Campbell, Jones & Co., owners of the line from Arica to Tacna.

Telegraphs.—Besides the line from La Paz to the port of Chilahaya, on Lake Titicaca, a new line from Potosi to Oruro, through the Colquecha mining district, has been projected.

BOTANY. The year 1884 closes an important decade in the science of botany in America. As measured by work published, of a high order of excellence, this decade will be found to compare favorably with any preceding it, and, so far as America is concerned, it undoubtedly ranks above any other in the history of this science. As measured by new or improved methods, and extended means of instruction and investigation, it truly begins an era in this country; while in Europe there has been a steady progress and development, in this respect, in lines marked out before 1870. For the change in the mode of instruction, there were certain direct causes, notably the translation into English of certain German works. But these works are themselves linked in with a history which it is important to trace.

Influence of the Microscope.—Before the compound microscope was brought to comparative perfection, the work of describing and classifying plants from characters apparent to the eye, aided by the simple microscope, engaged the attention of botanists. The compound microscope was the means of improving work of this kind, and of opening a new field. The attention given to the development of that instrument in Italy, in the works of Retzius between 1828 and 1838, resulted in the combination of systems of lenses on sound principles, and also in their correction for spherical and chromatic aberration, so that in 1837, in London, one-eighth-inch objectives were made which are scarcely excelled by those of to-day. In 1839 Prof. Amici, one of the first to attempt the perfecting of the microscope, discovered the tubes of the germinating pollen-grain, and demonstrated the essential features of fertilization in higher plants, while the subject was more fully elucidated in 1837 by Adolphe Brongniart. In twenty years from 1828, the date of Amici's discovery, a series of brilliant papers had appeared on the structure of cells, on the anatomy, physiology, and embryology of plants, by Mohl, Schleiden, Schwann, and Robert Brown; and on the life and development of the lower cryptogamia, by the Tulasne brothers and others—all of which are classic memoirs, and lie at the foundation of all subsequent work in their departments. In addition to these, in 1851, was published Hofmeister's "Vergleichende Untersuchungen," afterward translated and brought out by the Ray Society, of London, in 1852, under the title "On the Germination, Development, and Fruiting of the Higher Cryptogamia, and the Fruiting of the Coniferae." This work takes up typical forms of liverworts, mosses, ferns, equisetums, selaginellas, and conifers, tracing the life-history of each, and recording the result by means of simple, clear descriptions, and many exquisitely drawn and engraved plates, as faithful in the story they tell as the plants themselves. But what gave unity to this admirable statement of facts was the discovery and absolute demonstration of the existence of two generations, essentially different in form and function, in the life-history of each of these plants. One generation bears the sexual organs, the other the sexual organs, of reproduction. Even the conifers are linked with the higher cryptogamia through the history of their embryological life, forming clearly the crowning group of the series. Prof. Sachs says, "This discovery is one of the most fertile in results that has ever been made in the domain of morphology and classification." A new class of facts, we see, are brought to bear on the subject last in its accessibility except through the microscope, which opened a new and almost boundless field in this as well as in other directions. Even in the description of the species of flowering plants a revolution was being slowly brought about. Previous to 1840, Decaisne, an eminent French botanist, had introduced the method of including in such descriptions, not only the external characters, but also the internal structure, such as is shown by microscopical study. This practice has been adopted by several systematic botanists since that time in drawing up the characters of the species of certain orders, as the equisetaceae, gramineae, and cypereaeacea, and the soundness of the principle will commend itself more and more, and botanists will take the broad ground of describing a flowering plant by means of its structure and life-history as well as its form, as they have already done in describing the lower plants.

Modern Instruction.—All this fundamental work on the structure and life of plants had been accompanied by almost equal activity in systematic botany proper, where former views as to the affinities of groups were greatly altered by the quantities of new material derived from the new fields opened by geographical or botanic exploration. The seed sown fell upon well-tilled and fertile soil. An old, well-settled country, long at peace, with organized systems of education culminating in universities, encouraging original work, and possessing in herbariums and libraries constantly increasing resources, was ready to receive it. Moreover, the sowers of the seed, men of singular genius, enthusiasm, and self-devotion, and in the full maturity of their powers, were present to direct and stimulate the new growth, and the older of them—Mohl, Thuret, Hofmeister,
BOTANY.

England. This first successful attempt at an orderly arrangement of a treasury of rich but unclassified material was greeted with expressions of great satisfaction. In 1878 an English translation of this work was made by A. W. Bennett. It was an imperial octavo of 860 pages, and was after the third German edition (thir of 1875), as was the French translation by Van Tieghem. But a fourth German edition had been published in 1874, and Mr. S. H. Vines has made a translation of this, which was published in 1882, with annotations and additions to bring it down to date. The first English edition of Sachs opened to the whole class of younger English-speaking botanists an unfamiliar field, attractive from the admirable work already done, stimulating in the unexplored regions presented, and it came at a favorable moment. The national government had at last turned its attention to national education, or to one feature of it, by establishing in the several States, through public-land grants, colleges where agriculture and other sciences should be taught. This caused an increased demand about 1870 for instruction in botany and kindred sciences. At about the same time with the publication of the English edition of Sachs's Text-Book of Botany, Harvard University, which has always fostered the science with a more liberal spirit than any other institution in America, expanded a department, already made eminent by the presence of Dr. Asa Gray, by the appointment of several assistant professors: In Physiology and Morphology, Prof. G. S. Goodale; in Cryptogamic Botany, Prof. W. G. Farlow, who was fresh from studies with two of the leading investigators of Europe, De Barry and Thuret; in Arboriculture, Prof. C. S. Sargent. All of these gentlemen have since been made full professors, and to-day stand at the head of their special departments in America. Mr. Sero Watson, an eminent systematic botanist, is the appointment of Curator of the Harvard University Herbarium, and besides Dr. Gray and the above-named, there are several assistants in botanical work. This generous treatment of the science by Harvard attracted as pupils the younger American botanists and teachers who were seeking improved methods of instruction, especially in the newer fields. Here, with excellent collections, a comparatively rich library, skilled instructors, and original investigators, something like the university instruction of Europe was first offered to American students. The influence of Harvard and its professors on the development of botany in America has been very great, and is proved not only by the large amount of original work done there, but in the less evident but enduring effect of practical laboratory training and the stimulus of example.

Another work published in 1874 has had a considerable share in shaping instruction in the new field of plant biology, and has been used especially as a practical model by many
teachers. This is Huxley and Martin's "Elementary Biology." One result of the publication of Sachs's in English has been to multiply elementary text-books modeled after it, to suit the needs of beginners. The first to appear was "A Text-Book of Structural and Physiological Botany," by O. W. Thomé, translated and edited by Prof. Bennett in 1877. In 1880 appeared "Botany for High Schools and Colleges," by O. E. Bessey; and in the same year an "Elementary Text-Book of Botany," by K. Prantl, translated by S. H. Vines. A still more elementary work on the same plan is "The Essentials of Botany," by C. E. Bessey (1884).

In plant physiology proper, which involves special and costly apparatus, for the purpose of original work, and also special training on the part of the experimenter, very little has been done in America, and there are only one or two universities where there is sufficiently good apparatus for repeating the more complex of the modern experiments.

Professorships.—There are professorships of botany alone at Harvard, Brown, Yale, Amherst, Cornell, the University of Pennsylvania, Ohio State University, the University of Michigan, Michigan Agricultural College, the University of Wisconsin, Iowa Agricultural College, the University of Nebraska, and at a few smaller institutions. Four fifths of these have been created within fifteen years, and more than half in the past ten years. In some of the Western institutions horticulture is added to the botanical chairs; but botany is taught much more generally and efficiently than ten years since in many schools and colleges where it is included in the chair of Natural History, and where there is often excellent botanical instruction.

In all the above-mentioned colleges, advanced courses are laid out, and in most an opportunity is given for biological study with the microscope and other appliances in the laboratory. It may be said, in passing, that the prices of microscopes have been greatly reduced within the past ten years. They are now nearly as cheap, and the stands as convenient, as those of simpler instruments.

Formerly, the general opinion prevailed in this country that "analysis" of species was the sum and substance of all laboratory work. At present, in all the better laboratories, this is made subordinate to other and better methods. The careful study of typical forms of the flowering plants, and field-work, including the collecting and preservation of specimens, are generally encouraged, however. The principal terms, in the present code of biological laboratory instruction, may be put in words as follows: 1. Carefully observe and study typical forms. 2. Describe the observation by drawing and describing the objects studied. 3. Compare different forms studied with one another.

Publications: Plant Anatomy and Physiology.—In considering the published work—especially of the past ten or fifteen years—that in the field of plant anatomy and physiology the most remarkable in respect to the additions made to our knowledge. De Bary treatise on "Comparative Anatomy of Vegetative Organs of Phanerogams and Fungi," issued in German in 1877, and in English in 1884, is by far the fullest and ablest treatise recent years. It is a discussion and classification of the so-called elementary tissues and the tissue systems formed by them. The treatise gives a considerable number of illustrations of different types of structure of the meristem of roots and stems, a subject not fully developed till recently. It will serve as a comprehensive work in vegetable anatomy for years to come. Since 1880 considerable work has been written, mostly in German, on the structure of the protoplasm in a growing cell, the kindred question of the formation of cell-wall, its structure, and its increase in face and thickness; indeed, it involved whole question of the theoretic structure of organized particles in plants, such as protoplasm, starch-grains, chlorophyll-bodies, the cell-wall. The recent work on the cell and protoplasm was begun by Schmieder in 1881 on the structure and growth of starch-grains by A. F. W. Schimper in 1891, and in Straubinger published an important paper on the "Structure and Growth of the Cell-Wall" adopting and supporting the views of the botanists just mentioned, that the structure and growth of all parts of living cells are best explained by supposing chemically united atoms to form minute particles, or "microorgans" which become aggregated by so-called "action" to form the various organized structures such as the cell-wall and various organs. Any increase in thickness of a cell-wall is asserted to take place by the addition of micelles in thin layers, one layer inside another, until starch-grains, which usually show that they are made up of concentric shells, are believed to increase in a similar manner; that is, a deposition of layers of particles over the already formed. This theory is direct; posite to the one elaborated by Nageli as counting for the number of starch-grains that he supposed starch-grains to increase by intercalation of new molecules between old ones, which are theoretically held as water surrounding them; also that the layer of the starch-grain is the oldest part of the center of the grain: the youngest: formation of new layers taking place without inward, on the theory of the collision of particles. This theory is the advanced by Sachs in his "Text-Book." The subject needs further elucidation, but weight of evidence seems to be in favor of Straubinger and Schimper.

Another investigation, chiefly of recent upon the continuity of protoplasm in the walls of cells in living tissues, by mere minute openings or pits in the walls. Th of the recent work on this was done
1880 by Tangl and Frommann; in 1883 and 1885 Russow and W. Gardiner gave additional facts; and it now amounts to a demonstration.

It is believed that this connection exists in many parts of the plant, as it has been found to exist between the cells of the bast, cells in young embryos, in young fibro-vascular bundles, and in cells at the base of the leaves of many leguminous plants, particularly those plants with either sensitive or nyctitropic leaves. As such pitted cells occur in great abundance at this point, it is thought that the sudden movement of the leaves of the sensitive-plants, when disturbed, may be due to the readiness with which the sudden shock is communicated through the connecting protoplasmic filaments to every cell at the base of the leaf-stalk, thereby causing a sufficient contraction in all the cells and the contained protoplasm, to draw the leaf downward.

In the domain of physiology proper, Pringsheim's experiments on the office of the chlorophyll-pigment in its relation to the processes of assimilation, created considerable interest from 1875 to 1881. He had a microscope and other appliances constructed purposely for the experiments, and came to the conclusion that the chlorophyll-pigment acted merely as a screen to protect from too strong light the protoplasm of the chlorophyll-body, which in reality performed the act of assimilation. This discovery was generally accepted until in 1883 T.W. Engelmann claimed that assimilation would not take place in any cell or protoplasm where the chlorophyll was absent, no matter how favorably modified the light might be. It is therefore still one of the unsolved problems.

The production of starch-grains from chlorophyll has been studied over some time, but Schimper made the important discovery in 1881 that all starch-grains, so far as examined, in parts not exposed to the light, as tubes, etc., arose from granules similar in form to chlorophyll bodies, birefringent, chlorophyll green, so that, instead of arising spontaneously in the cell, they arise always from either green or colorless corpuscles of protoplasm.

This period will always be remarkable for the appearance of a conspicuous group of Charles Darwin's works, and "Darwiniana," by other authors. Between 1875 and 1881 he published "Insectivorous Plants"; the revised edition of "Movements of Climbing Plants"; "The Effects of Cross- and Self-Fertilization"; "Different Forms of Flowers on Plants of the Same Species"; and "The Power of Movement in Plants." It is needless to say that in the field indicated by the above titles, and in general acuteness of observation and generalization, he was without a rival. The rapid appearance of these works occasioned discussion and stimulated work everywhere. In 1873 Hermann Müller's "Fertilization of Flowers by Insects" appeared in German, and in 1883 in English. It is a rich store-house of observations in this peculiar field, and invaluable to the student of these phenomena. In the death of Darwin in 1882, and of Müller in 1886, ends a period of this peculiar literature which Darwin opened in 1882 by the publication of "Variaus Contribuciones by which Orchids are Fertilized by Insects." In no other part of plant-physiology has America contributed any original work recently, but Prof. Trelease has published a series of excellent studies on fertilization by the aid of insects, which deserve mention.

Thallophytes: (1) Bacteria.—No department of botanical literature has received greater accessions in ten years than that relating to bacteria. Though these are written largely from the standpoint of pathology, nearly all the valuable papers are of interest to botanists. The first volume of Cohn's "Beiträge" was published in 1872; the second and third in 1876—79. Interest in these organisms has increased from 1872 to the present time, and papers by eminent plant-physiologists have appeared in rapid succession. Robert Koch, Nägeli, Buchner, Kühn, and many others, have published results of experiments, some of them showing wonderful patience, care, and skill. The recent work of Koch has attracted the attention of the world; for he claims to have demonstrated that malignant anthrax, tuberculosis, and cholera are each caused by a different species of Bacillus (see TRETHE Bacillina, in "Annual Cyclopaedia" for 1888). That of cholera is comma-shaped, those of anthrax and consumption rod-like, but perfectly distinct from each other, and from other forms. He has explained his laborious, careful methods of experiment, and his mode of getting pure cultures, so as to inoculate healthy subjects with undoubted organisms of the particular Bacillus. It is sufficient to say that he has convinced many medical and botanical experts of the soundness of his conclusions. But he has also met with violent criticism, although nearly all the experiments have been positive in their results, performed by his critics, are far below his own in thoroughness and completeness. He denies that tuberculosis is hereditary, but says it should be classed as a contagious disease; and that, knowing the Bacillus producing this disease and cholera, and the conditions promoting their development, it will be possible to adopt effective means to prevent the spread of such diseases.

Although it is asserted frequently that the organisms accompanying various other malignant diseases are the cause of such diseases, there is no proof in favor of this assertion anywhere nearly as adequate as that afforded by Koch in respect to the three mentioned. The botanical aspect of these investigations is chiefly confined to the question, Are these forms of bacteria, asserted to be peculiar to certain diseases, or pathogenic conditions, really distinct species of organisms, or are they only modifications of a few forms, occa-
stoned by the environment that each disease affords! Koch, with the members of the so-called Berlin school of workers, favors the first view, while the Munich school take the view of Nägeli, Pasteur, and others, that the latter statement is the correct one. In America deep interest is taken in the whole subject, and some original work has been attempted. Prof. Burrill claims to have demonstrated that the "pear blight" is caused by bacteria. His views are published in "Bulletins of the Illinois State Laboratory." In 1869 Dr. G. M. Sternberg published a translation of Magnin's "Bacteria," the best recent summary of the group. The work includes an ample bibliography. In 1883 a second edition was issued, with many of Dr. Sternberg's own experiments on yellow fever and other diseases, while serving with the United States National Board of Health.

(3) Algæ.—In the Thallophytes above bacteria there have been several important publications in Europe, increasing considerably our resources. J. G. Agardh's "Species, Genera, et Ordines Algarum," in three volumes (1876), purports to be a complete manual of the marine flora of the world. In 1876 "Notes Algologiques," and in 1879 "Etudes Physiologiques" were published; two magnificently illustrated folio volumes by two eminent authors, Bornet and Thuret. The latter volume surpasses anything ever written on algae, in the excellence of both plates and text.

In America, the "Marine Algae of New England and the Adjacent Coast," by W. G. Farlow, was published in 1881. It contains over 200 pages, and has 15 excellent plates. It describes 350 species, some being new, and is a thoroughly trustworthy manual for the region.

(3) Fungi.—Dr. Farlow's papers on fungi, appearing at intervals since 1876, and Dr. Peck's reports on fungi and other plants, in the New York State "Reports on Natural History," have helped to original work in this field in America. These have often had an economic bearing, the life-history of several fungi that occasion diseases of cultivated plants being worked out for the first time. Dr. Farlow's "Florists' Guide of the United States," and his " Enumeration of the Feroniopore of the United States," are important papers published in 1880 and 1888. Systematic collection and preservation of specimens always marks a genuine awakening of interest in a subject. The "Algæ America Borealis Exsiccate," began in 1877 by Farlow, Anderson, and Eaton; a collection of "North American Fungi" by Elia, and another by Ravenel and Coxe, both begun in 1878, are sets of dried plants mounted, correctly named, and put up in book-form for subscribers. The "Fungi" have been issued in parts of one hundred or more. The Elia collection has reached an aggregate of 1,500 species.

In Europe the most important work on fungi has been the investigation and clearing-up of the life-history of certain little-known forms. De Bary and Woronin's "Contributions to the Morphology and Physiology of Fungi," sei, Breuillard's "Investigations of Monilia," are two series of papers published at intervals, down to the present date, and are admirable illustrations of this class of work. Many similar papers of value have appeared in France and Germany, while in England, with the exception of Mr. Plowright's work on "Heterosporia of the Uredineae," the work has had more of a systematic character.

(4) Lichens.—The veteran lichenologist of North America, Prof. Tuckerman, issued his "Genera Lichenum" in 1873, and in 1880 "A Synopsis of the North American Lichens—Part I," containing descriptions of the species of three families of lichens. Each work contains between 350 and 800 pages, and the name of the author insures their high value. Recent additions to the lichenology of Europe have been voluminous indeed, but mostly poured into that vexed and turbid pool, the "Schwenderian Theory," of the algoid-fungal nature of lichens. There seems to be no prospect of any immediate settlement of the question.

Work has been done on the Characeæ by B. D. Halstead in describing all known American forms in 1879, while in the same year appeared two parts of the "Characeæ of America," a quarto work with excellent illustrations, by Dr. T. F. Allen.

Spontaneous Generation.—The theory of spontaneous generation was revived by the writings of Bastian from 1872 to 1877, but has received thorough refutation from Prof. Tyndall's work on "Floating Matter in the Air," and other essays, as Pasteur had refuted it nearly a generation before. A quotation from the latter sums up comprehensively the truth in regard to this whole question: "Man has it in his power to cause parasitic diseases to disappear off the surface of the globe, if, as we firmly believe, the doctrine of spontaneous generation is a chimera."

Higher Cryptogamia: (1) Mosses and Liverworts.—In considering the higher cryptogamia (liverworts, mosses, ferns, etc.), and the phanerogamia or flowering plants, the past decade will occupy a high place in the history of systematic botany in America. During the past year (1884) a manual of the "Hepaticæ (or Liverworts) of the United States" has been published by L. M. Underwood, bringing together the scattered literature on that subject and furnishing a basis for future work. "A Manual of the Mosses of North America," by James and Leaqueroux, was also published in 1884. It has been long expected, and takes a place long vacant by the disappearance from print of Sullivant's "Mosses," published 1856. It is invaluable, as it brings together the results of the life-long labors of Sullivant, Austin, and the editors, all of them accomplished cryptogists, and may be considered as closing the first era of American bryology. Future work will have to be done by another generation.
at's last and crowning work, the "Synopsis to the Icones Museorum," appeared, his death having occurred in 1873.

Considerable interest was manifested in 1875-76, and in 1877 was begun "Ferns of North America," by Prof. of Yale College. It was completed in two sumptuous quarto volumes, of one hundred pages of text, describing all known north of Mexico, and eighty-one plates, each of the one hundred and more species being represented. The "Flora of Kentucky" and "Etchings," are highly creditable. A Manual of "Ferns and Their Allies," by T. wood, is very useful, and contains bibliography of the work on American and allied forms. All the works above mentioned appeared between 1877 and 1883.

--BOTANY.--The period since 1870 has been particularly fruitful in the blossoming plants of North America. This is due in part to the editing of Dr. Asa Gray and his coeditors, part to the patronage of the United Government, through the several geological surveys of the Territory. In 1871 appeared the "Botany of the States Geological Exploration of the Parallel," under Clarence King. It v of the reports, a large quarto, contains 1,285 species, and illustrated with plates. The work was written by Sereno, assisted by Engelmann, Gray, Eaton, era, and included the plants of northern and Nevada. There were descriptions of species, and indeed of all species found, of over 1,100 pages, including the "Botany of the Western United States." This plan was followed in all subsequent reports on botany. The character made in connection with the States surveys. In 1874 appeared The "Ferns of the Floras of the United States," by Porter and Coulter, a part of the "Flora of the United States," published in 1878. It was written by Prof. Rothrock, Watson, Eaton, and other eminent botanists, and included the territory of south and south-western states, and portions of California, New Mexico, and Arizona; 1,667 species, with 80 plates, 27 of the being of new species. In addition to these published two large quarto volumes the "Cretaceous and Tertiary Fossil Flora of the Territories," a part of the Hayden appearing in 1874 and 1875. In 1876 appeared vol. i, and in 1880 vol. ii "Botany of California," the most elaborate complete State flora yet published. With the exception of "The Flora of the West" no others can compare with it, either in publication, either in the description of existing plants, ferns, and mosses of California, and often of Oregon. The first volume was by Brewer, Watson, and Gray, the second by Watson alone. This work was begun under the patronage of the State Geological Survey of California, but the State having abandoned it, it was finally printed by the private subscription of the following named gentlemen: Leland Stanford, D. O. Mills, J. C. Flood, L. Tevis, Charles McLoughlin, R. B. Woodward, W. Norris, John O. Earl, Henry Pierce, Oliver Eldridge, S. C. Hastings, and Charles Crocker. The foregoing account of this prolific period proves that government or private patronage is absolutely necessary to the development of the best scientific work. During this period had appeared, as No. 238 of the Smithsonian Miscellaneous Collections, Sereno Watson's "Bibliographical Index of North American Botany," vol. i being a revised synonymy of the Polytopa, and a work of nearly five hundred pages. The other volumes will appear by the time that Dr. Asa Gray's "Flora of North America" is completed. The latter work, begun in 1880 and 1840 by the publication of two volumes by Torrey and Gray, was abandoned on account of the vast region of North America then unexplored, from which collections, rich in new species, were coming in at intervals. Over the great quantity of material that has continued to pour into the Harvard University herbarium for forty years, Dr. Gray has labored, besides publishing text-books, writing reviews, and conducting class-work. Papers on the plants of the great plains and the Rocky Mountains have appeared in almost every volume of the "Proceedings of the American Academy" since 1850, and his hand was seen in the "Botany of the Pacific Railroad Survey." Finally, in 1878, appeared one part of nearly 300 pages, of the "Synoptical Flora of North America." In 1884 appeared a similar part. Those two parts describe all the Gamopetals north of Mexico. We may expect the three remaining parts to appear within a few years, making altogether two volumes of about 1,200 pages each, and including descriptions of all North American plants, from the Ranunculacea to the vascular Cryptogamia, inclusive. Besides the publications mentioned, Dr. Gray has found time to plan a new series of textbooks in botany, and to bring out vol. i in 1879. It is entitled "Structural Botany," containing 440 pages, and is an extension, and practically a sixth edition of a previous work so named. Vol. ii, on "Physiological Botany," will be brought out by Prof. Goodale; vol. iii, "Cryptogamic Botany," by Prof. Farlow; vol. iv, "Systematic and Economic Botany," by Dr. Gray himself. These three volumes are yet unpublished.

Of other important American works, we might mention the appearance of Prof. McClintock's "Elementary Botany" in 1883, and also, in the same year, Prof. Kellogg's "Elements of Botany," two text-books sugg-
gesting in their plan Dr. Gray’s rather than Sachs’s as their model. Chapman’s “Flora of the Southern United States east of the Mississippi River” was republished in 1888, with additions up to date, leaving no considerable portion of the United States, excepting Texas and Louisiana, and the Montana and Wyoming regions, without a special flora.

In other lands this era will be distinguished by the completion of several great works, particularly the “Flora of Australia,” by F. von Müller, finished in ten volumes about 1877; the “Flora Orientalis,” by E. Boissier, covering the Orient from Greece and Egypt to India, and finished in five volumes in 1884.

The great modern work on systematic botany, Bentham and Hooker’s “Genera Plantarum,” in three large volumes, was begun in 1852 and finished in 1888. This will serve as a guide in this work for the next thirty or forty years probably. Some of the great floras, like the “Flora Brasiliensis,” the “Flora of British India,” the botanical part of the “Botanica Americana Centralsis” (Flora of Central America), can only report progress.

**Fossil Botany.**—In botanical geography and the distribution of species, the most important works of recent years are those in fossil botany. Lepechin’s volumes on the “Cretaceous and Tertiary Floras of the Territorial” have been supplemented by Heer’s magnificent work, “Flora Fossilis Arctica,” in seven volumes, the last published in 1883, just before the author’s death. This work has abundantly confirmed Dr. Gray’s opinion, formed in 1856, before any except the meager fragments of these discoveries were known, that a mild climate reigned in the latitude of Behring Strait in the Tertiary, allowing the intermingling of North American and Asiatic types of plants, and that subsequent glaciation drove these types southward, and those suited to the same climates of eastern Asia and eastern North America survived thus existing in two widely separated regions remarkably similar floras, the species being not infrequently identical. Heer’s latest volume records a fossil palm in Greenland, and concludes that the mean annual temperature for that latitude in the Tertiary Mioceene was between 10° and 11° centigrade. The present flora of North America had its origin not later than the middle of the Cretaceous, where, as well as more abundantly in the Tertiary, are found many fossil species, either identical with living, or near enough to be their immediate ancestors.

**Mycologia.**—Several works of a general character, but of the highest value, have appeared in France. One, translated into English in 1878, was Le Maout and Decaisne’s “Descriptive and Analytic Botany,” a general review of all orders of plants, and copiously illustrated; another, in 1880, by Alphonse de Candolle, “La Physiographie,” gives a philosophical review of the art of describing and studying plants; another, in 1883, by the same author, on “L’Origine des Plantes Cultivées,” gives the results of life-long attention to this subject. Every year brings out important works. The publication of Strasburger’s “Botanische Praxestum,” within a few months, and the announcement of a new work by De Bary, “Comparative Morphology and Biology of Fungi, Myxomycetes, and Bacteria,” are only a few instances. A “Journal of Mycology” (Fungi) will be started in America in 1888. Similar journals have existed in England, Germany, France, and Italy, for some years.

**Brazil.**—An empire of South America, the only monarchy in the Western Hemisphere.

**Boundary Questions.**—The only questions of limits now pending between the Brazilian empire and other countries are those with Colombia, France, and the Argentine Republic. Numerous attempts have been made to effect a settlement of the first by diplomatic means. The last, involving the persistent claim of Brazil to the Misiones Territory, has of late given rise to apprehensions of an ultimate appeal to arms. “The Argentine Government is continuously receiving supplies of arms of modern invention,” writes a Rio journalist. “Is it merely for ostentation that the republic is making such considerable outlay? Her obstinate persistence in the question of limits must of necessity add to the delay consequent upon the action of the commission appointed for the study of boundaries. Should we not look forward to the natural consequences of a demand so contrary to justice and right? Let us not deceive ourselves; our situation is neither entirely advantageous nor exempt from danger. Our first and most important need, in case of war, is the horse—the Argentine Republic is our market—and our cavalry is at present dismounted.” The old boundary question with France, relating to the undefined dividing-line between French Guiana and Brazil, has now assumed a new phase, the French Government having sent out (in 1884) a scientific exploring expedition for the purpose of studying the natural condition and capabilities of the great Amazonas region, with a view to the extension of commerce between the two countries, and not territorial conquest.

**Area, Territorial Divisions, Population, etc.**—With an area of over 3,300,000 square miles (nearly two fifths of the total area of the Southern Continent), Brazil is divided into twenty provinces and one neutral municipality, which, with their respective populations (as estimated at the end of 1883), are as follow: *

<table>
<thead>
<tr>
<th>Provinces</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alagoas</td>
<td>857,879</td>
</tr>
<tr>
<td>Amazonas</td>
<td>93,947</td>
</tr>
<tr>
<td>Bahia</td>
<td>1,452,646</td>
</tr>
<tr>
<td>Ceara</td>
<td>727,000</td>
</tr>
<tr>
<td>Espirito Santo</td>
<td>191,717</td>
</tr>
<tr>
<td>Goyaz</td>
<td>131,711</td>
</tr>
<tr>
<td>Maranhao</td>
<td>450,006</td>
</tr>
<tr>
<td>Matto-Grosso</td>
<td>88,093</td>
</tr>
</tbody>
</table>

* Elaborate statements concerning area, territorial divisions, population, etc., may be found in the volumes for 1873 and 1878.
## Brazil

<table>
<thead>
<tr>
<th>Region</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rio de Janeiro</td>
<td>668,831</td>
</tr>
<tr>
<td>São Paulo</td>
<td>325,657</td>
</tr>
<tr>
<td>Minas Gerais</td>
<td>1,041,700</td>
</tr>
<tr>
<td>São Paulo</td>
<td>1,004,300</td>
</tr>
<tr>
<td>Bahia</td>
<td>891,048</td>
</tr>
<tr>
<td>Pernambuco</td>
<td>821,118</td>
</tr>
<tr>
<td>Alagoas</td>
<td>811,178</td>
</tr>
<tr>
<td>Total</td>
<td>12,007,978</td>
</tr>
</tbody>
</table>

The ratio of male to female was about 5:80 to 6:70 males. With respect to race, proportions were approximately as follows: blacks, 45,67; mulattoes, 92,79; whites, 32,17. Of these, 55% were Portuguese, 35% Spaniards, 10% German, and 5% of other nationalities. Free blacks are no longer given to immigrants; but those arriving may board and lodging at Government expense, and are forwarded free of charge to such colonies as they may desire to join. About 500 arrived at this way in 1899. The desire is to import farm laborers, three or five year contracts, at the rate of $2 per month and board, for men, and $1.50 for women. As for emancipated, they are still only a small proportion of the total population. The emancipation was set free 22,600, of whom 1,805 by the Imperial Government. The Province of Amazonas was occupied in 1884. The grand abolition movement is daily growing more and more popular, and has come to be the chief concern in all classes of society. The great project, on being presented by the Government, passed its first reading, amid a scene of uproarious clamoring, by a small majority, and was submitted for report to committees. The report of these, and proposed modifications, were to be brought before the House on July 30, 1894, and the ministry had repeatedly declared they would stand or fall by that project alone, declining all challenges and votes of confidence upon any other point. But as the opposition perceived the inexpediency of defeating the Government and facing their constituents direct upon that issue, a powerful combination was organized with the view of securing a defeat before the presentation of the bill in its modified form, and this was accomplished on the 28th by a majority of seven upon a minor point of votes of supply. This little victory for the opposition, however, led to their ultimate and complete discomfiture, for the Emperor, at the request of the president of the council, and in the exercise of his prerogative, signed the decree dissolving the Camera on the night of the 29th. The chief of the Cabinet, on the 81st, proposed to the House that they should continue until the votes of supplies should be all sanctioned, which proposal they readily accepted. The Cabinet virtually dissolved, sitting only to vote supplies, powerless even to make reference to any other question; such was the situation of the would-be victorious opposition, whose absurd obstruction, together with its own keen foresight and skillful maneuvers, strengthened the premier's position beyond all precedent, and assisted him to immortalize his name as the champion of abolition. The result of the ensuing election was looked forward to with only moderate hope. Of the decision, not of a mere contest between Liberals and Conservatives, but of a death-struggle between slavery and abolition, between labor and capital under the worst aspect of each; between justice and injustice; between right and wrong.

### Government
The Emperor is Dom Pedro II, born December 2, 1825; proclaimed April 7, 1881; regent until July 30, 1894; crowned July 18, 1841; married September 4, 1842, to Theresa Christina Maria, daughter of the late King Francis I of the Two Sicilies.

The Cabinet, of June 6, 1884, was composed of the following ministers: President of the Council and Minister of Finance, Senator; Minister of State, M. P. de Sousa Dantas; Interior, Senator P. Franco de Sá; Justice, Deputy J. da Matta Machado; War, Deputy C. L. M. de Oliveira; Navy, Senator Admiral J. R. de Lamas; Commerce, Agriculture, and Public Works, Deputy A. Carneiro da Rocha. The Council of State comprised, besides the

The President of the Senate, which comprises fifty-eight members elected for life, was Councilor Baron de Cotegipe; and the Vice-President, Count de Baependy.

The President of the Chamber of Deputies, which is composed of one hundred and twenty-two members elected for a term of four years, was Councilor A. M. de Barros; and the Vice-President, M. A. de Araújo.

The presidents of the several provinces were as follow: Alagoas, Dr. H. M. Salles; Amazonas, Dr. J. J. Ferreira; Bahia, Councilor J. R. Chaves; Ceará, Dr. C. H. B. Ottoni; Espirito Santo, Dr. J. J. Affonso Alves; Goias, Dr. C. A. M. de Brito; Maranhão, Baron Grajau; Matto Grosso, Baron Bacovi; Minas Geraes, Dr. A. G. Chaves; Pará, Councilor J. Silveira de Souza; Paráhyba, Dr. J. A. do Nascimento; Paraná, Dr. A. M. de Oliveira; Pernambuco, Dr. J. M. de Freitas; Piauí, Dr. E. A. Victorio de Costa; Rio Grande do Norte, Dr. F. P. Salles; Rio de Janeiro, Dr. J. L. de Godoy Vasconcellos; Santa Catharina, Dr. F. L. da Gama Rosa; São Paulo, Dr. O. J. Paula de Andrade; São Pedro (or Rio Grande do Sul), Councilor J. J. d'Albuquerque; Sergipe, Dr. F. G. C. Barreto.

Church Dignitaries.—The Rt. Rev. L. A. de Santos (1880) is Archbishop of Bahia and Primate of all Brazil; and there are eleven bishops, namely, those of Belém, or Pará, São Luiz, Fortaleza, Olinda, Rio de Janeiro, São Paulo, Porto Alegre, Mariana, Diamantina, Goias, and Ouyahá.

Diplomatic Corps.—The Brazilian Minister Plenipotentiary and Envoy Extraordinary to the United States is Councilor F. Lopez Netto; and the Consul General of Brazil at New York for the Union is Dr. Salvador Mendonça.

The United States Envoy Extraordinary and Minister Plenipotentiary to Brazil is Hon. T. A. Osborn; and the United States Consul General at Rio de Janeiro is Mr. C. O. Andrews.

Army.—The actual strength of the army in 1884 was 12,784, including 1,900 officers of all ranks. The war strength was fixed at 30,000. The state of the several armies was as follows: Cavalry, 5 regiments, 2 corps of chasseurs, of 5 companies each, and 1 garrison squadron and 5 companies; infantry, 21 battalions, 9 garrison companies, and 1 depot company for drill; artillery, 8 regiments of horse, and 4 battalions of foot; sappers, 1 battalion.

The gendarmerie corps comprises 1,068 of whom are at Rio.

Navy.—The navy, in 1888, consists of steam-vessels (7 ironclads, 1 frigate, 16 gunboats, 2 transports), and sloop-the-line, with an aggregate of 8,148 a total armament of 128 guns. The sides, one school-ship; and, in course of construction, one ironclad and five gumbel. The personnel of the navy consists of general staff-officers, 385 first-class sanitary corps of 68 men, 91 accou-guardsians, and 161 engineers; an iron pipe corps, 2,922 strong; a naval brass 450 men, and 1,580 apprentices; totalling the naval arsenal at Rio de Janeiro, Pernambuco, and Bahia, there are the province of Matto-Grosso.

Education.—The primary branches instruction in the capital are control Imperial Government, and in the provincial the Provincial Assemblies; and priman is gratuitous throughout the compulsory in some of the provinces, a conspensive service, as an ensment depends on the expense. The secondary schools numbered 5,724 at an attendance of 188,848, again 1874. The higher branches of the arts, sciences, law, etc., are numerous colleges and special schools it sal and other chief cities.

Finances.—The redeeming feature financial policy is punctuality in matter of interest on the foreign br national debt, and on that circumstance rests the empire's credit in Europe; though that punctuality is attained: pence of credit at home. The invaria of expenditures over receipts, which ity enhanced during the Paraguay the disastrous northern famine of 1886, deficit, to be covered by the issue at home and abroad, and the impost pressive duties on exports and import undue taxation of lands, house-rent, transfer of property, etc.

The foreign debt, according to the Minister of Finance, amounted, i ter, 1899, to £15,002,500, which, by of the 1883 loan (£4,599,000), was in £19,002,000; or, less the interest e year last named, to £19,052,000. ternal consolidated debt amounted, in 188, to 407,823,000 milreis, inclu pep cent. loan of 1879, virtually tran Europe. But at that date the Govern no liabilities as follow: deposits of 57,138,470 milreis; treasury bills, 44 paper money, 188,041,080; constitut home debt of 169,662,650 milreis, e at the then current rate of exchange 885,000, which, added to the foreignment, makes an aggregate nati of £81,869,000. In these figures s included the provincial debts, often s
determine serious crises. The following table, prepared from official returns, exhibits the state of Brazil’s foreign loans on Nov. 1, 1888:

<table>
<thead>
<tr>
<th>REQURED IN</th>
<th>Original amount.</th>
<th>Balance, Nov. 1, 1888.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1868</td>
<td>£1,275,000</td>
<td>£219,000</td>
</tr>
<tr>
<td>1874</td>
<td>£3,500,000</td>
<td>£420,000</td>
</tr>
<tr>
<td>1876</td>
<td>£4,000,000</td>
<td>£220,000</td>
</tr>
<tr>
<td>1877</td>
<td>£4,000,000</td>
<td>£220,000</td>
</tr>
<tr>
<td>1878</td>
<td>£2,000,000</td>
<td>£500,000</td>
</tr>
<tr>
<td>1880</td>
<td>£2,000,000</td>
<td>£500,000</td>
</tr>
<tr>
<td>1882</td>
<td>£2,000,000</td>
<td>£500,000</td>
</tr>
<tr>
<td>Totals</td>
<td>£22,110,400</td>
<td>£12,054,000</td>
</tr>
</tbody>
</table>

All these loans were contracted through the Rothschilds of London, and on the security of “all the resources of the empire.” The 1888 loan, at 4½ per cent, for £24,000,000, the price of emission being £59 per £100, is to be redeemed by a sinking fund of one per cent per annum, dating from June 1, 1884. In the case of this, as of the earlier loans, the sinking fund of one per cent, is to be applied by purchase of bonds in the market when the price is under par, and, when at or over par, by drawings by lot.

The national revenue and expenditure for the fiscal year 1881–82 were 181,888,964 and 189,-470,648 milreis, respectively; deficit, 7,488,684 milreis.

The budget estimates for 1888–89 imply a surplus of 1,390,840 and those for 1885–86 a surplus of 5,104,182 milreis. The Minister of Finance divides the possibility of a saving of 4,000,000 milreis in the ordinary expenditures, and of a further economy of 8,000,000 by converting the six per cent. home debt into a five per cent. debt, leaving only about 75,000,000 to be provided for by taxation, to establish an equilibrium of revenue and expenditure. Part of the necessary increase of revenue may, he thinks, be obtained by putting a tax on cultivated land and on railroads and navigable rivers; another on transfers of movables; taxes on tobacco and some other articles; by adjusting and extending the taxes on trades and professions, and by increasing the duties on foreign articles of luxury, while reducing those articles necessary to the poor.

Commerce.—Concerning this department, no more recent returns, of a general character, are at this writing available than those given in the volume for 1885. A significant remark may, however, prove opportune in this place, namely, that in the case of Brazil, as of most of the other countries of Latin America, the balance of trade with the United States is constantly against the last; and accounts have, of course, to be settled mainly “by payments by us, or by exchange through London.” The following observations, from the pen of Dr. Baldwin Martyn, the Brazilian consul-general in New York, will be found interesting in this connection: “The balance of trade between this country and Brazil is against the United States. The balance, in favor of Brazil, for the twenty-one years ending 1879, amounted to $443,827,884. During the same period the commerce between England and Brazil gave a balance of $15,104,579 in favor of the former; while France, during the same period, had a balance in her favor of $38,099,-300. The British exports to Brazil were of the value of $316,868,716; those of France, $353,263,900; and those of the United States only $182,283,924. Most of the Brazilian foreign trade is with England, and the fault lies with the United States, which might easily monopolize that commerce if her merchants but acted as they ought. All that is required is frequent and rapid steam communication between the two countries. The United States and Brazil Company has good steamers, but they only run every six weeks. Brazilian coffee is brought to New York in British bottoms, and paid for in London, and thereby Brazil purchases in England commodities which, under other circumstances, she would buy in the United States. By acting at once as buyer and carrier, England levies a tax of 12½ per cent. on the trade between the United States and Brazil. This being the chief market for Brazilian coffee, Brazilian merchants would willingly take, in exchange for that article, manufactured goods, machinery, and all other products which this country could supply. Another need is direct telegraphic communication between the two nations. The British Cable Company declared last year a dividend of 14 per cent. on a capital of $8,000,000, and one half of that profit was derived from transactions with the United States. Trinidad is already united by telegraph with this country, and that island is but twenty-four miles distant from the coast of South America. By means of a cable 1,000 miles long, parallel with and close to the coast, the Brazilian system could be linked to the land-lines, and telegraphic communication thus be opened up between Brazil and the United States. That line could be completed and worked by a company having a capital of $1,000,000, and such a company is at this moment being organized.

Brazil claims to possess 500,000,000 coffee-shrubs, covering upward of 2,000,000 acres of land, about 400 shrubs being planted to each acre. The average yield of each shrub is one pound of marketable coffee per annum. The coffee industry of the empire affords employment for 800,000 persons, for the most part slaves.

Shipping.—The shipping movements at the various ports of Brazil, in the year 1888, were as follows:

| CARGO TRADE | | | |
|-------------|------------------|------------------------|
| RETURNED    | 1,115 craft, with an aggregate of 1,100,252 tons. | CLEARED: 1,087 craft, with an aggregate of 1,077,581 tons. |
| COASTING TRADE | | | |
| RETURNED    | 1,114 craft, with an aggregate of 654,798 tons. | CLEARED: 1,088 craft, with an aggregate of 649,961 tons. |

Besides the three steamers of the United States and Brazil Mail Steamship Line, under contract with the Imperial Government, others
run between New York and Rio Janeiro, via St. Thomas, Pará, Pernambuco, and Bahia.

The contract of September 8, 1881, with the Société Portale Française de l'Atlantique, for a line of steamships between Rio de Janeiro and Halifax, was rescinded, at the request of the company, on June 9, 1883. In the eight round trips made by the vessels of this line, but 58 passengers had been carried, and 43,119 packages, at an expense of $327,765, while the receipts, exclusive of the Brazilian subsidy, amounted to but $15,570. The following companies receive subsidies: Amazon Steam Navigation Company, limited, with 51 vessels, performing 48 round trips annually, viz., 13 on the Rio Pará, between Manãos and Hy-panahana: aggregate distance, 80,758 miles; 12 on the Rio Madeira, between Manãos and Santo Antonio: aggregate distance, 28,664 miles; 12 on the Rio Negro, between Manãos and Santa Isabel: total, 12,712 miles; and 12 on the Solimões (Upper Amazon), between Manãos and Iquitos (Peru): total, 81,948 miles; the

Companhia Brasileira de Navegação por Vapor, for 36 round trips annually between Rio and Pará, and the principal intermediate ports; the Companhia Nacional de Navegação por Vapor, for 58 annual trips between Rio and Monte-video, and Buenos Ayres; the Companhia Es-pirito Santo e Cacauellas, for 12 annual trips between these two ports, and as many between the first and São Matheus; the Companhia de Navegação costa e fluvial do Maranhão, for 24 annual trips between São Luiz and Fortaleza, southward, and 12 northward between São Luiz and V吉利e; the Companhia Paulista, for five monthly trips between Rio and São Francisco; and companies running steamers on the rivers Iguaçu and Negro, and the Upper Paraguay.

RAILWAYS.—At the end of 1888 there were 5,619 miles of railway in operation, and 2,736 miles in course of construction; total, 8,356 miles. Several of the lines are owned and controlled by the state. Here follows a list of the Government railways:

<table>
<thead>
<tr>
<th>PROVINCES, ETC.</th>
<th>Length in Kilometers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In operation</td>
</tr>
<tr>
<td>Ceará</td>
<td></td>
</tr>
<tr>
<td>Baturita</td>
<td>109</td>
</tr>
<tr>
<td>Caicó to Sobral</td>
<td>139</td>
</tr>
<tr>
<td>Pernambuco</td>
<td></td>
</tr>
<tr>
<td>Extension of the Recife-Palmares line</td>
<td>89</td>
</tr>
<tr>
<td>Recife to Sáo Paulo</td>
<td>111</td>
</tr>
<tr>
<td>Recife to Cornado</td>
<td>116</td>
</tr>
<tr>
<td>Alagoas</td>
<td></td>
</tr>
<tr>
<td>Peixe</td>
<td>235</td>
</tr>
<tr>
<td>Alagoas to Sáo Cristóvão</td>
<td>9</td>
</tr>
<tr>
<td>Bahia</td>
<td></td>
</tr>
<tr>
<td>Extension of the Bahia-Alagoas line</td>
<td>147</td>
</tr>
<tr>
<td>Neutral municipality</td>
<td>34</td>
</tr>
<tr>
<td>Dom Pedro II</td>
<td>452</td>
</tr>
<tr>
<td>Gama do branch</td>
<td>5</td>
</tr>
<tr>
<td>Campina branch</td>
<td>5</td>
</tr>
<tr>
<td>Santa Cruz branch</td>
<td>80</td>
</tr>
<tr>
<td>Maceió branch</td>
<td>5</td>
</tr>
<tr>
<td>Rio de Janeiro</td>
<td>200</td>
</tr>
<tr>
<td>Rio Grande do Sul</td>
<td>150</td>
</tr>
<tr>
<td>Taquara to Uaupés</td>
<td></td>
</tr>
</tbody>
</table>

In the subjoined table are enumerated other lines, not the property of the state, but with a percentage of interest guaranteed by the Government on a fixed capital.

<table>
<thead>
<tr>
<th>PROVINCES</th>
<th>Length in Kilometers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In operation</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Pernambuco</td>
<td></td>
</tr>
<tr>
<td>Recife to Palmares</td>
<td></td>
</tr>
<tr>
<td>Sáo Paulo</td>
<td></td>
</tr>
<tr>
<td>Baturita</td>
<td></td>
</tr>
<tr>
<td>Sáo Cristóvão</td>
<td></td>
</tr>
<tr>
<td>Alagoas</td>
<td></td>
</tr>
<tr>
<td>Uaupés</td>
<td></td>
</tr>
<tr>
<td>Rio Grande do Norte</td>
<td></td>
</tr>
<tr>
<td>Pará</td>
<td></td>
</tr>
<tr>
<td>Ceará</td>
<td></td>
</tr>
<tr>
<td>Alagoas</td>
<td></td>
</tr>
<tr>
<td>Uaupés</td>
<td></td>
</tr>
<tr>
<td>Rio Grande do Sul</td>
<td></td>
</tr>
<tr>
<td>Minas Gerais</td>
<td></td>
</tr>
<tr>
<td>Minas Gerais</td>
<td></td>
</tr>
<tr>
<td>Minas e Rio</td>
<td></td>
</tr>
</tbody>
</table>

Grand totals       | 1,247 | 8,008

The length is in kilometres, the capital in millions, and the Government's guaranteed percentage of interest.
ines neither owned nor guaranteed by the government, there were, at the beginning of 1887, 2,870 kilometres, and in construction, 567; total, 3,137 kilometres.

Telegraphy.—There were in the empire, at the 1888, 4,967 miles of telegraph, with 189 and the number of dispatches transmitted during the year 1888–89 was 338,063.

Telegraphic communication with the Union Republic, via Uruguay, where Argentine and Brazilian wires connect, was established February 2, 1888. Telegraphic communication with the Eastern Hemisphere is carried through the offices of the Brazilian Submarine Telegraph Company, Limited. The concessions in favor of the American Telegraph Company were declared lapsed, by decree, bearing date August 18, 1885, the same date, permission was granted American citizens, Henry Cummins, D. Roberts, and George S. Cox to open communication, by one or more submarine lines, with the United States, the concession in force for twenty years, during the period the Imperial Government could action the laying of any other between and the United States.

Bulgaria.—The telephone was introduced into de Janeiro in 1888, and in January, concessions were granted for the establishment of telephonic communication in the São Paulo and Campinas.

The number of letters, etc., that through this department, in 1888—89, 767,325, against 55,546,589 for the year 1887, preceding. The receipts of the department, for the same year, 1888—89, amount to 220,182 milres, while the expenditure, 1,860,264. Deficits are the rule in the Post-Office Department, as may be seen from the following table of receipts and deficits for the decade beginning with 4:

<table>
<thead>
<tr>
<th>Year</th>
<th>Receipts</th>
<th>Expenditure</th>
<th>Deficit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1887</td>
<td>$27,693</td>
<td>$25,112</td>
<td>$2,581</td>
</tr>
<tr>
<td>1888</td>
<td>115,197</td>
<td>117,612</td>
<td>$2,415</td>
</tr>
<tr>
<td>1889</td>
<td>134,997</td>
<td>130,564</td>
<td>4,433</td>
</tr>
<tr>
<td>1890</td>
<td>127,329</td>
<td>129,002</td>
<td>$1,673</td>
</tr>
<tr>
<td>1891</td>
<td>134,997</td>
<td>130,564</td>
<td>4,433</td>
</tr>
<tr>
<td>1892</td>
<td>134,997</td>
<td>130,564</td>
<td>4,433</td>
</tr>
<tr>
<td>1893</td>
<td>134,997</td>
<td>130,564</td>
<td>4,433</td>
</tr>
<tr>
<td>1894</td>
<td>134,997</td>
<td>130,564</td>
<td>4,433</td>
</tr>
<tr>
<td>1895</td>
<td>134,997</td>
<td>130,564</td>
<td>4,433</td>
</tr>
<tr>
<td>1896</td>
<td>134,997</td>
<td>130,564</td>
<td>4,433</td>
</tr>
</tbody>
</table>

ISH COLUMBIA. See DOMINION OF CANADA.

BULGARIA. 101

Alexander I. of the grand ducal house of Hesse, in the cadet line of Hesse, in 1881, with the sanction of a Grand Soberanie or Constituent Assembly, the Prince assumed extraordinary legislative powers for seven years. On Sept. 20, 1883, when he restored representative government, he appointed the following ministers: President of the Council and Minister of the Interior, Zankoff; Minister of Finance, Natchevich; Minister of Foreign Affairs, Balabanoff; Minister of Justice, Stoiloff; Minister of Public Works, Kik-lionoff; Minister of Public Instruction, Malhoff; Minister of War, Lieut.-Col. Kotelnikoff.

Area and Population.—The area of the principality is 63,972 square kilometres. The population, as determined in the census of Jan. 1, 1881, was 1,998,988. As regards religion, 68·8 per cent. were Christians, 30·7 per cent. Mohammedans, and 9·5 per cent. Israelites; in respect to nationality, 66·7 per cent. were Bulgarians, 28·6 per cent. Turks, and 2·7 per cent. other nationalities. In 1888 the immigration of the Mohammedan element recommenced on a large scale. The capital, Sofia, contained 20,641 inhabitants; Rustchuk, 26,887; Varna, 24,649; Shumen, 22,021.

Commerce.—The total imports in 1881 amounted to 58,467,100 francs, in 1880 to 48,223,687 francs; the exports in 1881 to 81,819,900 francs, in 1880 to 83,118,300 francs. The leading article of export is grain. Wool, tallow, hides, and timber are also exported. The principal imports are textile manufactures, iron, and coal. The only line of railroad completed runs between Varna and Rustchuk, 224 kilometres. The state has 2,408 kilometres of telegraph lines in operation.

The Army.—The army law of 1879 compels every Bulgarian to serve twelve years in the army, four each in the active army, the reserve, and the Landwehr. The period of active service has been shortened to two years in order to form a reserve. The peace effective is 17,670 men. In case of war a field army of 30,000 troops can be raised.

Politics and Legislation.—When the restoration of the Constitution of Tarnova was proclaimed in September, 1888, the Extraordinary Sobranje, elected in December, 1882, was clothed with full legislative powers. Its term came to an end in January, 1894. Most of the work of the Soboleff-Kaulbars ministry was recast. The war budget was cut down by four million francs. It was enacted that at least two companies in every druzina should be officered by Bulgarians, a measure that necessitated the recall of all the Bulgarian officers attached to the Russian army.

The fusion between the Conservative and Liberal party having accomplished its object, the overthrow of the Russian ministers, the two Conservative members of the Cabinet, Stoiloff and Natchevich, retired. Their successors, Pominoff and Sarafoff, were now to office. The difficulty with the Russian Gov-
overnment respecting the control of the Bulgarian army was arranged by accepting another Russian officer, Prince Cantacuzeno, as Minister of War. After the withdrawal of the Conservative ministers the division between the Moderate Liberals and the Radicals was accentuated by the refusal of the Government to accept the co-operation of the latter, and admit the leader of the latter into the Cabinet. The Russian agent, Jokin, strove to effect in this way the unity of the Liberal party. Zankoff, who enjoyed great popularity upon entering office as a martyr of liberty, the champion of the Constitution, and the savior of the country from foreign domination, sank in favor with the people through his approval of an early revision of the Constitution and through a somewhat arbitrary administration, in which some of its provisions were slighted. In his relations with Russian representatives he did not preserve the independence that was expected. By resorting to repressive acts against his opponents he incurred positive odium. An alliance with the Conservatives was proposed; but in the June elections they lost their votes to the Radicals in the Liberal districts. The Sobranje was called to a preliminary extraordinary session for July 9. The Zankoff party was left in a minority, in spite of acts of official violence at the elections, which led to bloody collisions in Vratsa and Locovit. Karaveloff was elected President of the Chamber. The ministers thereupon gave in their resignations to the Prince, who summoned Karaveloff. The Cabinet was formed as follows: President, Minister of Finance, and Minister of Railways, Commerce, and Agriculture, Petko Karaveloff; Minister of the Interior, Slaveikoff; Minister of Foreign Affairs, Ilia Zanoff; Minister of Public Instruction, Karoloff; Minister of Justice, Radostinoff.

The regular session of the Sobranje was opened October 27. The Zankoff party and the Conservatives had formed a coalition in the hope of upsetting the ministry, but found that they could not command a majority, since the Karaveloff Cabinet were in agreement with the Prince as to proceeding to the construction of the Baribrod-Vacarca Railroad according to treaty, and other questions.

Foreign Relations.—During the recess a customs league was concluded with Eastern Roumelia, whereby no duties shall be levied on the frontier, except on tobacco and salt. A commercial treaty was entered into with Roumania also. The Porte has made many protests to the Bulgarian Government, and several times complained to the powers, but without effect hitherto, regarding violations of the Berlin Treaty in the treatment of the rights and property of Turkish subjects. The setting up of civil tribunals to take the place of the muftis, or religious judges, furnished the ground for a fresh remonstrance. A boundary dispute with Roumania with regard to the Dobrudja line and the possession of the forts at Arab Tabia, was not settled by a joint commission, which separated without agreement in June. The sovereigns and their ministers subsequently met and came to an understanding.

Conflict with Servia.—The two rivals for the primacy among the Balkan states became involved in the summer in a dispute that, before the friendly understanding between Russia and Austria, might easily have plunged them into a war and endangered the European equilibrium. After the suppression of the insurrection in the Timok district the leaders who escaped the terrible vengeance of the Servian Government found a sympathetic reception in Bulgaria. The Bulgarian authorities kept a kind of surveillance over them, but allowed them to settle at Widdin, close to the frontier. The deposed Metropolitan Michael, who met with demonstrative greetings throughout Bulgaria, was also permitted to establish himself on the border of his old diocese. The complaints of the Servian Government led to the intercession of Russia, whereupon the revolutionary leader Pashio was removed to Sofia. After the Servian elections fresh disturbances broke out in the Timok district. The Servian representatives that bands of refugees had crossed the border, destroyed a village that had been true to the Government during the insurrection, and committed pillage and murder in other places. The Bulgarian authorities denied that escaped revolutionists had entered Servia.

Zankoff thought it best to take a bold stand in view of the approaching elections. He met the Servian demands for the expulsion of the refugees with a demand that Servia should evacuate one of her frontier posts. This was on a large island in the Timok, opposite the town of Bregovo, and connected with it by a bridge. Three fourths of the island was Turkish territory before the Treaty of Berlin, and was used as a pasture by the townspeople. The Servian portion was divided off by a palisade, guarded by four sentries in a block-house. The Bulgarian Government no longer insisted, though the peace of Berlin preserved the existing boundary-line. A Bulgarian force drove out the four guards and took possession of the block-house in the beginning of June. On the 6th the Servian agent in Sofia presented an ultimatum demanding the restoration of the block-house and the expulsion from Sofia and the border districts of all the refugees and the ex-Metropolitan Michael. Bulgaria offered to treat the Servian portion of the Timok island as neutral, but the compromise was not acceptable. After the lapse of three days, as announced in the ultimatum, the Servian agent quitted Sofia. A day after, Bulgaria called her representative away from Belgrade. Servian troops were dispatched to the frontier. A martial fever pervaded Servia. The Bulgarians took little interest in the diplomatic quarrel; but the hostile men of their neighbors began to infect them with a warlike spirit.
Prince Bismarck instantly placed himself in communication with Vienna and St. Petersburg, and with the approval of both cabinets diminished the two Balkan powers to commerce or arbitrate their differences, because a resort to arms would not be permitted. In the event an understanding was reached, whereby Servia promised to keep the expatriated insurgents at a distance from the Servian line, and Servia agreed to give up the position on the island in consideration of an exchange of territory or a money indemnity.

Agitation for the Union of Bulgaria and Eastern Roumelia.—The approach of the time for appointing a successor to Aleko Pasha gave occasion for fresh manifestations in favor of the incorporation of Eastern Roumelia in the principality. Mass-meetings were held in the principal towns of Eastern Roumelia and in Bulgaria, in which the citizens expressed their desire that the powers would modify the Treaty of Berlin so as to satisfy the aspirations of the Bulgarian people for political unity. The strongest motive of the Eastern Roumelians was supplied by the fact that taxes are much lighter in Bulgaria.

C

California: State Government.—The following were the State officers during the year: Governor, George Stoneman, Democrat; Lieutenant-Governor, John Daggett; Secretary of State, T. L. Thompson; Treasurer, W. A. January; Comptroller, John P. Dunn; Superintendent of Public Instruction, W. T. Welcker; Attorney-General, E. C. Marshall; Surveyor-General, H. J. Willey; State Engineer, William H. Hall. Judiciary, Supreme Court: Chief Justice, Robert F. Morrison; Associate Justices, W. H. Myrick, E. W. McKinstry, E. M. Jones, J. D. Thornton, J. R. Sharpspoon, and J. B. McKee.

Extra Legislative Session.—An extra session of the Legislature convened, at the call of the Governor, on March 24, and remained in session until May 13. The Governor, in his proclamation, specified the objects he had in view in calling the session; which were mainly the passage of laws or constitutional amendments which a new railroad commission should be established to lay upon railroad the same tax as upon individual property, the delaying of payment prevented, and the fees for passengers and freight regulated. A California reviewer says:

That the railroad companies had successfully resisted the payment of their taxes ever since the present Constitution was adopted had very naturally induced the people, who demanded some revision of the revenue system to meet the emergency. The great corporations should be required and compelled to pay their just share of the expenses of the government that afforded them protection and admitted question. And that the evasion of that obligation was the chief existing grievance against them, ill-hardly be disputed. But for that grievance the session would not have been called. Their successful evasion of the payment of taxes was due to the fact that the framers of the present Constitution saw fit to provide that railroad property should be assessed and taxed differently from all other property.

The Legislature, when it convened, was under the misrule, in both its branches, of the men who claimed to be the especial friends of the Governor. They had deemed him to call the session; had suggested to him a topics for consideration, and were supposed to have formulated the proper bills and constitutional amendments to effect the objects sought. But though, rough their instrumentality, these amendments to the revenue articles of the Constitution were given the consideration of a first mention in the proclamation, seven weeks of the session were absolutely frittered away in the consideration of matters of little importance, having no relation to revenue, and finally the revenue questions were forced upon their attention by those who had not favored the calling of the session. And they had succeeded in getting one or two propositions into shape for final action when the promoters of the session, to avoid voting on them, forced an adjournment and went home.

During the session there were introduced in the Assembly no less than sixty-three bills and propositions for the amendment of the Constitution, besides a score of concurrent resolutions, the latter mainly instructing our Congressmen to vote on various measures pending at the national capital. In the Senate the bills and constitutional amendments introduced numbered thirty-two, making ninety-five in all. Of these, four bills and one constitutional amendment were finally passed by both Houses. Two of the bills were appropriations for the expenses of the session; another a bill to allow counties to fund their indebtedness in certain cases—designated to permit Yolo county to fund a floating debt of $5,000; and the fourth a bill to license boats engaged in fishing. The constitutional amendment that was adopted, and is to be submitted to the people for approval, is designed to exempt mortgages from being raised beyond their face value when the Board of Equalization orders an assessment raised. And that, barring the concurrent resolutions advising Congressmen how to vote in Congress, is the ultimate of fifty-days' work by the Legislature.

Several cases involving the constitutionality of the system of railroad taxation are pending in the United States Circuit and Supreme Courts.

The opponents of the extra session charged that its promoters were affected by communistic tendencies, and desired to make party capital by unreasonable assaults upon the railroads. Many of the measures introduced were very radical. The result was disastrous to the Democracy. The November election brought a political revolution.

Political.—The Prohibition Home Protection party held its State Convention in San Francisco in June. Delegates to the National Prohibition Convention were chosen, and presidential electors and Congressmen nominated. The main purpose of the party was set forth in the following passage in one of the resolutions:

We declare the cardinal principles of our party to be the prohibition, by national and State constitu-
tional amendments, of the manufacture and importation of all alcoholic, vinous, and malt liquors not demanded for medical, mechanical, or scientific use, and the regulation by law, under some penalties, of the sale of such liquors for such use, and the absolute and total prohibition of the sale for any other purpose. We deplore all attempts to substitute any system of high-license, so called, in place of prohibition of the liquor-traffic.

A Republican State Convention met in Oakland on April 30, and chose delegates to the Chicago Convention. Resolutions were passed favoring a protective tariff, in favor of amending the Chinese exclusion act so as to render it more stringent and make it perpetual, and instructing the delegates to vote for James G. Blaine.

The Democratic State Convention met in Stockton on June 10th. Delegates to the Chicago Convention were chosen, and presidential electors nominated. The convention declared in favor of Samuel J. Tilden for President and Thomas A. Hendricks for Vice-President, with Allan G. Thurman as second choice for President. A resolution was adopted repudiating the presidential aspirations of Stephen J. Field. Other resolutions approved the calling of the extra legislative session, declared against national banks, and favored the adoption of the proposed constitutional amendment providing for text-books in the public schools.

A second Republican State Convention was held in Sacramento in July, to nominate presidential electors. Resolutions were adopted favoring the text-book amendment to the Constitution, and demanding that the industry of the manufacture of the rainfall shall be protected by a protective duty, and the restoration of the tariff on wool as fixed by the law of 1867.

Election.—At the election, on November 4th, the total vote was 193,738, of which the Blaine electors received 105,816; Cleveland, 88,807; S. J. Field, 9,895. Five Republican Congressmen were elected, while one Democrat (in the first district) was successful by a bare majority. Half of the Senate and the entire Assembly were voted for, and a large Republican majority in the Legislature was chosen. Three constitutional amendments were submitted to the people and adopted. The first authorizes water-works in cities and towns, the second provides for the printing of school-books by the State, and the third provides for a State Board of Equalization.

Education.—The number of pupils enrolled in the public schools in 1892 was 168,024; in 1893, 174,611: number of schools in 1882, 3,086; in 1893, 3,282; new school-houses built in 1892, 111; in 1898, 104; number of teachers in 1889, 3,777 (2,621 females); in 1893, 3,930 (2,816 females). The number of children between five and seventeen years of age is 223,816.

Crops.—The cereal product of the State in 1893 was as follows: Wheat, 32,650,870 bushels, on 2,654,710 acres; barley, 19,000, 233 bushels, on 775,405 acres; oats, 3,652,657 bushels, on 122,618 acres; rye, 343,875 bushels, on 29,351 acres. In 1884 the following was the product: Wheat, 57,420,188 bushels, on 8,587,964 acres; barley, 23,432,240 bushels, on 966,703 acres; oats, 3,056,872 bushels, on 93,199 acres; corn, 5,996,316 bushels, on 582 acres. Sonoma county raised 3,444 bushels of the corn, and Los Angeles 1,150. The chief wheat-producing counties, in order of their yield for the year, were, St. Luis, Colusa, Yolo, San Joaquin, Tulare, Tama, Merced, Contra Costa, Sutter, Los Angeles, Butte, Sonoma, Santa Barbara, Santa Cruz, Solano, Sacramento, and Monte. The wheat yield of 1884 was the largest in the history of the State. The largest barley-producing counties were, Monterey, Santa Clara, Los Angeles, Butte, Bernardino, Stanislaus, and Alameda.

Statistics.—The following table gives comparative statistics for San Francisco and California for 1892 and 1893:

<table>
<thead>
<tr>
<th>Description</th>
<th>1883</th>
<th>1893</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clerging-House exchanges</td>
<td>$17,961,928</td>
<td>$20,119,128</td>
</tr>
<tr>
<td>Foreign exports of San Francisco</td>
<td>41,765,464</td>
<td>47,094,064</td>
</tr>
<tr>
<td>Imports of Atlantic States</td>
<td>7,144,509</td>
<td>8,288,039</td>
</tr>
<tr>
<td>Foreign imports (eleven months)</td>
<td>81,563,949</td>
<td>91,011,751</td>
</tr>
<tr>
<td>Overland railroad shipments</td>
<td>331,992,500</td>
<td>392,152,100</td>
</tr>
<tr>
<td>Value of wheat exports</td>
<td>25,578,372</td>
<td>25,578,372</td>
</tr>
<tr>
<td>Amount of wheat crop, canned</td>
<td>15,250,921</td>
<td>19,530,921</td>
</tr>
<tr>
<td>Wool products, pounds</td>
<td>50,405,900</td>
<td>40,203,900</td>
</tr>
<tr>
<td>Wine product gallons</td>
<td>9,500,000</td>
<td>9,500,000</td>
</tr>
<tr>
<td>Quicksilver products, lead</td>
<td>1,500,000</td>
<td>1,500,000</td>
</tr>
<tr>
<td>San Francisco real-estate sales</td>
<td>14,864,000</td>
<td>15,128,000</td>
</tr>
<tr>
<td>Value of buildings erected in San Francisco</td>
<td>5,561,859</td>
<td>5,561,859</td>
</tr>
<tr>
<td>Immigration—excess of arrivals</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Number of business failures</td>
<td>629</td>
<td>629</td>
</tr>
<tr>
<td>Liabilities of insolvents</td>
<td>4,063,194</td>
<td>4,063,194</td>
</tr>
</tbody>
</table>

The number of convicts in the State Prison at San Quentin, Nov. 30, 1894, was 1,187.

Irrigation.—The fact that no rain falls during the summer months in most parts of the State, viz., 1,775, Five Republico members very thereby arresting the growth of vegetation renders it necessary to supply water to soil artificially. In some of the dry sections of Los Angeles, San Bernardino, and Diego counties, the water-supply is limited. For a part of this region the irrigation works and systems, as they existed in 1879, are grouped as follows by the State Engineer:

<table>
<thead>
<tr>
<th>Name of System</th>
<th>Length of canals</th>
<th>Acres irrigated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles river system</td>
<td>74 1/4</td>
<td>8,750</td>
</tr>
<tr>
<td>Upper San Gabriel river system</td>
<td>64 1/2</td>
<td>12,750</td>
</tr>
<tr>
<td>Lower San Gabriel river system</td>
<td>12 1/4</td>
<td>6,000</td>
</tr>
<tr>
<td>Lower Santa Ana river system</td>
<td>32 1/2</td>
<td>5,750</td>
</tr>
<tr>
<td>Upper Santa Ana river system</td>
<td>26 1/2</td>
<td>4,000</td>
</tr>
<tr>
<td>Small canals from Santa Barbara and San Bernardino mountains</td>
<td>88 1/2</td>
<td>5,750</td>
</tr>
<tr>
<td>Small canals from Colorado mountain range</td>
<td>29 1/2</td>
<td>3,000</td>
</tr>
<tr>
<td>Chimeneas in Los Angeles and San Bernardino counties</td>
<td></td>
<td>8,750</td>
</tr>
</tbody>
</table>

| Total                                       |                  | 54,000          |

Of the water-supply sent down by the State into San Joaquin Valley, only a
on is utilized for irrigation. The rainfall of a valley is so insufficient for agricultural uses that only one third of the valley land is under cultivation. The rest is nearly all soil, but for lack of moisture appears in any years like a vast desert. Oases have created wherever irrigation has been made. Water diverted from Kern river is used in canals near Bakersfield, irrigates more than 20,000 acres. About 80,000 acres irrigated by water diverted from King’s in canals having an aggregate capacity of 2,000 cubic feet a second; probably 30,000 acres are supplied with water from the San Joaquin and Merced rivers combined. Wash and Tule river waters irrigate a considerable area of about 30,000 acres. The area irrigated from Fresno, Chowchilla, and other points in the valley will probably aggregate more than 215,000 acres. The water-supply from the San Joaquin valley is taken by means of three canals, at 15,400 cubic feet a second. The Engineer’s estimate, in 1879, of the area irrigated in the foot-hill counties, from unincorporated to Bakersfield, is 9,000 acres. He estimated the lands irrigated in 1879 from Cache to Cache by means of three canals, at 18,400 cubic feet a second. Irrigation is not confined to the above-mentioned sections. The State Surveyor-General’s report of 1879–80, gives the following information: There are 2,225 acres of land irrigated in the counties of Alpine, 1,850 acres in Madera; 2,000 acres in Lassen; 24,000 acres in Modoc; 20,000 acres in Plumas; and 25,000 acres in Siskiyou. Irrigation is being extended as fast as possible, and the construction of necessary irrigation works is being completed. A Irrigation Convention met at Fresno in November, 3d. Its object was to frame a bill to be laid before the Legislature in January, 1883, for the regulation of irrigation. Recent depositions have been taken in the old common-law suits for riparian rights, which can not be acquired in California without serious hardship to present owners. In the case of Miller & Lux v. Haggan, a rehearing was granted. The Fresno Convention was in session several days. After a conference, a committee was appointed to draft bills for submission to the Legislature, embodying the following points:

1. The adoption of the cubic foot per second as the unit measurement throughout the State.

2. The institution of a system of making all water-rights a matter of proof and record.

3. A declaration by the Legislature that all the waters of the State in natural streams and lakes belong to the people, and are subject to appropriation by the people for irrigation, mining, manufacturing, and other useful purposes.

4. To provide the machinery for the voluntary formation of irrigation districts by which the owners of land may acquire water-rights, and assess the lands for the purpose of constructing canals, ditches, or other irrigation-works, or for purchasing those already constructed; provided, that water already appropriated shall thereafter be utilized as at present, through existing works, or the extension of the same, so far as may be necessary for the irrigation of lands dependent thereon; and further provided, that no lands shall be taxed for the construction of works of irrigation except lands actually to be irrigated by said works.

6. To extend the law of eminent domain as to allow an irrigation district, or a corporation outside of an irrigation district, to condemn and pay for the use of water, lands, canal districts, and water-claims, and rights of whatever nature, held by any person or corporation, or any other private rights of property, however existing or acquired, or by whatever name designated, which may be necessary for the appropriation or use of water; provided, that in condemning water used at the time of the commencement of an action for the same a manifest greater public interest shall be shown; that the irrigation district with power is defined as the sub-district within the hydrographic district, while the hydrographic district is one without condemning power, but with regulation power only.

Débris Question.—On January 18th the United States Circuit Court decided the case of Woodruff v. The North Bloomfield Gravel Mining Company and others. The opinion was pronounced by Judge Sawyer, concurred in by Judge Deady. This was a bill in equity to restrain the defendants, engaged in hydraulic mining, from discharging débris into the Yuba river, to be carried down into Sacramento and Feather rivers, filling up their channels, injuring navigation, overflowing and covering the adjacent lands with débris, and injuring and threatening to destroy the lands and property of the complainant and other land-owners on and adjacent to the banks of the streams. The suit was begun in September, 1882, and the testimony was taken in June, July, and August, 1883. The opinion of Judge Sawyer is very long. All the conclusions are clearly stated, and are in favor of the valley, maintaining its right to full protection from injury by hydraulic mining, and denying that any rights, by prescription or by grant, express or implied, from the State or United States, have been acquired on the part of the miners to prosecute the industry of mining in such manner as to produce injury to the navigable streams and destruction and injury to lands.
and property below. An appeal was taken to the Supreme Court of the United States.

**CANADA, DOMINION OF.** See DOMINATION OF CANADA.

**CANNED PROVISIONS.** Their Wholesomeness.—
The question whether danger may arise in the use of canned provisions, from formation of poisons by action of the acids on the tin or solder, has excited much attention. Frequent allegations have been made of persons consuming canned provisions having been seriously and even fatally injured by poisons thus developed; but in no case does the action or even the existence of such a poison appear to have been established with certainty. It appears, on the other hand, to be decided, upon the testimony of manufacturers, chemists, and physicians whose knowledge and integrity are beyond question, that when sound provisions are used, and proper care is exercised in selecting the material for the cans and soldering them, the consumption of goods thus preserved is absolutely safe. The possibility of danger can arise only from the use of provisions that have begun to decay, or of inferior or adulterated material in the cans, or from carelessness in the soldering. The question of the extent to which the danger, if there be any, of poisoning may exist, was investigated in 1883 by Prof. S. A. Lattimore, of the University of Rochester, analyst of the New York State Board of Health, who examined a large variety of canned goods, comprising peaches, plums, grapes, strawberries, cherries, blackberries, corn, beans, succotash, tomatoes, pumpkins, and peas, and reported that—

No indication of adulteration was found in any of the canned fruits or vegetables. Attention was given to the possibility of the chemical action of the fruit acids upon the inner surface of the cans, whereby salts of tin and lead might be produced, rendering the contents in some degree poisonous. The application of the well-known tests of these metals failed to show any evidence of their presence. Some of the articles examined were canned in the summer of 1880.

Prof. Albert H. Chester, Ph. D., of Hamilton College, made examinations of canned meat and reported also to the New York State Board of Health, saying:

Many cases have been reported in the papers, where it is alleged that persons have been poisoned by the use of canned meats. I have never been able to obtain a sample of the meats which had produced such a result, nor have I seen any authentic report of a chemical examination of such meat showing the kind of poison. Many people in the West, particularly in mining and lumber camps, eat canned goods every day, and live and do not suffer in consequence. In my own experience I have had gangs of men at work in the woods, frequently months at a time, eating canned corned beef, tomatoes, corn, peaches, and condensed milk every day, without a single case of sickness of any kind during the season.

The subject has been discussed in the Medical and Legal Society of New York, having been brought before it at its meeting of the 9th of April, 1884, by Dr. John G. Johnson, of Brooklyn, who made a report of six cases which had occurred in his practice in a family after having eaten canned tomatoes at lunch. The symptoms of the cases were those of violent poisoning: not merely of the sickness that would arise from eating damaged provisions, but symptoms accompanied by vertigo, coma, convulsions, and obstinate constipation, indicating the action of some chemically developed toxic agent. The tomatoes were indicated as the medium through which the poison was conveyed, for only those of the family who had eaten of them were affected. The poison appeared to be a substance held in solution, for those were most affected who had eaten of the juice of the tomatoes, while those who had taken only of the firmer parts of the conserve suffered less. Unfortunately, no analyses were made of the tomato-juice or of the excavations of the patients, so it was impossible to determine what the poison really was. The symptoms varied from those of lead and of copper poisoning. Pursuing his inquiries, Dr. Johnson found that, in soldering on the can of the can, muriate or chloride of zinc had been used as the amalgam, instead of the resin ordinarily employed. The saturated solution of this substance being applied with the brush after the manner of a paint to the groove of the can, it was supposed that a portion of the acid, having dissolved also some of the tin, had run into the can and thus been taken into the liquid portion of the tomatoes; and the author suggested that the peculiar color of the tomatoes, which he likened to a faded red, might have been produced by the bleaching action of the chlorine in that substance. Dr. Johnson closed his paper with a few rules for avoiding cans in which there was a possibility of the goods having been damaged or having imbbed poisonous matter from the metal or solder, among which were: “Reject every article of canned food that does not show the line of strain around the edge of the can, the same as is seen on the seam at the side of the can,” and “reject every can that shows any rust around the cap on the inside of the head of the can.” Dr. Johnson’s views were partially confirmed by A. W. Ford, of Brooklyn, who followed him with the relation of a case of sickness which he ascribed to the eating of canned apples. He, also, had failed to verify his supposition.

In opening the discussion on the paper, Mr. Clark Bell, presiding at the meeting, called attention to some cases of alleged poisoning by canned fruits in Glasgow, Scotland, and read from the British Medical Journal reports of those cases representing that the chemical analyses, made by order of the authorities, had failed to show any poison. Representative men connected with the canning industry in Baltimore and New York were present at the meeting by invitation, and traversed Dr. Johnson’s conclusions. They admitted that they used the muriate of zine in soldering the cans, because it was the most feasible and economical amalgam, and insisted that it was so di-
CANNED PROVISIONS.

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In seven parts of water, that the danger to it, if it existed, must be remote. It was also maintained that the statistics of the trade showed that every dozen cans of goods thus put up revolted, if that substance was so dan-


xidit had been represented to be, it we killed millions of people. Some


s that had been made against the of what are called "second brands" were also replied to. The dealers said that while those goods were in a case inferior in quality to the "first"—that is, were not prepared from the ecimens—they were perfectly sound wholesome as the "first brands.


section with the discussion a letter from Prof. John J. Reese, of Phila-


who had had himself some cases of xer described in the papers, and had an quite at a loss to determine the of the "dangerous and even fatal


In one marked case of sickness, of canned peas, he had made a chemi-


zation of the few fragments left in had wholly failed to detect any of unusual poisoning. "What is be the peculiar and profound nervous can not, in my opinion, be accounted a theory of chloride-of-zinc poison-


ning would produce only the violent symptoms. He remarked that similar had followed the use of ice-cream puddings in several cases, and suggest-


possibly some poisonous substance ed, similar to, if not identical with, amines or alkaloids of putrescence, "e lately been blaming the attention gists.


littte was appointed to take the sub-


consideration, and, having conferred miliar committee representing the xers and dealers in canned fruit, to some future meeting of the society.


Stevenson, Government Toxicologist, London, has made the fol-


lement, embodying the results of his xerations on the subject, which was later meeting of the Medico-Legal So-


acute metallo poisoning by canned is not known to have certainly in this country, though the consump-


mes of food is enormous. It is proba-


bronic lead-poisoning may have oc-


curred contamination of the canned st such cases have not been recorded. then cases of acute poisoning occur, the use of canned meat; but there ison to believe that this has occurred e the food was tainted or bad. An held in 1888 in Pimlico, a district 1, where it was alleged that death nitrate of tin, and it is said that a 1) of meat was shown, from which, ox, tin had been removed from the ch; but I am not aware that any analysis was made confirmatory of the sup-


position. In February, 1884, several cases oc-


urred of poisoning by a tin (can) of provisions, the symptoms being those of gastro-enteritis. Analysis showed that the food contained traces only of tin, but this is the rule in canned goods, and tin-poisoning was disproved. I have been Government Toxicological Analyst for thirteen years, but have never myself met with acute metallic poisoning by canned foods. Dr. John-


son arrives at very positive conclusions on altogether insufficient data. His remark that the faded appearance of the tomatoes is accounted for by the chlorine in the chloride of zine, shows that he has failed to grasp the chemistry of the subject on which he writes. That canned goods usually contain traces of tin, has been shown by several British chemists, and is a well-established fact. That such provisions do not usually produce any serious illmes, is a matter of common experience. I have myself experimented on the subject, and have fed dogs for weeks together with food contaminated with tin compounds, without injury. I have also watched the effect of the daily use, for a lengthened period, of tin-comp-


minated food by "adult persons, also without obvious results. I am not prepared to say that tin compounds are inert, but evidence is wanting to show that the daily ingestion of fractions of a grain of tin compounds is manifestly injurious to health.


CANOES. The word "canoe" is of American origin. The early Spanish explorers trans-


lated it into cano, and the French into canot, and the dictionaries define it as a rude boat, hollowed from a log, or made from skins or bark, and used by savage races. The past twenty-five years, however, have brought canoeing into prominence as a means of out-


door recreation, especially in Great Britain and her colonies, and in the United States. The canoe has been civilized, and has become in effect a small yacht, capable of making ex-


tended cruises wherever there is water a few inches in depth, and under all conditions practicable or safe for any small boat. Canoeing, as a recognized recreation, is definitely traced back to the time when John MacGregor, an Englishman, conceived the idea of building a boat that should combine the sea-going qualities of the Esquimaux kysack with the con-


structional strength and nice finish of scientific workmanship. The first result of this experiment was the "Rob Roy," in which Mr. Mac-


Gregor made his famous voyages on the Jordan, the Nile, and other rivers, seas, and lakes. His books introduced canoeing to the English-speaking world, though as a recreation for gentlemen it has, in a less elaborate form, been popular in Canada since the early days of the French occupation.


It will be seen from the engraving that the original "Rob Roy" type is without "sheer" —that is, without an upward rise of deck and gunwales at the bow and stern. This rendered
her somewhat uncomfortable and wet in a seas-way, and led to the construction of the “Nautilus,” which had a decided, at first an excessive, sheer, but was greatly the superior of the “Rob Roy” in rough water, and for extended expeditions. The “Rob Roy,” moreover, was narrow, and consequently liable to upset;

A modern canoe, then, may be built, sharp at both ends, and capable of effectively propelled by one man, and, with a double-bladed paddle, are usually made in two pieces in the middle by means of brass fittings. The canoe is provided with a seat board (the latter an essential in the paddling), and delivers his strokes on one side and the other of the canoe may be effected by means of oars, or with the aid of steering-gear which the feet press against a stretcher, and which is connected with the steering-gear by means of ordinary yoke steering-gear, and is not essential, to the ease and quickness with which the canoeist can manage his boat. It hardly be dispensed with in paddling distance across the course of or wind.

The canoe, as has been said, is as over except in the middle, and the deck space are water ports that contain sufficient the boat afloat in case of accident. best made of sheet copper or other metal. Such, in its simplest form, is a canoe. The equipments and common use are so numerous as that they can not here be enumerated. Shout should be said that one object of to provide a sleeping-place for her camping out. To this end the canoe amidships should be at least seven part of this being below decks, so covered with a tent or awning it be perfectly protected from rain. Room below decks is used for storage. The complete canoe is a sail. The sails are of every conceivable shape, but only those that have been tested and are described. As is obliged to sit amidships, it is for reasons desirable to carry two sails—a sail forward, and a smaller mizzen...
Canoes.

For her to "lie-to" in case of need, head to wind and sea. The chief ad-
of the latoen sail is, that it can be in-
exed wholly detached from the mast, and
for stowage on deck or elsewhere.

The sheet being the absolutely necessary. The
ny, however, be fitted with a down-haul, and reefing-
desired. The settee is an
oal upon the latoen. In
or part can be readily
ar running-lines to its single batten, C, as
use of the lug (tops). The
hments are variously ar-
on-jaws similar to those
en having been success-
When reefed, the latoen
rowl will drive a canoe
the water faster than any

Its general shape
O C are light spars, and
m usually of ash or ph
which are inclosed in a running across the sail,
alizing necessary for the
ament of "parrels," D D,
gar, etc. The reefing-gear
shown in an engraving of this size. It
if lines attached to the successive bats
running through rings to the boom,
nes pass through small blocks. A
es lines hauls the batten close down
. These lines are made fast to

There are various ways of rigging these lines, each of which has its special ad-
T he sail is hoisted and lowered by
r ordinary halyards and down-hauls,
ah at the two spars and at each of
hold it close to the mast when set.
ized, shown in Fig. 3, is a "fan-sail,"
ily reefed by hauling C close to
and making it fast. It is a very con-
form for a small sail.

rs rigging, such as halyards, reef-
down-hauls, etc., should lead aft or
to within easy reach of the hand.

are built with or without keels. For
oes, a keel or its equivalent is essen-
ting to windward. For paddling, it
spended with. There are several pa-
ms of folding center-boards, E, which
used on sailing-canoes. An ordinary
ver, an inch and a half to two inches
efficient for general purposes.

are usually built of white cedar, and
ry lap-strake method of construction
the most common. But they are
th a smooth outside skin, this
ing very popular in Canada, where
it has been brought to great perfection for
lightness and strength.

The canoe has no superior among small
boats for general utility in pleasure-cruising.
Some prudence and skill, easily acquired by
experience, are requisite for its safe manage-
but with due exercise of these its owner
may go almost anywhere on inland or coast-
wise waters, always having a good shelter with

Cape Colony and South Africa. The Cape
of Good Hope is a British colony possessing
responsible government. The members of the
House of Assembly and the Legislative Coun-
Ci are elected by limited suffrage. The Gov-
ernor is Sir Hercules Robinson, appointed in
1880. The Prime Minister is Mr. Uppington,
who in May, 1884, succeeded Sir T. O. Scallen.
Area and Population.—The area of Cape Colony, with British Kaffraria and the annexed districts of Basutooland, Griqualand West, and the Transkei, is reported as 231,950 square miles. The total population in 1881 was 1,248,824.

Commerce.—The value in United States money of the imports in 1882 was $41,765,656; of the exports, $31,061,703. Wool, the second largest article of export, has decreased in recent years, while the exports of ostrich feathers, copper-ore, and Angora hair have largely increased. Diamonds, the leading commercial product of the country, are not included in the customs-house returns, as they are forwarded through the post-office. The value of the shipments increased from $8,796,554 in 1876 to $20,328,487 in 1881. The export in 1882 was $19,429,510. The illicit traffic is also very large, but can not be estimated. The colony has suffered a severe commercial depression, caused by short crops in 1881 and 1882, a small-pox epidemic in the latter year, a panic in diamond-mining stocks, the cessation of large war expenditures, and over-importation of goods. The colony imported in 1883 nearly $3,000,000 worth of grain and flour, and about $7,500,000 worth of provisions. The tonnage entered at the ports of the colony in 1882 was 6,058,876 tons; cleared, 5,024,015.

Railroads and Telegraphs.—Nearly 1,000 miles of railroad were authorized in 1876, and about 500 miles more in 1881. The entire network, the largest in proportion to the public debt of any British colony, was about completed at the end of 1884. The telegraph lines open at the beginning of 1883 were 8,466 miles in total length, with 6,951 miles of wire.

The Diamond-Fields.—The speculation in mining shares a few years ago was one of the most remarkable instances of modern times. When the craze came, the whole credit system of Cape Colony was unheeded. The falling of the reef in the older mines was a more permanent cause of depression in this industry. None of the large dividends in the diamond-paying companies. The reef is the non-diamondiferous rock which is mingled in alternate folds with the diamond-bearing “blue ground.” It was left standing in great walls in the vast excavations, five hundred feet deep or more, and has now fallen, covering the whole bottom of the mines. To remove it requires an outlay of capital which the mining companies can hardly command, since European investors are now shy of such property. To mine underneath it by shafts and galleries would necessitate a complete redistribution of mining claims. The former plan is therefore more feasible. Engineers are engaged upon the problem.

Both white and colored laborers are employed in the mines. Illicit diamond-buying, though punishable with five or ten years' penal servitude, is carried on to an enormous extent. Many of the finest gems reach the European market clandestinely. The companies in their financial straits recently adopted more stringent methods to stop these thefts. Our regulations required the laborers to be searched and searched at the end of the day. The men struck in April and attempted to light the fires of the engines, when they and several others were shot. They slept in the streets of Kimberley, 4,000 in number, held excited meetings. Police and troops from the Cape put an end to the demonstration.

An explosion of forty tons of dynamite and five tons of gunpowder in the magazine Kimberley in January shows how local explosive effect of nitro-glycerine preparations. Window-panes were shattered as far as two miles away, but no other damage happened.

An earth-shock traveled in directions over sixty miles.

Finance.—The revenue in 1881-2 was $25,000, an increase of about $200,000 over the preceding year. In 1882-3 it fell to $28,000,000. The expenditure in 1882 was $3,800,000, and that for 1882-3 was less than $3,700,000, not including in either year the war expenditure, which in 1882-3 actually amounted to $150,000. The debt in 1881 was $12,000,000. To supply the deficiency in the general customs tariff of 10 per cent, the revenue was raised by an act passed in 1884. Special duties were imposed upon spirits, liquors, miner and certain other articles.

Change of Ministry.—The conflicts with Transvaal Boers led the Dutch rural population, who constitute the vast majority of people of Cape Colony, to take an active part in politics, and brought about the formation of a distinctly African party. In the general elections of February, 1884, they obtained control of the Legislature. When Parliament met in May, a liberal Government was formed, moving restrictions on the importation of wines and tobacco, whereby subjecting growers to the risk of phylloxera. The Ministry resigned and a new one was formed on the Dutch party. It was led by Upton, Premier and Attorney-General; Ayliff, Colonial Secretary; Gordon, Treasurer-General; Schermbroeker, Commissioner of Crown Lands and Public Works, Secretary for Native Affairs.

Anesthesia.—The desire of the Cape Government to prevent the establishment of a German settlement on the west coast was the cause of the long delay of the British Government's action in regard to Angora Pequa. The new nation held the same views with regard to the borhood of a foreign power, but looked to the incorporation of all the outlying territories in Cape Colony. They expected Imperial Government, however, to first establish sovereignty over the district before they feared would fall into the hands of the Empire. The English Government was to hand over to the German administrators districts already subject to Great Britain.
also on leaving to Cape Colony the reality, or at any rate the initiative, as regard re-annexations. During the summer Parliament passed acts in favor of annexation of Bechuanaland and of the Transvaal Districts. The district of Wallis and St. John’s territory in Pondoland was under colonial jurisdiction. The coast north of the Orange river as far south of the Canane, excepting the plantation at Angra Pequeña, was anarchy resolution. The chief Umquikile declared that he would resist the occupation north of the St. John’s, and forbade the of troops through Pondoland.

—This colony is administered by a or, with the assistance of a Council, lective. The area is reported as 18,750 miles. The population in 1881 was ; the population of European races, 85, the total exports in 1881 were valued ,000, the imports at £1,913,000. The of the treasury were £440,000, ex- re £239,500,000; the public debt, £1,659, the Legislative Council in 1884 rejected proposal of the home Government to en colony with responsible government. —The Imperial Government took on the Cape authorities the administration of Basutoland in December, 1888. Colonel was appointed Resident Commissioner, and given a police force of 50 men, and increased to about 150, to protect property and maintain order on the frontier. In 1886, after a series of wars with the Boers, which sapped the strength of the Republic, the Free State Boers con- the savages and were proceeding to their territory when Sir Philip Wode- tepped in and made the Basutos Brit- to. By the treaty of Aliwal North the Basutos to Britain promised to maintain order and become British. The Boers have recently sold the Basutos of Basutoland, refused to submit to or to pay taxes. No attempt was made to resist, but in October Colonel had an interview with Masupha, atthreatened coercion if the hut-tax of 70 cents per head was not paid.

Bechuanaland Question.—The Transvaal acquired possession of Bechuanaland in 1888 by reconquering the country from the chief Moselikato, who had cut out and enslaved the Barolong and Bas- The Boers restored the lands to Mont- the other Bechuana chiefs, over whom they continued to exercise jurisdiction, taxing the country in the Transvaal as it was in the Orange river. When diamonds were discovered near the Vaal river in 1871, a diamond mine was opened on the land of the Boers, and the works were continued until the discovery of diamonds in the Transvaal. The Boers, who had bought the land from the Europeans, sold it to the Transvaal Government for £150,000. The sale was confirmed by the Transvaal Government in 1872. The Boers were allowed to retain possession of the land, and were paid for it by the Transvaal Government.

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publican title, and to the debt incurred by the British administration, and, most of all, to the southwestern boundary. They made their contention good by resuming the style of South African Republic, failing to meet the payments of the debt, and fomenting the disturbances that led to the establishment of petty republics across the border. The English Government, in 1888, expressed a willingness to modify the terms of the convention in so far as they were impossible of fulfillment on the part of the Transvaal State. When the friendly chiefs were ousted from their domains in Bechuanaland, and their people reduced to wretched straits, the British authorities were spurred to take a more resolute tone. The Transvaal Government disclaimed responsibility for the acts of the citizens of Stellaland and Goshen, yet insisted on the untenability of the boundary of the Pretoria convention. About the beginning of 1884 President Kruger, Gen. Smit, who defeated the British at Majuba Hill, and Minister of Education Du Toit, who came as interpreter, arrived in England to treat with the English Government for the revision of the convention of 1881.

A new convention was concluded February 27. The independence of the Transvaal was re-established in all particulars save one. England still required the South African Republic, under which name, instead of the Transvaal State, the Boer Republic was now recognized, to submit for her approval any treaty entered into with native tribes outside the Transvaal, or with foreign nations, the Orange Free State excepted. If no objections are raised by the London Government within six months, the treaty goes into force without English sanction. The British residency in Pretoria was abolished. The British claim for the administration of the country from 1877 to 1881 was reduced to £250,000, bearing 6½ per cent. interest, to be extinguished in twenty-five years. The British claim for the cession of the Sand River Treaty was repealed. The republic accords religious liberty to all persons dwelling within its dominions, and equal rights to all white persons taking up their residence in the Transvaal. Persons who immigrated during the British administration, and fought on the side of England, shall suffer no prejudice in their persons or property. The Swazi tribes are to remain independent. The right to acquire land is promised to the natives of the Transvaal, also equal access to the courts. No higher duties than the existing ones shall be levied on English imports.

The convention fixed a new southwestern boundary-line, which incorporated in the Transvaal a part of Stellaland and a small strip of the land of Goshen. The Boer delegates were anxious to incorporate in the Transvaal Moshete's and Massowu's territories and Stellaland. Sir Thomas Scanlen, the Cape Premier, objected to this arrangement, because it would place within the Transvaal one hundred miles of a certain trade-route. The Cape Government offered to bear a fair share of the expenses of a joint protectorate. Lord Derby insisted on preserving this trade-route and the dominions of Montebou and Mankorowe from Boer control, and obtained the reluctant consent of the plenipotentiaries of the Transvaal to a line drawn with these objects. The British and Transvaal governments were each empowered by the treaty to appoint commissioners for the maintenance of the boundaries and the preservation of order on the western and eastern sides of the Transvaal. In case of a divergence of views between the representatives of the two governments, the matter is to be referred to Sir John Brand, the President of the Orange River Republic, as umpire.

**British Protectorate over Bechuanaland.**—Soon after the convention of London was signed, an imperial protectorate was proclaimed over Bechuanaland. Rev. J. Mackenzie, formerly missionary, was appointed Deputy Commissioner. He arrived in Bechuanaland about the 1st of May. Montebou, Montesou, and the other chiefs who were favorable to the British, signed treaties accepting the protectorate. Mackenzie's instructions authorized him to leave the Stellanders in possession of their lands, and to appoint an assistant commissioner to administer the affairs of the community. The Goshenites were to be ejected, and their lands restored to Montebou. The Deputy Commissioner was authorized to raise a force of police, with power to increase the number to twenty-five, and later to one hundred.

**Events in Stellaland.**—Mr. Mackenzie spent a long time in treating with the Voëls Committee and the administrator of Stellaland. The people were many of them from Cape Colony, while the Goshenites were all Transvaal Boers. When the Stellanders were convinced that the policy of the imperial authorities was to confirm the titles they received from Massowu, and eventually fled to Cape Colony, many of them were favorable to the protectorate. The Voëls Committee and inhabitants assembled in a general meeting petitioned the Cape Parliament in May to annex Stellaland to Cape Colony. There was a party fiercely opposed to the British protectorate, and anxious that the territory should be restored to the South African Republic. The administrator, P. J. van Niekerk, sympathized with these aims. Mackenzie offered to continue in office, and nominated his assistant Commissioner, Van Niekerk, gave no decided answer. With the rest of the sympathizers he waited for the result of petition to the Cape and for the development of the British policy. When Mackenzie ceased to employ force against the Goshen the Stellanders divided into two antagonistic parties. Those who were satisfied with security to their property offered by the British protectorate and the prospect of admission to Cape Colony, were represented by the
CAPE COLONY AND SOUTH AFRICA.

of the Volks Committee, an advisory body established before the arrival of Mr. de. The administrator and other ex-officers took a thorough-going African
face. When Mackenzie, with the sanction of the Volks Committee, summoned Van to Taungs, Mankoromo's capital, to oath of allegiance, he answered, July 31, that he would hold no circumstances to him. The executive then disbanded the Volks Committee, MacKenzie against interfering with MacKenzie proceeded to Vry
capital of Stellaland, and attempted to hold the protectores over the heads of government officers and the Boer party, to keep the enmity of the republic, and the British flag. It was immediately apparent. He employed military force to his authority. The community was into anarchy. Mackenzie requested the Commissioner to find armed forces to his action in Stellaland and Goosen. He gave permission to raise one hundred police, from which he recruited forty in Griqualand and Stellaland, and party also prepared for hostile action. At this point the British authorities were not the earnest representatives of the British Government and the cabinet at the time had recalled MacKenzie in the beginning of the year. Mr. Rhodes, a member of the late cabinet, was appointed his successor, and the title of Special Commissioner, and Bower was placed in command of the forces. They drew down the English flag, and the Stellaland colors to Van Niekerk, and the burgher police, withdrew all the forces, and left the people to themselves. At Van Niekerk entered the town at the head of a military force, hoisted the Stellaland colors, and who had been in welcoming the English rule. Mr. Bower subsequently persuaded the burghers to hold the frontier pending the annexation of Stellaland by the Cape Government.

Goosen—Mackenzie, a few days after his arrival in Stellaland, sent the Boer farmers who had set up a camp and drove them all out, set fire to their houses, and burned most of the forty individuals. Across the border, at Rooi-Grond, in the Transvaal, Goosen, they formed a military force under the command of Nicholas Malan, who were openly recruited in the Transvaal. When the British authorities were notified of the Transvaal Government, a demand was issued, but no active measures were taken to suppress the commands. At that time the Goshenites at Rooi-Grond proposed to take the place under British protection, but they refused to treat him. He concluded a treaty with Montsioa May 20th. On the 18th of June the Rooiland volunteers, or freebooters, as they are termed in English reports, made their first attack on Montsioa's kraal. On the 81st of July Montsioa's cattle, which the Boers had captured a few days before, were paraded in front of his kraal as a show to draw out his fighting-men. While his whole force were in pursuit of the party with the cattle, the main body of the Boers, over 200 in number, fell upon their flank, killing 100 and losing 30 of their own men. In this fight Christopher Bethells, the officer in command of the police which Mackenzie had sent to re-enforce Montsioa, was killed. According to the report accepted in England, he was murdered after he was wounded in action. The Boers had destroyed Montsioa's capital, captured all his cattle, and slain most of his warriors. The aged chief was willing to treat for peace, and accepted the overtures of an unofficial agent of the Transvaal Government. The commands took the British Assistant Commissioner Wright prisoner under cover of a flag of truce, but afterward released him. Vice-President Jonker arrived at Rooi-Grond and concluded a formal treaty with Montsioa, taking him under the protection of the South African Republic. The volunteers portioned out among themselves the best part of his lands. President Kruger notified the British Government that in the interests of humanity, and to stop the border fighting, the South African Republic had concluded, subject to their approval, a treaty with Montsioa and the Republic of Goosen, establishing a protectorate over them. After a correspondence with Sir Hercules Robinson, Lord Derby sent a dispatch in the beginning of October to the Cape authorities, asking them to call upon the South African Republic to annul its action. Thereupon the proclamation of the protectorate was withdrawn.

Expedition to Bechuanaland.—When the British Parliament met in the fall, the Goshenites were in possession of all the Baralog country, the Stellaland people had repudiated British protection, and the trade-route was practically controlled by the Transvaal. The Cape Government had strongly disapproved the high-handed proceedings of Mr. Mackenzie, and when asked to contribute the £2,000 a year, promised by Sir Thomas Scanlen, their half of the expenses of the protectorate, answered that they would have no part in a course of action likely to bring about a race-querrel between the English and the Dutch in South Africa. The British Government, in their entire South African policy, were solicitous above everything to have the approval of public opinion among the Dutch population of the Cape. The German annexations in that part of Africa, and the cordial feeling recently developed between Germany and the Transvaal, spurred the English Government to take a firm and vigorous course in the Bechuanaand question, and to compose their differences with the Trans-
The German aspirations tended also to cement the relations between Cape Colony and Great Britain, and reconcile the colonists to an imperial policy. The Colonial Government still refused to join with the imperial authorities or undertake any expenses in Bechuanaeland except for the purpose of annexation. They raised no objection, however, to British action. The general feeling in the colony was strongly in favor of enforcing the convention and establishing the protectorate. With many of the Cape Colonists the interests of the protected natives would be no safer than in the hands of the Boers. The desirability of the rich farming and grazing lands, which contained a population of only 30,000 souls, was freely expressed in the colonial press. The British Government obtained from Parliament a vote of credit for £750,000. Col. Sir Charles Warren, who formerly served in Griqualand West, was appointed to conduct an expedition to Bechuanaeland. He was authorized to raise 1,500 volunteers. The force was recruited in England. A great number of gentlemen, some of them military officers, joined the ranks, anxious to have a brush with the Boers, and retrieve the defeats of the Transvaal war. These irregular troops were to be supported by a large force of regular soldiers. Before the arrival of the expeditionary force, which departed from England in the middle of November, the Cape ministry went to Bechuanaeland, the British Government having empowered them to secure, if possible, the restitution of Montsioa’s lands by peaceful means on the basis of annexation to Cape Colony.

Zululand.—After the deposition of Cetewayo, the British Government, on the advice of Sir Garnet Wolseley, divided Zululand between thirteen kinglets, who began to “eat up” one another when left to themselves. The Zulus were divided into two main parties, the adherents of the deposed king and those attached to the fortunes of the more ambitious of the new chiefs set up by the English, John Dunn, Cetewayo’s brother Oham, Illibi, and Usibepu, who espoused the British cause in the Zulu war. Five of the kinglets and the main bulk of the nation desired the restoration of Cetewayo. The British Government adopted this plan as a means of putting an end to the anarchy, rather than annexing the country, or imposing a military control that would result in annexation. Sir Henry Bulwer and the people of Natal feared the re-establishment of the Zulu military power. To satisfy them and to keep faith with the chiefs and people hostile to Cetewayo, a strip next to the Natal border, comprising about one third of Zululand, was reserved as neutral native territory under imperial jurisdiction. Those who were unwilling to accept Cetewayo’s rule could obtain lands in this Zulu Reserve. Usibepu, the most powerful of the kinglets, was left in possession of an extensive country in the north. Cetewayo returned in the latter part of 1882. In June, 1883, he was captured and returned to his country. The combined armies of Usibepu and John Dunn, and himself driven out of the Reserve. The country of the Zulus was devastated by their enemies. In 1884, Cetewayo died in exile. The army then mustered again, and the war was renewed. Usibepu and his ally Illibi defeated the Ustus and announced the annexation of the country. In the Ustus encountered the forces of John Dunn, and made an attack on the Reserve, threatening Resident Commissioner Osborn, until re-enforcements of regular troops arrived. The Ustus in Mafeking accepted the assistance of the Transvaal Boers in sovereignty of Cetewayo was in dispute between Undabuko, Unyamana, and claimants. The Boers, who came in vi a proclamation of the Transvaal Government, ostensibly as peace-makers, proposed to Cetewayo’s young son Dinizulu as rightful heir. The Ustus agreed to it as a condition that they were not to be dispossessed of their possession. Dinizulu was established in the presence of several thousand Zulus and two hundred and fifty Boers on the 1st of May. The Boers were allowed to establish a township in the vicinity of Dinizulu’s kraal and promised farms in western Zululand. The Boers succeeded in recovering the identical strip claimed in the Transvaal before the Zulu war, and united to the Zulus by a British referee. Dinizulu was then made of Usibepu, which he did to satisfy. The Ustus with their white allies marched against him, defeated him in June 9th, overran his country, and the Boers restored to Dinizulu, who was restored to his dominion. Henry Bulwer was in favor of establishing a protective nominee Zululand. Lord Derby fixed the policy of the Government to that of maintaining the Reserve as a refuge for the Boers and their agelong winter grazing farms in Zululand, which was considered to be a violation of the convention like their similar encroachments on the eastern border. A force of about 3,000 British troops, under Gen. Sir Leicester Sesay, stationed in the Reserve. Many of the Boers who were settled in the Reserve, as the most fertile part of Zululand, now demanded their farms to join the fortunes of the British National party. Usibepu was assigned near the Natal boundary at Inkandhlala to a Boer volunteer. In August, after the settlement (which was contested by Ulus and William Grant, Cetewayo’s son was made, a Boer Republic in Zululand was definitively established. Gen. Piet J.
CAPE COLONY.

Sir John H. Brand, recently knighted by the Queen of England, who was elected in 1879 for the fourth term of five years.

Baralong Trouble. - The Baralong territory within the boundaries of the Free State is secured as a native reserve by treaty with Great Britain. A quarrel between the brothers Moroko and Sepinane, Baralong chiefs, was referred by them to President Brand. Moroko, who was christened Samuel on his conversion to Christianity, was dissatisfied with the award, and went to England to solicit imperial intervention, without success. Upon his return he assailed and captured Thaba Nchu, his brother's capital, in July, 1884. Sepinane was murdered after the battle. President Brand, at the head of five hundred burghers, overcame Samuel's forces, took him and his head-men prisoners, and placed them on trial for murder. The annexation of the native territory was proclaimed.

CATAMARAN, a boat or vessel that has two or more hulls, affording a high degree of stability without the use of ballast. This form of vessel originated among semi-civilized people, whose appliances, skill, and material at hand were not sufficient for the construction of vessels having large carrying power and seaworthiness. The pros is the name given to a boat having hulls of unequal size; the larger carrying all the rigging - mast, sail, etc. - and the smaller serving only to give stability. This style of double-hulled boat is used among the East Indians and the South Pacific Islands. The principal hull varies from forty to sixty-five feet in length, and six to seven feet in width, having a framework of bamboo, over which are stretched skins and bark, the seams being paid with pitch. The smaller of the two hulls is generally one to two thirds the length of the larger, usually made of the trunk of a single tree, or built in the same manner as the larger. Between the two hulls is a rude kind of platform covered with basket-work, upon which may be carried a part of the crew, and the material to be transported. The rig of the pros resembles that in use on the Mediterranean, having a short mast amidships, which is stayed to the secondary hull, and carrying one lateen sail, the yard of which is hung in the middle. In tacking, the clew of the sail is sheeted down to the other end of the boat, the yard swinging to adjust itself to the new position. Therefore each end of the boat becomes bow and stern alternately. The outrigger, or secondary hull, is kept always to windward. The Fejee double war-canoe (shown in the second engraving) is a more elaborate piece of work. It has a deck-house for the principal person on board, and over this a platform where the captain stands. The planks composing the platform have flanges on the under side, and through holes in these runs a cord of sinnet, by which they are tied tightly together. The deck is smoothed with an adze and polished so that the seams can hardly be seen. The steering is
done with an oar twenty feet long, which the waves sometimes bring round so violently that
the handle strikes a man dead. No speed of the proa has been accurately given, but with free
wind and smooth sea it should be very fast, perhaps fourteen miles an hour; but in beating
toward windward their progress must be slow, since they use no keel. The catamaran proper
is a rudely constructed craft, formed by lashing together three or more logs, until a suffi-
du Malaisie sur le Grand Océan pendant les
Voyages autour du Monde de l’Astrolabe, la
Favorite, et l’Ariégeois. Publié par Ordre du
Roi, 1847–48–49–50.”
During our centennial year (1876) there
sprang up among the yachtsmen of New Eng-
land and New York quite a furore about the
double-hulled boat, or catamaran, as it was
called, although it resembled its barbaric ances-
tor in theory only. In June of that year the
client width is obtained to give stability, upon
which are secured the mast and sails. The
catamaran is used in the lower West Indies,
and upon the Spanish Main, and to some ex-
tent among the eastern islands of the Indian
Ocean. Like the proa, it can obtain a consid-
erable speed with a free wind and smooth sea.
It cannot be said of either proa or catamaran
that they are in the full sense seaworthy. But
they make voyages from island to island in com-
paratively sheltered seas, where quiet weather
prevails during the greater part of the
year. The written accounts of these vessels
are generally meager and scattered; but the
subject is treated quite exhaustively in a book
published in Paris about thirty-five years ago:
“Essai sur la Construction Navale des Peuples
Extra Européens; Collection des Navires et
Pirogues construits par les Habitants de l’Asie;
Amaryllis appeared in the centennial regatta
in New York harbor. She was devised and
built by Mr. N. G. Herreshoff, of Bristol, Rhode
Island, who, in the following year, perfected
his plan for a double-hulled boat, for which
letters patent were allowed. His plan was to
obtain a maximum of stability with a minimum
of weight. In order to place the hulls as far
apart as practicable, and to give them perfect
independence and freedom of motion in verti-
cal directions, they were united by a system
of ball-and-socket joints, through which means
each hull could assume a position in conformity
to the ever-changing plane of the sea. The
car in which the occupants were seated, and
the mast and sails, were supported between
the hulls by a complex system of truss-work
made of steel rods. The proportions found to
give the best results were: in length of hull,
three feet; in width and depth, each
inch; and placed a slender, sixteen feet.
rudder; and in their form and equip-
ment symmetry was preserved. The
sail was that of a sloop spreading about
three feet of sail; the whole structure
weighed 3,300 pounds. With this description
a double-hulled boat, a very high speed was
achieved. With a strong beam wind and smooth
water, ten miles an hour was made, and seven
miles an hour in beating to windward. Since
1876 many catamarans of various forms have
been built, most of them having rigid connec-
tions, which in smooth water are well enough,
but in rough water too much strain is imposed
by not allowing each hull to pitch indepen-
dently of the other. Within a few years, steam
has been applied for the propulsion of a dou-
ble-hulled vessel, both in this country and in
England, but in neither case was a greater
speed obtained than in ordinary vessels.
CHEMISTRY. Chemical Philosophy.—The second report of the Committee of the British Association on Chemical Nomenclature, made to the Montreal meeting, contains tables showing what different names the same substance has received, and to what different substances the same name has been given by the chemists of different countries, and illustrating other variations in nomenclature that have prevailed. The report says that the usefulness of any system of nomenclature depends on its permanence. Curiously enough, the tables show that where names have been adopted, supposed to represent in some way the chemical constitution of bodies, they have not, as a rule, been adhered to, the advance of knowledge necessitating a change of opinion, while names which took no account of such change of opinion have endured. As a rule, those names are to be preferred which have shown most vitality, and have led to no ambiguity. Where there are two compounds composed of the same elements, the terminations "ous" and "ic" should be employed. The prefixes "proto" and "deuto," introduced by Thomas Thomson, were intended to mark the compounds in a series, not the number of atoms in a molecule. Where retained, this use only should be made of them. The conclusion of the report is in favor of retaining names of substances in common use rather than to change them for names indicating constitution, which might again be found to require alteration in accordance with some new view on the subject.

The atomic theory has been set in a new light by the researches of Mendelejeff and Lothar Meyer, who, inquiring whether some relations might not exist between the atomic weights of the several elements and their chemical and physical properties, succeeded in tracing an apparent simple relation between the atomic weights and the specific volumes of a considerable number of them, which, although it was not established as to all the elements, incited to further investigation. By various corrections in estimating the atomic weights of a few elements, and the discovery of new substances which fitted into vacant places in the series, the scope of this relation has been extended so as to include fifty-one of the elements, and chemists feel authorized to regard it as a general law.
all the elements, after hydrogen, with the law has been verified, are arranged in order of their atomic weights, they will be to divide themselves into two kinds of groups: the smaller periods, of which are two, including seven elements each, the larger periods, seventeen elements each. Grouping and the distinction of the periods based upon and justified by the fact that the several members of a single period show no similarity or community of properties chemical character with one another; but after that period closes, another period begins, the several members of which show an unmistakable parallelism with the corresponding members of the previous period. Arranging the periods in parallel columns, we shall find that the elements standing on the same horizontal line in every case exhibit similarities in chemical and physical character, and would be at once recognized as allied with one another. This is shown by the following table of the periods, which we take from an article by Victor Mayer in the "Deutsche Rundschau":

<table>
<thead>
<tr>
<th>SMALL PERIODS</th>
<th>LARGE PERIODS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First period.</strong></td>
<td><strong>Third period.</strong></td>
</tr>
<tr>
<td>n</td>
<td>Na</td>
</tr>
<tr>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td><strong>Second period.</strong></td>
<td><strong>Potassium</strong></td>
</tr>
<tr>
<td>2</td>
<td>10</td>
</tr>
</tbody>
</table>

The only seemingly exceptional case observed is in the position of carbon and silicon, a relationship to titanium and zirconium on one side, and tin on the other, is indicated by the dotted lines; but it will also be noted that the symmetry of the table is still in the first line, it will be observed, in the five alkaline metals—lithium, sodium, cesium, rubidium, and potassium—between relationships had already been recognized in their constituting a double triad, and are known as the most electro-positive of all the elements; while the last line in the four extremely electro-negative elements—elements exhibiting quite as striking similarities in all properties with one or as those of the first line. Similar correlations may be detected in the elements represented in the other lines, and a division of electro-chemical properties observed down the columns. When the table was first made, there were two more gaps in now appear. They were filled by the discovery of scandium by Nilson, and of gallium by Lecoq de Boisbaudran, with atomic weights fitting them to places that were indicated for new elements, and possessed properties, as determined by experiment, which accorded with those which Mendelejeff had noted that the elements that should occupy these places should possess.

The conditions of the color of these compounds, Professor Carnot has the dependence on various circumstances, some of which were certainly different from each other. The enormous number of micro-organisms and their tremen-
dous appetites seem to separate them from the higher forms of animals, but this distinction is only comparative. It must be borne in mind that an animal like a sheep, for example, converts much of its food into carbonic acid, hippuric acid, and water, thus utilizing the whole of the potential energy, while the micro-organism, as a rule, utilizes only a small portion. These micro-organisms which have been studied produce, like the higher animals, perfectly definite chemical changes. Principal Dallinger remarked, in reference to the attempted distinction between the lower animal and vegetable forms, that in following out the life-history of certain monads he had used a nutritive fluid containing no albuminoid substances, but only mineral salts and tartrate of ammonium, and that organisms classed as animals by Prof. Huxley were found to live in that mineral fluid. Bacteria of forms which can not be distinguished by the microscope have very different physiological functions. They can be modified physiologically, but not at all readily morphologically. By a slow change it is possible completely to reverse the conditions of the environment of the bacterium without changing its form.

In a special discussion in the British Association on "The Constitution of the Elements," Prof. Dewar remarked that Deville has shown, by his researches on dissociation, that in compound substances there is an equilibrium between decomposition and recombination, this balanced relation changing with the temperature. The breaking up of the iodine molecule, effected by Victor Meyer, is a decomposition of elementary matter, but, owing to the rapid recombination, there seems no hope of isolating atomic iodine at low temperatures. The vapors of potassium and sodium have different densities at different temperatures; probably, also, their molecules consist of two atoms at lower and of three at higher temperatures. More exact determinations are needed of those substances which exhibit a variable vapor density. The evidence afforded by spectral analysis proves that oxygen and nitrogen have two spectra, and there are probably different molecules at different temperatures. Hydrogen has a complicated spectrum under certain conditions. Mr. Lockyer has proved that the identity of certain "basic" lines of different elements, such as iron and calcium, is not due to impurity, but the greater dispersion of more powerful instruments has shown that the coincidence of these lines is only apparent, and not absolute. The differences observed in some of the spectral lines of a single element in the sun might be accounted for not by the decomposition of the "element" into simpler matter, but by great differences of level in the luminous vapor. Prouit's hypothesis, that the atomic weights of the other elements are multiples of that of hydrogen, has no basis in experimental fact. Prof. Wollcott Gibbs remarked upon the probability that what is generally regarded as a simple molecule, such as sodium chloride, exists in the solid state of several hundred atoms, and that the salt undergoes, in some kind of molecular dissociation. Vapor molecules, such as those acids he prepared containing many molecules of the metal molybdenum, vanadium, barium, etc., probably derived by substitution from are called simple molecules, but which are really composed of a great number of a

Chemical Physics.—Troost has recently shown that oxygen gas is capable of passing silver at a red heat, in the same manner hydrogen behaves with platinum and iron. A tube of pure silver was inclosed in a platinum cylinder, and the whole heated in the flame of boiling cadmium. On exhausting the oxygen from the vessel with a Sprengel pump, and allowing the oxygen into the space around it, it was found to enter at a rate corresponding to about 5 litres per hour for each square metre of exposed surface. On passing air instead of oxygen into the outer chamber, oxygen with a trace of nitrogen was found in the inter space of transfusion was diminished. Instead of exhausting the tube, it was found necessary only to pass through a stream of some other gas, such as carbon dioxide; but this considerably lessens the rate of transfusion. The oxygen was replaced by other gases, such as carbon dioxide, carbon monoxide, and nitrogen, but they did not fill the walls of the tube with the same slowness. The author suggests that the delay of silver may some time be utilized to obtain oxygen direct from the atmosphere.

W. Spring has investigated the cause of the different specific gravities of one and the same metal as it passes through different states, showing that the metallic ingot is dissolved, and that the mercury imparts to the dissolved metal a feeble and incoherent gravity. The investigation of this subject throws a light on the question of the rate at which metal dissolves in other substances.

H. W. H. L.
and the much greater solubility of solids may be easily explained by the efficiency of gases between the molecule and liquid. The law of solubility given by Graham is in perfect agreement with the assumption that the dissolved gases maintain their nascent form in solution. The same is true of solutions in liquids.

atmos.-Under the title of “Organic Acids,” Prof. W. H. S. Gibbs describes a class of compounds of molybdenum and vanadic acids with other mineral acids, resulting from substances of very complicated constitution. At least ten series of complexes have been described, containing molybdenum and vanadium, and a similar range of compounds may be found among the salts of many of the other elements. Compounds have also been found in which the methyl, ethyl, and propionyl groups occur. As an instance of the complexity of some of these compounds, Gibbs gave the body 60 \( \text{WO}_3 \cdot 8\text{O}_4 \cdot 18\text{BaO} + 150\Delta \text{O} \), which has a molecular weight of 20,066. He also described and ortho-sulpho-benzoic acids, Prof. S. M. inferred that the latter might act in the same way that the former did and thus compounds analogous to these might be obtained. Experiment with this. A mixture of potassium ortho-

anoxoe and resorcin heated with sulfuric acid and treated with caustic soda, and the sodium with derivative and substitu-

te of sulpho-benzoic acid, gave rise to products for which the designation "pilho-phenylalcaulesces" is proposed.

ve, of Tidius, in the “Journal” of the Chemical Society, describes a form of the idea that was suggested to them by some of the reactions of hemiacanthose that that substance might be a mixture, have obtained from it, by treatment with sodium chloride and acids, four new forms of albumose, which they designate as follows:

No. I. Precipitated by excess of sodium chloride, soluble in cold and hot water: protalbumose.

No. II. Precipitated by excess of sodium chloride, insoluble in cold and boiling water; but, on the other hand, soluble both in strong and dilute solutions of sodium chloride: deuteralbumose.

No. III. Similar to No. II, but insoluble in solutions of sodium chloride: heteralbumose.

No. IV. Not precipitated by excess of sodium chloride, but precipitated by sodium chloride and acids; soluble in water: dysalbumose.

The "nem" of the name is retained in each case. While these several forms of albumose differ somewhat in their general properties, the percentage composition of the various products shows a remarkable degree of uniformity. The existence of these substances and the differences in their properties throw some light on the facts, previously determined, concerning "soluble" and "insoluble" albumose, and that of the contradiction regarding the precipitability of albumose in part by sodium chloride alone, and in part only by the united action of an acid. What was previously designated "insoluble" hemiacanthose consists of heteroalbumose, double only in boiling dilute sodium chloride, which, after once being boiled, separates in great part on cooling. "Soluble" hemiacanthose correspond to both protalbumose and deuteralbumose, or to a mixture of both those bodies. When protalbumose is obtained free from deuteralbumose, it is at once evident, from the
finally non-precipitable after their solutions have been treated with caustic alkalies or strong acids, find their explanation in the properties of heterobasimose and dysbasimose. Such appearances can be observed in the case of protobasimose and dysbasimose only when extraordinarily concentrated solutions, or solutions rich in salt, are used.

Mayer has recently separated from benzene oils thiofen, a substance the composition of which is represented by the formula C₆H₅S. It presents a close analogy in general reactions with benzene, and reacts with diketones to form highly colored compounds.

**New Processes.**—Prof. H. W. Vogel reported to the Physical Society in May on the final practical results of the researches which he has conducted for many years on the means of photographing colored objects in their natural shades. Sensitive plates are known to be affected only by the more refrangible rays, while the less refrangible rays remain inoperative. Hence quite unnatural pictures are obtained of colored objects, for in them blue, even in the darkest shades, appears as white; and yellow and red as black. In view of the fact that the sensitive collodion is affected only by such rays as are absorbed by it, Prof. Vogel has been for years occupied with the attempt to make his plate sensitive to less refrangible rays by alloying the silver coating with a substance capable of absorbing those rays. The experiment was successful so far as the natural colors were concerned, and the plates prepared according to the theory invariably produced an effect in the solar spectrum wherever the absorption bands of the alloy were found; but it was impossible to obtain like results with artificial colors. Many coloring substances which, when blended with the collodion, beautifully reproduced the yellow of the solar spectrum, were ineffective against the artificial and fainter yellow of painters. Prof. Vogel continued his experiments, and new and brighter colors were discovered, till he succeeded in obtaining in eosine and its derivatives coloring substances possessing hardly more than a broad absorption band in the yellow, which, when mixed in due proportion with the dry gelatine plates, gave the yellow of the colored objects quite clear in the photograph; but the blue was still always brighter. Finally, inserting a yellow glass between the object and the camera, he secured a partial absorption of the blue rays while the yellow was left unimpaired, and obtained photographs in which the blue as well as the green and yellow, and partly even the red parts of the colored objects, presented the vivid effects of the original.

A modification of Dumas's method for the quantitative estimation of nitrogen is suggested by Mr. Stillingsfleet Johnson. Taking a long combustion-tube, he draws out one extremity into the form of an S. Freshly reduced metallic copper is packed into the front of the tube; behind this is a layer of cupric oxide; and at the extreme back of the tube a porcelain boat is introduced, containing in the front half the substance to be analyzed, while the remainder is filled with inclosed and powdered potassium chloride. The air having been expelled from the cold apparatus by a stream of carbonic dioxide, a low red heat is applied to the whole of the front part of the tube, to within an inch of the boat containing the substance, while carbonic dioxide still continues to be passed over. When complete expulsion of nitrogen from the ignited copper oxide has been insured, the receiving apparatus for the substance under analysis is arranged, and the heat is gradually extended—the stream of carbonic dioxide still passing backward toward the porcelain boat, care being taken not yet to disturb the potassium chloride. As soon as the evolution of nitrogen from the destructive distillation of the substance to be analyzed has ceased, the heat is allowed to extend to the potassium chloride, when evolution of oxygen gas ensues. The remainder of the analysis is simple.

M. S. Wroblewski has shown that a fall of temperature of —186° C. can be obtained by the expansion of liquid oxygen. In continuing his work, he discovered that a hydrogen thermometer of small size could not be depended upon, and therefore adopted a thermo-electrical apparatus, the inducements of which were afterward compared with a large hydrogen thermometer. By this method of working at the low temperature of —300° C., the reading of a volt could be measured, corresponding with a change of ½ of a degree in temperature. With this apparatus the author has been enabled to measure the boiling-point of oxygen, of air, of nitrogen, and of carbonic oxide under the ordinary pressure; these gases having been obtained as liquids by leading them from a metallic receiver, where they are already compressed to 100 atmospheres, into a glass tube closed at one end and immersed in liquid oxygen. On the expansion of the oxygen, the compressed gas is liquefied. When the expansion is accomplished, the connection of the tube with the receiver is broken, and it is brought to the atmospheric pressure; the liquid gas boils at a temperature corresponding to this pressure. M. Wroblewski obtains the following results:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Boiling-Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen</td>
<td>−354</td>
</tr>
<tr>
<td>Air</td>
<td>−273</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>−265</td>
</tr>
<tr>
<td>Carbonic Oxide</td>
<td>−100</td>
</tr>
</tbody>
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On evaporating these gases in vacuo, a temperature of —200° C. can be obtained. It results from the above that ordinary air promises to be the refrigerant of the future. It does not have to be prepared, only compressed to the point of liquefaction, and then applied.

The ordinary process for the extraction of sulphur at Freyberg in Sicily and Italy by roasting in kilns, or *cascaloni*, is wasteful of sulphur, and causes poisoning of the air by
various vapors to such an extent that the Government has limited the "burning" of coke to particular months. A new process is being put in practice by M.M. de la Tour and Dubrel in which the coke is heated with solution of chloride of calcium boiling at 130°, when the sulphur melts gradually, and is swum off from the heating-tank directly into the air. In the apparatus first employed, cokes of the cokes were completely disintegrated. Modifications have been made in it, by which all kinds, even the fine powder at the base, are economically treated. The new method presents great advantages over the older methods, in that it allows the extraction of the greater part of the sulphur from cokes of very kind, at a minimum cost for fuel; that the extraction is effected regularly under a correction from atmospheric influences; that the work can be carried on throughout the year, as the sulphuric acid froths are formed; and that it permits the treatment of the cokes according to the demands of the trade.

H. A. Godden, of London, has patented a method for producing aluminum, the new feature of which consists in bringing the aluminum chloride and metallic sodium together in the form of vapor. The aluminum chloride is formed by treating corundum orite with fluorine of sodium or potassium, and passing chlorine through the mixture of the pulverized roasted mass with charcoal.

M. Weldon proposes to obtain aluminum by using cryolite with calcium chloride, or other non-metallic chloride or sulphide and recrystallizing the aluminum chloride or sulphide with metallic manganese.

By another process H. M. Isworth mixes ferrosilicon with aluminum fluoride in molecular ratios of 50:1, and when reduced by electric arc, the aluminum unites with the copper, and the iron remains with a very small quantity of alumina. Pure aluminum is obtained by heating aluminum chloride with silicon.

C. O. Hutchinson disposes of sewage-sludge, the slimy mud deposited from sewage, by filtration in filter presses of special construction. The press-cakes thus obtained still contain about 50 per cent. of water, are inodorous, and dry rapidly down to about 20 per cent. of water. A mixture of equal parts of aluminum and calcium sulphates is used as a precipitant before filtering the sludge. The press-cakes are fully equal to farm-yard manure as a fertilizer. At Coventry, with about 45,000 inhabitants, 456 tons of wet sludge are treated annually, at a cost of sixpence per ton, or of half a crown per ton for the pressed cake.

H. R. Proctor modifies Loewenthal's method for the estimation of tannic acid in cast-iron and spigole vom by precipitating the iron as ferrous phosphate in presence of acetic acid, which retains the manganese dissolved. The metal is treated with hydrochloric acid, ammonia, acetic acid, and sodium phosphate, for the precipitation of the iron, and the manganese is afterward precipitated as the crystalline, very insoluble ammonio-phosphate.

A new method for the volumetric estimate of the nitrates, based upon the formation of diaceto-benzine from aniline by the action of nitrous acid, has been devised by A. G. Green and S. Rideal. The least excess of nitrous acid remaining after the reaction is complete, is indicated on adding starch and potassium iodide. The estimate is accurate to less than 0.1 per cent. The authors represent that, in addition to its greater delicacy, their method can be used in many cases where, owing to the presence of oxidizable substances, the permanganate process is inapplicable.

A. Petit describes a new process for the determination of cinchonas, by adding ammonia to the ethereal solution of the powdered bark, with alcohol, treating with sulphuric acid, and precipitating the alkaloids with caustic soda. The acid solution of the alkaloids is then treated with ether and ammonia for the removal of those that are soluble in ether, after which sulphuric acid is again added, and the quinine sulphate is made to decompose with ammonia and boiling, to separate in the form of fine crystalline needles.

**Industrial Chemistry.**—In a report on glucose, made by a committee of the National Academy of Sciences, for the Commissioner of Internal Revenue, besides the mode of manufacture of starch-sugar, and the nature of the products obtained, attention is given to the effect of those products on health. So far as the products made from corn-starch are concerned, no experiments have been made with reference to their effects upon the system. The pure chemical substances, dextrose, maltose, and dextrine, derived from the manufacture, are certainly not injurious, but there may be impurities in the commercial product, or, when fermentation of the commercial products takes place, substances may be developed, or substances may be left unfermented, that are of an injurious character. Experiments have been made in Germany with dextrose from potatoes in that gave opposite results. Schmitz and Nessler found the fermented products of potato-sugar to cause sickness in cats and dogs, and in some cases in men. Fayed von Mering, on the other hand, experimented in much the
same way that Schmitz and Nessler had, and concluded that the unfermentable residues from potato-sugar were not at all objectionable.

Dr. J. R. Duggan, of Johns Hopkins University, has performed special experiments on the fermented products of corn-starch sugar, which he continued through two months, swallowing frequent large doses of various extracts. During this time he felt nothing that indicated that the extracts contained anything injurious.

As regards the action of sunlight or diffused daylight upon colors fixed in dyeing, M. De caux has proved by a long series of comparative experiments that the shades dyed upon wool in the vat, with Prussian blue, cochineal, madder, weld, and fastic, are much more permanent than those obtained with Nicholson blue, magenta, jaune d’or, and picric acid. Four of the coal-tar colors differ from the rest of their class as regards stability. They are the pon cave, called naphthol carmine, orange No. 3, chrysoine, and artificial alizarin. Colors for painting in water and oils are divided into the absolutely permanent, the moderately permanent, and the fugitive. If used with water, all the most beautiful reds, carmine, carmine-lake, most madder-lakes, and vermillon, fall under the fugitive class. If mixed with oil, the madder takes rank as moderately permanent. The action of the arc electric light is similar to that of the sun, but it has only one fourth of the power.

Several instances have been reported of the decomposition of explosive gelatine on keeping, or after exposure to moderate temperatures. Gen. H. L. Abbott mentions the decay during the winter and spring of 1861–62 of the samples of this substance that remained on hand after the experiments of the former year in submarine mines, the gelatine separating into cellulose and free nitro-glycerine, with copious evolution of nitrous fumes. Mr. Charles E. Monroe has observed the decomposition of a package of camphorated explosive gelatine in a room of fairly even temperature and dryness, after more than a year’s exposure. It was observed to be giving off nitrous fumes; the outside of the paper containing it was covered with a congeries of fine crystals, while the odor of camphor was still quite strong. The mass was friable in water, and disintegrated after a short immersion. The camphor odor shortly disappeared, the water became of a straw-color, and showed traces of nitrous, but no nitric acid. Oxalic acid crystallized out in quantity on evaporation of the filtered liquid, and a sugar-like mass, giving the glucose reaction with Fehling’s solution, was obtained on evaporation of the “mother-liquor.” The paraffine was regained unchanged, and the paper was recovered in a flocculent condition, with the color bleached. No glycerine, nitro-glycerine, or gum-cotton was detected.

Experiments by E. J. Mills and A. G. Rennie with purified Cashmere wool and a 0.02 per-cent. solution of rosinamline acetate showed that the maximum dying effect was produced at the temperature of 81.1° C., the minimum of effects being at —1.46° and +61.15°. Using the rosinamline salt in excess, the maximum deposition of color occurred at 89° C., and the minima at about 0° and at 85°. With marseine the maximum was at about 49° C., and the minimum was calculated on one side as —22.6° C., while on the other side it was not reached at 85° C., though the diminution was marked. The conclusion was reached that where an aniline color is susceptible of dissociation there is positive disadvantage in using high temperatures in the dye-bath.

Arthur H. Elliott, of the Columbia College School of Mines, has made some satisfactory experiments in the derivation of anthracene from water-gas tar. Two series of experiments made it evident that this tar is particularly rich in anthracene, the second series giving 2.68 as the total percentage in the original tar. This is equivalent to four or five times the amount contained in ordinary coal-tar, that being given at 0.3 to 0.4 per cent. These experiments assume importance in view of the facts that anthracene is the most valuable of the higher members of the aromatic hydrocarbons, on account of its use in the production of alizarine, and that water-gas is destined to be used more extensively in the United States than it now is.

A. Remont has described a process for the determination of the wool, silk, and cotton in tissues. Four portions of the cloth are taken, of equal weight. One part is put aside, and the other three parts are boiled in hydrochloric acid for the removal of the dye and weighting matters. One of the boiled swatches is laid aside, and the other two are exposed to a boiling solution of basic zinc chloride, drained, washed, and dried, for the removal of the silk. One of these two swatches is then laid aside, while the other is boiled for a quarter of an hour in soda-lye. All the four swatches are then heated for fifteen minutes in distilled water, pressed, and allowed to lie in the same room in which they had been previously kept. The next day they are weighed. The difference in the weight of the swatch first laid aside and that of the second swatch represents the dressing, that between the second and the third gives the silk, and the weight of the fourth swatch represents approximately the vegetable fiber present, although it has suffered some loss—amounting possibly in the case of cotton to 5 per-cent.—from the action of the soda. Multiplying the figures by 50, we obtain the percentage of dressing, silk, and vegetable fiber. The remainder is the wool.

A. Livache uses manganese to accelerate the drying of oils. He finds that while an ordinary drying oil containing lead dries in twenty-four hours, a similar oil containing manganese dries under the same conditions in from five to six hours. Copper, zinc, cobalt, nickel, iron, chrome, etc., prolong the time of drying to from
ix to forty-eight hours. In practice M. takes an ordinary lead-oil, adds dry cases sulphate in fine powder, and agi-
tions some time in the cold. The magnesium
ly substituted for the lead, and the oil
free from dregs by simple decanta-
tesses an extreme drying power.

**CHEMISTRY.**—The water supplied to
m, Wales, after being carried half a
rough a galvanized iron pipe, was
to have absorbed 641 grains of zinc
on, the water at the spring being
in that element. Mr. O. W. Heston
irmed the analysis by an experiment
owed water capable, with the aid of
and carbonic acid, of dissolving zinc
in it. The subject of the solution of
water in contact with it, was discussed
as Stevenson in the "Guy's Hospital
or 1873." Dr. Stevenson there stated
being employed to arrange the
for a private house, he ordered
water from the slate-covered premises
ought in through iron pipes. Contrary
structions, galvanized pipes were used,
that came through them was
after several weeks, to be turbid and
and was found to contain a notable
of zinc in suspension, and some in
It is pointed out, in the "Sixth Re
the Rivers' Pollution Commission,"
ain polluted, shallow well-waters, con-
much dissolved oxygen, and but little
acid, possess the property of acting
ly on both bright and tarnished
that, when galvanized iron pipes are
water is impregnated with zinc in-
lead. The water of Loch Katrine,
both bright and tarnished lead, ex-
ks galvanized and the presence of
r water is easily recognizable by the thin
which forms on the surface of the
then the latter is exposed to the air.
sson remarks that zinc in solution in
waters is best detected by the addition
one ferrocyanide to the clear water
ulotion with hydrochloric acid. A
d cloud will immediately form if zinc be

Venables, Ph. D., of the University of
olina, relates an instance of zinc-im-
water which came under his obser-
The water was brought by galvanized
es, and stored in a zinc-lined tank
white-lead. It became somewhat
metallic-tasting, and its use for
purposes was discontinued. On anal-
water in the tank was found to con-
3 grains of zinc carbonate per gallon,
ace of iron, and no lead. Water from
ave 429 grains of zinc carbonate per
and a trace of iron.
ng to determine the conditions under
the soap-test for hard water fails, Mr. 
Jackson found that the presence in
of the salts of either calcium or
magnesium, in quantities sufficient to give 28°
of hardness on Clark's scale, invalidated the
test. In the case of waters containing the
salts of both metals, if the salts of mag-
nesium were in solution in quantities suffi-
cient to give more than 10° of hardness, no
evidence could be obtained of their presence
so long as the salts of calcium in the same
water exceeded 6°; in such a case, a perfect
and permanent lather was produced when
soap had been added equivalent to 7° of
hardness. Reliable results were obtained on
diluting the water so as to reduce the propor-
tions of the salts below those stated above.
When the water was heated to 70° C., a com-
plete reaction was caused between the soap
and the salts. With one of the constituents
of the soap, sodium oleate, perfectly trustworthy
results were obtained in very hard waters
without either diluting or heating.

The water of the river Oder above Breslau,
in its course through the city, and for fourteen
kilometres, or about ten miles, below the town,
has been examined by Franz Hulsa to deter-
mine the effect of sewage upon its purity.
From the point where the water-supply of
Breslau is pumped up, to a little above the
town, the water undergoes a slight but appro-
ciable deterioration, but after filtration is quite
suitable for domestic uses. In passing through
the city, a continuous change for the worse
takes place, which is manifested by the in-
crease of oxidizable matter and of chlorine,
and by a hundred-fold augmentation of am-
nia and albuminoid ammonia. Microscopic
examination disclosed the abundant presence
of organisms of putrefaction. Farther down
was observed a gradual process of self-puri-
fication by contact with oxygen, along with the
cooperation of vegetable and animal life in the
stream. Ten miles below the city the influ-
ence of sewage could not be detected either by
chemical or microscopic examination.

According to the statements of Prof. Petten-
kofé, at the Hygiene Congress in Berlin, the
poisonous effects produced by coal-gas are de-
pendent upon the presence of carbonic oxide
in the proportion of about ten per cent., while
the other constituents of the gas, although ir-
respirable, do not act as direct poisons. The
danger in breathing the gas does not depend
so much upon the duration of the exposure to
a mixture of air and carbonic oxide, as upon
the amount of the latter contained in the air.
Air containing only 1 parts of carbonic oxide
can be breathed for a considerable time with-
out injury to health; a proportion of seven or
eight to 10,000 causes appreciable discomfort;
of twenty to 10,000, difficulty of breathing,
weakness, and uncertainty of gait; a propor-
tion of twice that ratio leads to stupefaction;
and higher proportions to extreme and fatal
effects referable to the nervous system. Gas-
nickness increases in the winter months, large-
ly, probably, because the rooms are closed and
the gas is drawn in through the arti-
ficial heating. Variations in the degree of cold between one night and another account for corresponding differences in the gravity of the poisoning effects produced. Gas filtered through the soil from the mains may be quite odorless until it has collected in large amount, and herein lies the danger to dwellers in the basement. The remedy, when symptoms (headache) of gas-poisoning occur, is to open the windows.

Atomic Weights.—Thomas Hilditch has called attention to possible sources of error in the determination of the atomic weight of oxygen, arising from the fact that the hydrogen used in the experiments has been obtained by the solution of impure zinc in sulphuric acid, and is liable therefore to contain foreign admixtures. Among the substances with which it may be infected are hydrides of carbon, sulphur, antimony, and arsenic, sulphur dioxide, carbon dioxide, oxides of nitrogen, free oxygen, nitrogen, and water. He suggests that, in future determinations of oxygen, the hydrogen should be derived from the electrolysis of water.

From the closely coordinate results of seven experiments with cerium chloride and silver nitrate, H. Robinson has determined the atomic weight of cerium at 140.2999, silver being 107.93.

A few years ago Nilson and Pettersen, concluded from their experiments on the specific heat of glucinum, or beryllium, that the atomic weight of that element is 13.56, and not 9.1, as had generally been assumed. This was challenged, and Nilson re-examined the question, and claimed to have confirmed their former result. Recently, however, they have gone into the subject again, and now announce that their former conclusion was wrong, and that the old figure of 9.1 is correct.

Prof. Cleve has described methods for extracting and purifying the earth samarium. From determinations of the amount of sulphate obtained from quantities of this oxide, he calculates the atomic weight of the metal as 150. Various salts of samarium are described. The metal is closely allied to didymium.

Bougartz has made a series of new determinations of the atomic weight of antimony by a method proposed by Classen, which consists in oxidizing by means of hydrogen peroxide the hydrogen sulphide set free from antimonious sulphide by hydrogen chloride. The results of twelve experiments gave a mean of 129.193; a number which confirms the values heretofore obtained by Schenider and by Cooke.

Friedel, having obtained some exceptionally pure and white specimens of diamond, very free from ash, has submitted them to combustion in a current of oxygen, by aid of a carefully adjusted apparatus, with a view of determining the atomic weight of carbon. In the first of two combustions, 0.4705 gramme of clear white Cape diamonds gave 1.728 gramme of carbon dioxide. Since the ash weighed 0.0007 gramme, the carbon consumed weighed 0.4698 gramme and a loss of 0.0001 gramme carbon was at the moment gives 12.017 as the atomic weight of carbon. In a double determination 12.007 was obtained.

The following recent redetermination of atomic weights have been published: Thorpe, titanium = 48; by Baugby, nickel = 58.75; by same, copper = 63.46; by Böttger, tellurium = 126; by Lowe, bismuth = 209.16; by Mariangis, bismuth = 208.18; magnesium = 24.

Analytic Chemistry.—Prof. Dittmar has published a report on the composition of sea water as determined by the analyses of samples collected during the Challenger Expedition from various parts of the oceans and different depths. It embodies the results of seventy-seven complete analyses that were made. Leaving out of view those of the thirty elements known to exist in sea-water which are present only in too minute quantity to be determined in small samples, attention was given to accurate estimation of the chlorine, sulphate, sodium, potassium, lime, and magnesium, principle previously declared by Forchhammer that the percentage composition of the sea water is the same in all parts of the world was confirmed, and was extended to all depths except in the case of lime, the proportion of which increases with the depth. The percentage of carbonic acid was determined with difficulties, but the observation gave the results that one. Free carbonic acid in sea-water is the exception; as a rule the carbonic acid is less than the proportion corresponding to bicarbonate. In sea waters the proportion of carbonic acid increases when the temperature falls, and decreases when the temperature rises. In equable regions it seems to be lower in the surface waters than in the deep water. The Pacific than in the surface waters of the Atlantic Ocean.

In regard to alkalinity, the analyses indicate that in sea-water salts there is a distinct pendance of base over fixed acid. The identity of bottom waters was found to be distinctly greater than that of those from surface, and this increase was exactly proportional to the larger quantity of lime present in the former. The determination of the sum of oxygen and nitrogen held in solution not wholly satisfactory, and Prof. Dittmar gives his results only tentatively. The amount of air which ought theoretically to be absorbed by sea-water of the temperature and pressure at which each sample was collected was first calculated, and then, from the amount of nitrogen found, the quantity of oxygen which should be associated with it was deduced. The quantities of air found in solution were usually in excess of calculation, and might be expected when it is recollected that the water of the ocean is always in motion under the influence of temperature and pressure to which it is subjected.
being very different at different places; the fact that absorptiometric exchange had not far enough to reproduce equilibrium account for the few cases in which the odor gases exceeded the amount calculated.

Hartley has made experiments in the field of photography to quantify the gas analysis in the case of a number of objects.

The sensitiveness of the spectrum requires reports to be collected when the magnesia compounds dissolved in water. With a given length of spark, the diagram of that metal could easily be traced. When the strength of the spark was increased, but the striking distance between the electrodes was left unaltered, the difference was increased ten thousand fold. The drop of magnesium was detected in 10,000 parts of water. The spectrum region of arsenic is the weakest, and those of tellurium and tellurium are weak, while that of ruthenium is not strong. Evidence is afforded of the nitrogen spectrum that it invariably the longest, or strongest line, is most persistent. Even the longest lines become increasingly more obviously the solutions, and of the pairs of lines in the spectrum, is the one that is definitely attenuated, yet long lines till they disappear.

Smetham has reported the results of his analysis taken from the lower end of a silo about nine feet in depth, some 100 feet after the grass was put in. Samples taken from between one foot and one inch, and from between one foot six inches and two feet from the bottom. A sample of bottom layer was also examined, to determine to what extent the excess of water necessed the quality and the nature of the silage. An increase of mineral matter was observed, which was due to the salt that is used when preparing the silage. A loss of 5 per cent. of nitrogenous compounds was observed with the grass, but gain in nitrogen as compared with the grass made into hay. It was made clear that the conversion of indigestible fiber into compounds which has been claimed for the dust has been overestimated, and that the substance by fermentation has, by many, sagged. Among the more important of the investigation is the direct test of ensilage a considerable portion of lattice albuminoids is rendered soluble. W. Dabney, Jr., and B. von Herff, North Carolina Experiment Station, report the comparative values of the "Ruffe" and of the "copper oxide" or "absolute" method for the determination of nitrogen in their experiments. They compared the Ruffe method very nearly as well as its author, always using Bohemian tubing, but have not tried it with a copper oxide, but have been tested; this method has the advantage of imple, cheaper, and somewhat quicker than the copper-oxide method. There are fewer risks to run, fewer combustion-tubes break, and for several reasons a much larger percentage of complete analyses are obtained by it. In using the copper-oxide method, the authors followed in the main the course described by Prof. Johnson, but without finding it necessary to pass oxygen; so they could omit the chlorate of potash from the end of the tube. In analyzing compounds rich in nitrogen, and especially those containing much nitrate, the addition of charcoal-powder to the substance causes the nitrogen to come off more regularly, and gives generally better results. Excellent results were obtained in jetting the air before combustion, and the nitrogen afterward, out of the tube, by using carbonic dioxide, without a pump, though that required more time than when a good pump was used. Magnesite or carbonate of manganese, put in the back end of the tube, are the best sources of carbon dioxide for this purpose. Bicarbonate of soda can be used also. A combination of this method with a good pump is effective and thickens the process. The authors have devised an improved pump for the purpose. Their analyses as a whole show that in fertilizers containing small amounts of nitrogen, the Ruffe method and the copper-oxide method give equally good results. By the copper-oxide method the errors are apt to be in the direction of too much, by the Ruffe method in the direction of too little.

For the determination of very small quantities of silver, Carl Friedrich Fohr uses a combination of the ordinary dry process and the blowpipe test. His method does not require any more time than an ordinary assay, and the determination by it may be completed in four and a half or five hours. It is accurate for portions of silver that only form fractions of a thousandth per cent., and is especially suitable for very poor silicates.

Agricultural Chemistry.—The origin of the dark green circles of grass alternating in some seasons with fungi, which are called "fairy rings," after having been a subject of inquiry since it was brought under attention in the Royal Society's "Transactions," has received a new explanation from the studies of Moser, Lawes, Gilbert, and Warrington of Rothamsted. Believing that the growth of the fungi was owing to some extraordinary water power they had of assimilating nitrogen either from the atmosphere or from the soil, the authors tried direct experiments to determine the question. Samples of soil were taken from within a fairy ring, from immediately upon the ring itself, and from outside of it. Of these specimens the soil from within the ring yielded the lowest percentage of nitrogen, that from the ring itself a higher percentage, and that from outside of the ring a higher percentage still. The soil had therefore lost nitrogen by the growth of the fungi, and the obvious conclusion was that the fungi possess a greater power than the grasses of abstracting nitrogen from the soil. The analyses of the various
species of fairy-ring fungi do not greatly differ. Two species occurring at Rothamsted contain nitrogenous compounds to the amount of one third of their dry substance, and give an ash rich in potash and phosphoric acid. Their occurrence in pastures and continuance in growth are dependent on conditions of manuring and of soil and season. They are rarely developed on rich soils, or on those which are highly manured, or in seasons favorable to the general herbage of the turf; but they prevail wherever the growth of the grass is inferior. Previous to this discovery at Rothamsted, it was not known that any plant could feed directly on the organic nitrogen of the soil itself.

According to P. de Gasparin, all granitic, metamorphic, volcanic, chisolithic, and calcareous rocks contain phosphoric acid. It may be said that about 5 per cent. of the phosphoric acid is combined with organic matters, and it is mainly this 5 per cent. which furnishes phosphoric acid to plants. This small accumulation may be increased by adding manure. To determine phosphoric acid, the author recommends that the sample of earth should be treated by aqua regia having an excess of hydrochloric acid. In the filtered liquid ammonia is added slowly, and not in sufficient quantity to make the liquid alkaline. Afterward an excess of ammonia is added, and all the phosphoric acid is left in the precipitate. This is calcined, ground to a fine powder, and treated with nitric acid of 3 per cent. strength; The filtered solution is precipitated by ammonium molybdate, etc.

Mr. R. Warington's experiments at Rothamsted have confirmed the soundness of the theory of Meers, Schloesing and Ments, that nitrification in sewage and in soils is the result of the action of an organized ferment. The evidence for this theory is now very complete. The process of nitrification is strictly limited to the range of temperature within which the vital activity of the living ferment is confined, going on with slowness at 0° C., reaching its maximum at 37°, and ceasing at 55°. It is also dependent on the presence of plant-food suitable for the formation of organisms of a low character; it is prevented by antiseptics and by heating to the boiling-point; and it can be started in boiled sewage or other sterilized liquid by the addition of a little surface soil or a few drops of a solution already nitrified. Evidence of the presence of the nitrifying organism have been found in the soil from the surface down to a depth of eighteen inches, which may be regarded as the limit in an ordinary clay soil. In a sandy soil and a clay that is penetrated by worms, it may go lower. It is most abundant in clay at about six inches below the surface. The analyses of soils and drainage waters have taught that the nitrogenous humic matter resulting from the decay of plants is nitrifiable; also that the various nitrogenous manures applied to land, as farm-yard manure, bones, fish, blood, rape-cakes, and ammonium salts, undergo nitrification in the soil. As ammonia is so readily nitrifiable, we may safely assert that every nitrogenous substance which yields ammonia when acted upon by the organisms present in the soil is also nitrifiable. Besides ammonia, two amides and two forms of albuminoids have been found nitrifiable, but in those cases the formation of ammonia preceded the formation of nitric acid. In a solution containing a nitrifiable substance, supplied with the nitrifying organism and the food-constituents necessary for its growth and activity, the rapidity of nitrification will depend on a variety of circumstances, among which are the weakness of the solution; temperature; deficiency of light; the presence of oxygen; the quantity of the nitrifying organism; and the degree of alkalinity of the solution.

A. Guyard recommends the following tests for the determination of nitrogen in the soil: For ammoniacal nitrogen, calcium carbonate, 10 grammes to 100 grammes of soil; for organic nitrogen readily transformable into ammonia, magnesium subcarbonate, five grammes; for nitrogen tolerably easily converted into ammonia, calcined magnesia, two grammes; for nitrogen transformable into ammonia, calcined lime, one gramme; for second portion of nitrogen transformable into ammonia, caustic potash or soda 0.5 to one gramme; finally, organic nitrogen by combustion with soda-lime.

Vegetable Chemistry.—Hansen, assistant to Prof. Sachs, has published accounts of his more recent researches on the composition of chlorophyl. The coloring matter was extracted with alcohol from the decoction of young wheat, and the extract saponified. The soap is then precipitated by adding an excess of chloride of sodium, and the yellow constituent of the color is separated with petroleum ether. The soap is then cleansed with ether and treated with a mixture of ether and alcohol, which removes the green constituent; when purified and separated from the solution, this crystallizes out in beautiful spherical crystals. Chlorophyl green is opaque in the solid state, and appears of a black-green color, possessing no fluorescence, although it has that property (red) in solution. It is shown that some of the changes it appears to undergo with acids as described by authors are not due to their action on pure chlorophyl green, but on other unknown bodies. It is free from sulphur and from iron. The elementary analyses agree very closely, and, calculated for the ash-free substance, are as follows:

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<tr>
<th>L</th>
<th>Per cent.</th>
<th>Per cc.</th>
<th>Per cc.</th>
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<tr>
<td>C</td>
<td>67.36</td>
<td>67.34</td>
<td>67.36</td>
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<tr>
<td>H</td>
<td>10.25</td>
<td>10.20</td>
<td>10.25</td>
</tr>
<tr>
<td>O</td>
<td>14.97</td>
<td>14.92</td>
<td>14.97</td>
</tr>
<tr>
<td>N</td>
<td>0.51</td>
<td>0.50</td>
<td>0.51</td>
</tr>
<tr>
<td>Total</td>
<td>99.79</td>
<td>99.77</td>
<td>99.79</td>
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The amount of carbon is 1 per cent. too low in both cases. Chlorophyl yellow occurs in about the pre
CHEMISTRY.

...f one part to 100 parts of chlorophyll its solutions show no fluorescence, and the reactions to the contrary. The reactions of Kruekenberg's lipo-...in the solid state, namely: a blue col-...ith sulphuric acid, the same with ni-...and a green-blue with a solution of...on potassium iodide. It shows three... one half of the spectrum, but no a...n the red, and agrees in spectrum yellow coloring-matter of blanched...ol (Pinus sylvestris) has been Dr. A. B. Griffiths. The quantity...somes of solid coloring-matter.

stance of phenol in a free state in the...ular leaves, and parts of the stem of...pine (Pinus sylvestris) has been Dr. A. B. Griffiths. The quantity...n varies with the age of the part; portions yielded as much as 0.1091...while the young portions gave only 0.00093 per cent.; flowers yielded 0.0774 to 0.0998, to their maturity. This discovery is by the author as tending to show that...ch of the coal-formations is derived feroxous vegetation, and as supporting emirical point of view the opinions of that the conifer existed in that age.

suggests a possible origin for petro-...e same investigator has also found that...unure is highly capable of prope...microscopic fungi, and that the para...e potato-disease (Peronospora infest-...articular, throws out its nymphs very...t. He suggests on the basis of this...that manure may act as a medium velopment and assimilation of para...ses. The bacteria which are devel-...ure, however, completely destroy...ng the manure with solutions of fer...cate, cupric sulphate, or sodium chlo-

H. Storer has made experiments on...tions favorable to the germination of...of weeds. Selecting the seeds of...acre (water smart-weed), Polygo-...s (burr dock), Ambrosia artemisiaefolia)...), Bidens chrysanthemoides (burr dock),...ria glauca (bottle-grass), he planted...is greenhouses, where the temperature...t 59° to 68° or 70° Fahrr. by day. Except...ot-weed, only a very few of the seeds...while by far the larger part of them...and were spoiled. The experiments...ded as failures, and the lack of enc-...tributed to the fact that the tem-...though favorable to agriculture, were...too low for the germination of the seeds in question. Many of our commonest weeds are...ropical plants; and the seeds selected for these experiments, excepting those of the burdock and knot-weed, came from plants that flourish during the hot weather of the later summer months.

The results of some recent investigations on the formation of starch in the leaves of dicotyledonous plants have recently been published by Prof. Sachs. For determining the presence of starch he used the iodine test upon the leaf after it had been plunged in boiling water and immersed in alcohol for the extraction of soluble substances and color. Sachs had already shown that, if a plant was placed in the dark, the starch disappeared from the leaves; it was known that, if a piece of tin-foil is placed upon a leaf, the covered part forms no starch, although the parts exposed to the light may be filled with it; and Kraus had shown that starch can be formed very rapidly in direct sunlight. Sachs's later experiments demonstrate on a number of plants that the starch formed on the leaves during the day may disappear completely during the night, and that the leaves shown to be full of starch in the evening may be quite empty of it on the next morning. The change depends upon the temperature and health of the plant, but occurs normally during the summer in plants growing in the open. The rapidity and completion of the process depend upon the weather. It was already known that the starch disappears from the leaves in the form of glucose, which travels by way of the vascular bundles into the stems. The results of the observations made on this point led to the conclusion that the processes of metamorphosis into glucose and translocation of the products of assimilation are also going on during daylight, although they are less evident then, because more starch is being formed and accumulated than is abstracted at the time. The starch was shown to travel in the form of glucose in all the cases; but it was not proved whether the metamorphosis was effected by forces in the chlorophyl-grains themselves, or by means of diastatic ferments in the cells of the leaf. Sachs also directed his attention to the solution of the question of how much starch is produced in a definite extent of leaf-surface by assimilation during any particular period of exposure to bright sunlight; the experiments being made to show both the quantities of starch which disappear during the night and the quantities formed during the day. On the whole, Sachs concluded that from twenty-five grains of starch may be produced per one square metre of leaf-surface per day; and some plants produced much more than this. The experiments prove why plants are so vigorous during warm nights following upon hot, bright days; it is because the products of assimilation, formed in large quantities during the day, are able to pass more readily into the
growing organs. Leaves used for fodder, etc., must differ in nutritive value to a very great extent if their starchy contents vary so largely during the day and night; and it thus becomes of primary importance whether such leaves are gathered in the morning or evening, in cold or in warm weather, etc. The discoveries will also materially affect the physiological value of the analyses of leaves.

Dr. T. L. Phipson has investigated the chemical phenomena of the respiration of plants, with experiments upon some of the uncellular algae, *Achillea*, *Senecio*, *Veronica*, *Vinca*, *Galium*, and some ferns. He had many years before become satisfied that plants could not dissolve carbonic acid alone, that is, without the aid of some other chemical agent. When the fresh spring-water in which uncellular algae were cultivated had given up all of its carbonic acid, and more of that substance was added, the faculty of evolving oxygen was only slightly restored, and it became less and less manifest with successive additions of the acid; while the addition of carbonic acid to water that had been thoroughly boiled for five minutes and then rapidly cooled, produced little or no effect. "It was, therefore, evident," says Dr. Phipson, "that something else is required by the plant, and that this 'something else' is destroyed by boiling the spring-water for five minutes. It is binoxide of hydrogen that is required. It exists, and its presence can be demonstrated, in all spring-water, and it is as essential to the life of the plant as is carbonic acid."

An Association of Official Chemists.—An Association of Official Chemists of the United States was organized during the last meeting of the American Association at Philadelphia. Chemists of the Department of Agriculture, State agricultural societies, and boards of official control, are eligible to membership in the Association. The members of the organizations thus represented is entitled to one vote on all matters on which the society may ballot, while other chemists are invited to attend the meetings and take part in the discussions, without having the right to vote. Prof. S. W. Johnson, of Connecticut, was elected president.

**CHILLI,** an independent republic of South America.

**Area and Population.**—The area of Chili, 217,634 square miles previous to October, 1881, has since that time been increased to 340,179 square miles by successive territorial accretions, namely: part of Patagonia (about 83,291 square miles), in virtue of the treaty with the Argentine Republic, bearing the above date; the territory of Antofagasta* (19,888 square miles), conquered from Bolivia; and the province of Tarapacá (19,876 square miles) ceded by Peru under the treaty of Ancon. The territorial division is into eighteen provinces and four territories, which, with their respective areas and populations (on Jan. 1, 1882), are as follow:

<table>
<thead>
<tr>
<th>Province</th>
<th>Area in square miles</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aconcagua</td>
<td>1,215</td>
<td>150,000</td>
</tr>
<tr>
<td>Aranico</td>
<td>31,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Atacama</td>
<td>100,782</td>
<td>74,968</td>
</tr>
<tr>
<td>Biobio</td>
<td>10,130</td>
<td>83,130</td>
</tr>
<tr>
<td>Chilló</td>
<td>50,000</td>
<td>75,041</td>
</tr>
<tr>
<td>Coquimbo</td>
<td>3,928</td>
<td>1,201,700</td>
</tr>
<tr>
<td>Concepción</td>
<td>2,935</td>
<td>310,865</td>
</tr>
<tr>
<td>Coquín</td>
<td>82,423</td>
<td>109,534</td>
</tr>
<tr>
<td>Curicó</td>
<td>1,045</td>
<td>106,604</td>
</tr>
<tr>
<td>Linares</td>
<td>9,065</td>
<td>121,161</td>
</tr>
<tr>
<td>Lima</td>
<td>150,180</td>
<td>522,888</td>
</tr>
<tr>
<td>Malalú</td>
<td>7,691</td>
<td>110,217</td>
</tr>
<tr>
<td>Quillota</td>
<td>9,210</td>
<td>140,524</td>
</tr>
<tr>
<td>O'Higgins</td>
<td>8,247</td>
<td>64,011</td>
</tr>
<tr>
<td>Santiago</td>
<td>10,267</td>
<td>811,790</td>
</tr>
<tr>
<td>Talca</td>
<td>9,207</td>
<td>114,697</td>
</tr>
<tr>
<td>Valdivia</td>
<td>19,584</td>
<td>98,776</td>
</tr>
<tr>
<td>Valparaíso</td>
<td>4,397</td>
<td>139,177</td>
</tr>
<tr>
<td>Angol (territory)</td>
<td>5,000</td>
<td>25,705</td>
</tr>
<tr>
<td>Antofagasta (territory)</td>
<td>20,015</td>
<td>74,000</td>
</tr>
<tr>
<td>Magallanes (territory)</td>
<td>190,000</td>
<td>1,911</td>
</tr>
<tr>
<td>Tarapacá (territory)</td>
<td>3,600</td>
<td>90,000</td>
</tr>
</tbody>
</table>

| Total             | 661,541              | 2,277,960 |

In this table is not included the recently acquired Patagonian region.

The population of the republic was estimated at 2,377,960 on Jan. 1, 1882. Of 2,277,949 inhabitants of the several provinces and territories (not including Antofagasta or Tarapacá), on Jan. 1, 1882, 1,125,057 were females. The number of marriages, births, and deaths, registered in 1878, were 13,110, 79,812, and 60,507, respectively. The births and deaths in 1880 were 85,782 and 70,038. The populations of the several capitals were estimated as follows in 1888:

<table>
<thead>
<tr>
<th>Capital</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santiago</td>
<td>99,000</td>
</tr>
<tr>
<td>Concepción</td>
<td>79,000</td>
</tr>
<tr>
<td>Chillón</td>
<td>18,000</td>
</tr>
<tr>
<td>Concepción</td>
<td>18,000</td>
</tr>
<tr>
<td>Valdivia</td>
<td>14,000</td>
</tr>
<tr>
<td>Copiapó</td>
<td>19,000</td>
</tr>
<tr>
<td>San Felipe</td>
<td>11,500</td>
</tr>
<tr>
<td>Aconcagua</td>
<td>11,000</td>
</tr>
<tr>
<td>Curicó</td>
<td>11,000</td>
</tr>
<tr>
<td>Linares</td>
<td>9,000</td>
</tr>
<tr>
<td>Angol</td>
<td>7,000</td>
</tr>
</tbody>
</table>

In virtue of an act of Congress of Oct. 31, 1884, the territories of Tacna and Arica (ceded to Chili for ten years, under the treaty of Ancon) will be considered as a Chillian province, and will bear the name of Tacna. The boundaries of the province are: On the north, the river Sama, from its source in the mountain-range on the Bolivian frontier, to the Pacific Ocean; on the south, the Camarones ravine; on the east, the Republic of Bolivia; and on the west, the Pacific. The new province will be governed according to Chillian law, and its inhabitants will enjoy the same constitutional rights as the people of Chili. It is divided into the departments of Tacna and Arica. The first of these has on the north, east, and west the same boundaries as the province, and on the south the Camarones ravine. The department

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* From the province of Santiago, by law of Decem-
ber 10, 1888.
+ 234,385 square miles.
‡ See volume for 1888, p. 121.
comprising the port of the same name, on the north by the department of the east, west, and south its shores of the province. Tacna is the capital of the department of its own province, and Arica is the capital of its own department. The salary of the President of the Republic is $4,000. The President of the Republic is empowered to appoint, every six years, for each of the two departments, "delas," who, jointly with the Intendant Governor, will discharge the functions of the local governing body.

Chili: Independence on Sept. 18, 1810, and the Spanish yoke after gaining the victory over the Peninsular forces commanded by Ordonez, at Maipu, April 5, 1818. The constitution framed in 1833, and amended, establishes three powers in the state: Legislative, Executive, and the Judicial. Executive power is vested in a President for a term of five years, and re-elected to the office in 1833 to the accession of Don Domingo Santa Maria in 1831, served two terms: Gen. Joaquin Prieto, 1831-1841; and M. Montes, 1851-1861; 1861-1871. Suffrage, extended only to those who can read and write, twenty of age if married, twenty-five if unmarried and registered as high, is virtually limited to the wealthy. A constantly small number of ballots return the President in proportion to that of the population—little more than one to every thousand. This is, in fact, an oligarchy, where the name of a republic is used to conceal a form of government superior to that of any other country in the world. This constitution places immense power in the hands of the supreme magistrate, a veritable blessing to the country, but a curse to the social or political ladder of society. The President is vested with the supreme power. The President of the Republic has a salary of $18,000. The Council of State, presided over by the President of the Republic, is composed of three members elected by the Senate, and three elected by the Chamber of Deputies, and a member of the courts of justice, an ecclesiastical dignitary, a director of finance, and an ex-minister or ex-intendant, appointed by the Executive. The legislative power resides in a Senate of thirty-seven members elected for six years, and a Chamber of Deputies, elected for three years, consisting of one representative for every 20,000 inhabitants. Deputies must have an income of at least $500; Senators, $2,000. The judicial power is vested in a High Court of Justice in the capital, four Courts of Appeal for the provinces, courts of first instance in the departmental capitals, and subordinate district courts.

The President of the Republic is Don Domingo Santa Maria (Sept. 18, 1811).

The Cabinet was composed of the following ministers: Interior, Don J. M. Balmaceda (April 13, 1829); Foreign Affairs and Colonization, Don A. Vergara Albano (Jan. 18, 1884); Justice, Public Worship, and Public Instruction, Don J. I. Vergara (1888); Finance, Don R. Barros Luco (Jan. 16, 1884); War and the Navy, Don C. Antunes (May 6, 1884).

Church Dignitaries, Religious, etc.—There are, besides the Archbishop of Santiago, the Bishops of La Serena, Concepcion, and Ancud. The religion of the state is the Roman Catholic, but all sects are tolerated. The clergy and the theological seminaries are subsidized by the state.

Diplomatic and Consular Corps, etc.—The Chilian Envoy Extraordinary and Minister Plenipotentiary to the United States is Don Joaquin Godoy (accredited June, 1888).

The Chilian Consul at New York is Don B. R. de Asprilea; and the Consul-General at San Francisco, Don J. de la Cruz Corda.

The United States Envoy Extraordinary and Minister Plenipotentiary to Chiloé is Dr. C. Logan (accredited in 1888). The United States Consul to Chili are: Mr. D. M. Dunn, at Valparaiso; Mr. J. Grierson, at Coquimbo; and Mr. J. F. Van Ingen, at Talcahuano.

Army.—In 1888 the regular army comprised 9 generals, 18 colonels, 79 lieutenants-colonels, 181 majors, 338 captains, and 548 lieutenants: total, 1,028 officers. There were 8 regiments of horse, 1,500 strong; 10 battalions of foot, 2,040; 2 regiments of artillery, 2,186; and a corps of substitutes, 167: total, 12,908 men.

In September, 1884, the Government presented a bill in Congress to fix the strength of the land and sea forces: the strength of the former, including the three arms—artillery, cavalry, and infantry—was not to exceed 8,000. The mobilized National Guard was to be placed in reserve for the remainder of the year. The actual strength of the latter, in 1884, was 51,826, comprising 2,076 horses, 48,151 foot, and 6,699 artillerymen. Of the total guard, 17,408
were allotted for mobilization, in case of need, for that year.

Mary.—In 1884 the fleet was composed of the following craft:

<table>
<thead>
<tr>
<th>VESSEL</th>
<th>Tons.</th>
<th>Horse.</th>
<th>Crews.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ironclad Blanco Encalada</td>
<td>2,023</td>
<td>500</td>
<td>800</td>
</tr>
<tr>
<td>Ironclad Almirante Cochrane</td>
<td>2,038</td>
<td>600</td>
<td>800</td>
</tr>
<tr>
<td>Motora Huaico</td>
<td>1,160</td>
<td>600</td>
<td>174</td>
</tr>
<tr>
<td>Corvette O'Higgins</td>
<td>1,101</td>
<td>800</td>
<td>188</td>
</tr>
<tr>
<td>Corvette Casabuseco</td>
<td>1,101</td>
<td>900</td>
<td>188</td>
</tr>
<tr>
<td>Gunboat Magallanes</td>
<td>775</td>
<td>190</td>
<td>90</td>
</tr>
<tr>
<td>Gunboat Placinayo</td>
<td>500</td>
<td>150</td>
<td>188</td>
</tr>
<tr>
<td>Cruiser Amanecer</td>
<td>1,478</td>
<td>450</td>
<td>178</td>
</tr>
<tr>
<td>Cruiser Amanecer</td>
<td>1,478</td>
<td>450</td>
<td>178</td>
</tr>
<tr>
<td>Steamer Atacama</td>
<td>1,457</td>
<td>600</td>
<td>180</td>
</tr>
<tr>
<td>Steamer Totten</td>
<td>740</td>
<td>90</td>
<td>79</td>
</tr>
<tr>
<td>Transport Chile</td>
<td>1,175</td>
<td>400</td>
<td>15</td>
</tr>
<tr>
<td>Punta Chiloe</td>
<td>900</td>
<td>30</td>
<td>76</td>
</tr>
<tr>
<td>Punta Valdivia</td>
<td>700</td>
<td>60</td>
<td>46</td>
</tr>
<tr>
<td>Punta Minghues</td>
<td>1,000</td>
<td>70</td>
<td>7</td>
</tr>
</tbody>
</table>

Total: 12,891 2,000

There were, besides, five small steamers and eleven torpedo-boats, and an additional gunboat in course of building. In January, 1884, it was reported that Chili had given orders for the construction of still another ironclad, to cost $2,000,000. "Precisely what the purpose of the Chillans, in making such important additional to their already respectable navy, may be, is not very apparent. Their immediate enemies, Peru and Bolivia, are reduced to such abject extremities that they can scarcely be counted upon in any conflict that may arise in the near future. With no other powers have they any questions likely to provoke war, unless it be the United States, on account of the so-called unwarrantable interference of the latter recently in South American affairs. Such an idea is, however, too huge a burlesque even for Chilian national pride to consider." The Government bill, referred to in the paragraph on the army, proposed the limitation of the fleet to two ironclads, one monitor, three corvettes, three gunboats, three transports, five tugs, two dispatch-boats, and a corps of marines 800 strong.

Education.—The University of Santiago, with faculties of law, medicine, mathematics, and the fine arts, was attended, in 1885, by 920 students; and the secondary school in connection with it by 1,059. The aggregate attendance at the 17 lyceums in the provincial capitals was 4,460. Besides the foregoing, there are normal, agricultural, and other special schools. The number of public primary schools in the year mentioned was 763, with 54,470 pupils enrolled, and an average attendance of 38,986; and that of the private schools 405, with an attendance of 15,106. The census of 1875 showed that more than half of the inhabitants of the republic, adults and children, could neither read nor write.

Finance.—No more recent returns have been published by this department than those given in the "Universal Cyclopedia" for 1883. On the occasion of the inauguration of the National Exhibition at Santiago, on Oct. 26, 1884, the chairman of the Exhibition Com. Don Vicente Dávila Larrain, said that nine months ended September 30th of the year, the revenue was larger by $1,164 than in the corresponding period of 1888, $3,310,123 than in 1882. The total yield of customs department in the first nine months of 1884, 1888, and 1882, was $18,420,610, $15,129,477, and $15,129,477, respectively. The message to Congress, President Santa confirmed the announcement of a saving of $13,000,000 in the national treasury, as that a saving of $4,000,000 would be realized in the current year (1884). These annals, however, could scarcely be expected to arrive from the public mind apprehensions of pending crisis. In November it was reported that the Chillans were negotiating with the United States for the purchase of 400,000 tons of guano for the Executive was then in treaty. The terms of the contract, it was added, were to be 75,000,000 to be paid in three months; with the Chilean Islands and 8,000 $363,563 and Pabellon de Pica. Many believe that by this means the crisis would be averted, while others regarded the contract as an assertion that, as long as the time the loan could be paid to Chili, it would be the financial troubles it was intended to prevent. Again, the Congress, in November, authorized the Executive to negotiate a loan of £6,000,000 in Europe, for the purpose of solidifying a portion of the foreign debt.

The estimated revenue for 1885, including the surplus of 1882, was $31,590,000, at expenditures $44,437,110, whence a result a surplus of $8,882,890. A nationalistic movement has been important revelations concerning the financial state of Chili in relation with the industries of the country, particularly that of mining. The still oppressive export duties on metals (besides the gold and silver which has been a measure of urgent need owing to the depressed condition of our trade) have declined, while that of other commodities, particularly Spain and the United States, is growing space. Not only do we see a decline in the number of miners, but our copper is now much lower price than in the prosperous days of that industry. Had the fortune not been given us the niter regions, and if it were not for the other our situation would be vastly inferior to that of the years preceding the crisis of 1870 and 1878. In 1876 they were of the value $37,846,506, gold; and in 1882, exclusive of gold and silver, $36,846,588, paper currency. But for the niter our situation would have been reverse of brilliant; and this is chiefly the decline in the production and depre
The abolition of export duties on nitrates has afforded a degree of relief to our industry and enabled it to grapple with competition of other countries. To the nitrates our mining industry is considerably enhanced; the demand has risen to such an extent that quoted figures are almost double those of last year; and these circumstances indicate increased production, while prices show some decline. By doing this, export duties and modifying the import duties on certain commodities have been averted. The importance of mining, in fact, of the export trade, the valuable commodities, will be seen from the following:

<table>
<thead>
<tr>
<th>Origin</th>
<th>1881</th>
<th>1882</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain</td>
<td>$40,000,716</td>
<td>$39,004,759</td>
</tr>
<tr>
<td>France</td>
<td>$2,484,600</td>
<td>$2,484,600</td>
</tr>
<tr>
<td>Germany</td>
<td>$2,440,560</td>
<td>$2,440,560</td>
</tr>
<tr>
<td>Argentina</td>
<td>$2,425,100</td>
<td>$2,425,100</td>
</tr>
<tr>
<td>United States</td>
<td>$2,465,000</td>
<td>$2,465,000</td>
</tr>
<tr>
<td>Peru</td>
<td>$2,492,000</td>
<td>$2,492,000</td>
</tr>
<tr>
<td>Ecuador</td>
<td>$800,000</td>
<td>$800,000</td>
</tr>
<tr>
<td>Brazil</td>
<td>$2,405,000</td>
<td>$2,405,000</td>
</tr>
<tr>
<td>Other countries</td>
<td>$1,460,000</td>
<td>$1,460,000</td>
</tr>
</tbody>
</table>

Total: $93,996,094

On comparing the foregoing sum with that of the general exports, as given below, it will be seen that the nitrates represent more than two fifths of the total value of the whole Chilian exports for the year mentioned. In the exportation of guano there was a falling off of 39 per cent, as compared with 1881, owing to the circumstances of shipments of Mejillones guano were made from Antofagasta only.

The destination and values of the Chilian exports, and sources and values of the imports for the years 1881 and 1882, were as shown in the following tables:

<table>
<thead>
<tr>
<th>FROM</th>
<th>1881</th>
<th>1882</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain</td>
<td>$27,249,257</td>
<td>$26,566,794</td>
</tr>
<tr>
<td>Germany</td>
<td>$2,425,000</td>
<td>$2,425,000</td>
</tr>
<tr>
<td>France</td>
<td>$2,440,560</td>
<td>$2,440,560</td>
</tr>
<tr>
<td>United States</td>
<td>$2,465,000</td>
<td>$2,465,000</td>
</tr>
<tr>
<td>Argentina</td>
<td>$2,425,100</td>
<td>$2,425,100</td>
</tr>
<tr>
<td>Peru</td>
<td>$2,492,000</td>
<td>$2,492,000</td>
</tr>
<tr>
<td>Belgium</td>
<td>$800,000</td>
<td>$800,000</td>
</tr>
<tr>
<td>Spain</td>
<td>$2,405,000</td>
<td>$2,405,000</td>
</tr>
<tr>
<td>Other countries</td>
<td>$1,460,000</td>
<td>$1,460,000</td>
</tr>
</tbody>
</table>

Total: $58,784,914

Of the total value of the exports for 1882, mining products of all kinds stood for $57,055,631, of which amount Great Britain, Chile's largest purchaser, took $47,058,096, with agricultural products of the value of $5,645,521, or nearly two thirds of the total quantity exported. The chief buyers of bar copper and bar silver were Great Britain, France, and Germany. The total value of the silver was $14,776,677, and of the copper, $5,986,035, and...
of these amounts Great Britain took three
fourths and nine tenths respectively. The
cooper products shipped to Great Britain dur-
ing 1876-1882 were as follow:

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Exports</th>
<th>Imports</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1876</td>
<td>88,990,710</td>
<td>11,746,816</td>
<td>1,054,120</td>
</tr>
<tr>
<td>1877</td>
<td>86,180,180</td>
<td>10,254,284</td>
<td>1,010,101</td>
</tr>
<tr>
<td>1878</td>
<td>88,160,068</td>
<td>9,826,281</td>
<td>8,993,789</td>
</tr>
<tr>
<td>1879</td>
<td>85,018,921</td>
<td>10,569,809</td>
<td>8,193,643</td>
</tr>
<tr>
<td>1880</td>
<td>85,417,019</td>
<td>12,668,310</td>
<td>8,831,109</td>
</tr>
</tbody>
</table>

The exportation of borate of lime has been
steadily on the increase, 4,311,805 kilogrammes
having been shipped to Great Britain in 1882,
against 679,920 in 1876, and 273,410 in 1874.
But, next to copper, the commodities most ex-
tensively exported to Great Britain are wheat
and wheat-flour ($4,500,400 in 1882), sugar
($663,915), and wool ($305,010). In the single
month of May, 1884, there were shipped to
the country last named 28,502,941 kilogrammes
of wheat from Talagana, and 381,800 kilo-
grammes from Penco. Chile, while an importer
of coal, mainly from Great Britain, exports
native coal in considerable quantities. The fol-
lower table exhibits the relative importance
of these two branches of her commerce for the
decade 1873-1882:

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Coal exported</th>
<th>Coal imported</th>
</tr>
</thead>
<tbody>
<tr>
<td>1873</td>
<td>21,793</td>
<td>122,907</td>
</tr>
<tr>
<td>1874</td>
<td>42,493</td>
<td>118,541</td>
</tr>
<tr>
<td>1875</td>
<td>32,393</td>
<td>105,329</td>
</tr>
<tr>
<td>1876</td>
<td>46,296</td>
<td>114,529</td>
</tr>
<tr>
<td>1877</td>
<td>101,326</td>
<td>72,940</td>
</tr>
<tr>
<td>1878</td>
<td>104,416</td>
<td>67,219</td>
</tr>
<tr>
<td>1879</td>
<td>73,298</td>
<td>65,131</td>
</tr>
<tr>
<td>1880</td>
<td>58,278</td>
<td>105,734</td>
</tr>
<tr>
<td>1881</td>
<td>92,146</td>
<td>92,479</td>
</tr>
<tr>
<td>1882</td>
<td>111,282</td>
<td>206,068#</td>
</tr>
<tr>
<td>Totals</td>
<td>656,561</td>
<td>1,074,417</td>
</tr>
</tbody>
</table>

Chief among the British products imported
by Chile are cotton fabrics (of the value of
$5,091,040 in 1882), woollen fabrics ($1,460,340),
and iron wrought and unwrought ($1,517,615).
Of the total value of these products shipped
to Chile in 1882, Great Britain furnished 75-
20 per cent.; Germany, 16-82; France, 5-08;
the United States, 2-96; Belgium, 0-41; and
Italy, 0-02. The last two, however, do not
here figure in their proper rank, since much
of their merchandise finds its way to Chile
through Great Britain, France, and Germany.
The increased importation of British cotton
fabrics, of late years, is accounted for by the
fact that extensive requisitions thereof were
made for the army.

In 1882 locomotives and railway material
generally were imported of the total value of
$939,802 (against $511,979 in 1881), of which
sum Great Britain furnished $834,422, the
United States $71,678, and France and Ger-
many the remainder. In machinery, for the
most part from England, there was an increase

* 94-78 per cent. from Great Britain.
the months ending Dec. 31, 1888, were
$90,028, against $110,294 for the correspond-
ing months of 1882, the corresponding net profits
were $65,955 and $88,004 respectively.
profits for the six months ending Dec.
were $120,416, against $115,608 for
months in 1882. The traffic receipts
Kiab Railway for the quarter ending
1888, were $161,467, against $162,564
same months in 1882; and the corre-
ger net profits, $64,277 and $79,510 re-
respectively. The net profits for the two years
were $294,767 and $319,298.

The telegraph statistics for 1884 follows
length of wires, 12,480
number of offices, 181; number of dis-
423,705; receipts, $278,749. Of the 15
belonged to the Government, with
lines.

The Post-Office statistics for
as follows: Number of offices,
letters transmitted, 19,204;
19,930; legal documents, 125;
dispatches, 428,572; newspapers,
74,776; and periodicals 398,749. Differential rates of inland
still exist in Chili, as in most of the
republics. The time
for a uniform rate of two cents
ounce for letter-postage, and the Chi-
ns has begun to urge the importance
Experience has shown, par-
the United States and in the
that a uniform and low rate,
ial system be attended
be on in Chili and else-
Again, letters in Chili, besides post-
just as important a question of a purely na-
en than the original cost of
by mail. For instance, a letter
10 cents for conveyance from
of Valparaiso, costs five cents for de-
the city pays the
for its transmission 10,000 miles.
A letter from any other province to
costs ten cents additional for de-
but a letter from any part of the
Valparaiso to the city pays but
postage, yet the receiver is subjected
tax of five cents.

The question of the separation of
and state has again been mooted in
partly in the manner of effect-
the Government and a large
of the House being in favor of a grad-
while some urged the exped-
character that occupied the legislative
body in 1884. It gave rise to warm discus-
sion in ecclesiastical and political circles, but
people looked on unmoved and apparently
unchanged in this respect. The opinion of
the press was, that the reform, though prob-
able only to be postponed for years, would
eventually be effected, and that without caus-
ing any excitement or giving ground for alarm.

CHINA, an empire in Asia, officially called
Chung Kwoh ("The Middle Kingdom"). The
Government is organized on patriarchal prin-
ciples laid down in the books of Confucius
and other ancient sacred writings. The Emperor
has supreme despotic power, but for more than
twenty years there have been minors on the
throne, except during Tungche's reign of a
year; and during this period a regency has
directed affairs. The Grand Secretary, con-
sisting of two Manchu and two Chinese mem-
ers, with two under-secretaries and ten sub-
ordinates, has the duty of placing public mat-
ters before the Regent for decision. The office
of Grand Secretary confers the highest official
rank, and is usually occupied with one of the
highest posts in the public service, perhaps at
the distance from the capital. Another body,
called the Grand Council, consisting usually of
four members, performs the duties of a privy
council, and exercises a greater influence in the
conduct of affairs. There are six boards of
administration which have charge respectively
of the civil service, finance, ceremonies, the
army, justice, and public works. There is a
Court of Censors, which, in conjunction with
the Board of Justice, or Punishments, consti-
tutes the highest judicial tribunal. The doctors
of the Hanlin, or Academy, draw up important
state papers in classical form, and collect the
records of the dynasty. T'ai Li Fan Yuen, an
important ministry, always filled by Manchus
and Mongols, attends to the relations with
tributary states. The Tsangli Yuen, founded
in 1861, has charge of foreign affairs.

The provinces of Pechil and
are each governed by a governor-general, or vice-
roy. There is a viceroy over the Liang Kwang,
or two Kwang provinces of Kwangtung and
Kwantung; one over Kiangsu, Kiangsu, and
Anhui, called the Viceroy of the Liang Kiang;
one over Fuhsien and Chekiang, the Viceroy of
the Min Cheh; one over Yunnan and Kwei-
chow; one over Kansuh and Shenii; one over
Hupeh and Hunan, the Viceroy of Honkwang.
Each of these provinces, except three, is admin-
istered by a governor, subordinate to the vice-
roy. The provinces of Shansi, Honan, and
Shantung are directed by independent gov-
ernors. In 1876 the ancient military govern-
ment of Manchuria, which had fallen into des-
ertude, was finally abolished, and the province
placed under a viceroy, called the Viceroy of
Shenking. In 1884 Chinese Turkistan was
also organized as a province. Since 1877 For-
mossa has been a governorship. The Admiral
of the Yangtsze-Kiang has the rank and title
of a viceroy. Peking has its own government, subordinate to the Board of Works.

The Emperor Kwang-Hsu is the ninth in succession from Aisin Gioro, the Manchu conqueror who founded the dynasty in 1644. He was born August 15, 1871, and proclaimed Emperor January 22, 1875, on the death of Tung-ho. The Empress Tae Hsi, the mother of Tung-ho, became sole Regent upon the death, in 1881, of Tae An, the principal widow of the Emperor Hien-fung.

Commerce.—The total value of the foreign and coast trade in 1882 was $386,002,000. In the foreign trade the imports amounted to $108,940,000, the exports to $95,850,000; the coasting trade inward to $205,030,000, outward to $175,320,000. Of the total carrying-trade, the share borne by British vessels was 61.47 per cent.; in Chinese, 26.16; in German, 3.85; in French, 3.55; in American, 0.92; in Japanese, 1.81 per cent. A large portion of the Chinese carrying-trade is with the English colonies. Of the total foreign commerce, about 80 per cent. is conducted with the markets of Great Britain, India, Australia, Hong-Kong, Singapore, Africa, and America. Continental Europe takes 8.41 and Russia 1.77 per cent. Besides the regular export trade to Hong-Kong, which consists mainly of rice, and the importation of industrial products from that port, a large fraudulent traffic is carried on in junks. The opium-trade has declined rapidly in recent years, the decrease in 1882 amounting to $11,000,000. The decline is due to the spread of poppy cultivation in China, the improved quality of the Indian drug, and the efforts of the Chinese Government to suppress the opium vice. The trade in piece goods showed a falling off of $7,500,000. The cause was the deficiency in the silk and tea crops, together with droughts in Shansi and Mongolia, floods in Shantung and along the Yangtse-Kiang, and small harvests in crops south China. Silk was exported in the same quantities as the year before; but the value was $5,000,000 less, owing to the break-down in prices caused by the financial difficulties of large speculative holders. These caused a decline of $25,500,000. The Chinese and English duties, and the manipulation of the market, make the price in London twelve times that paid to the grower in Foochow. Consequently, the teas of Japan and Assam are driving the Chinese growths from the market. Only in Formosa are European merchants allowed to introduce improved methods, cheapening the cost of cultivation and curing, and adapting the product to European tastes. The silk-trade has passed from the hands of London merchants into those of Lyons firms, who now supply with partly manufactured materials their successful German and Swiss competitors in Lyons fabrics. The export of tea, which was 90,086,000 pounds in 1860-61, reached the maximum of 174,514,000 pounds in 1880-81, and then declined to 149,101,000 pounds in 1882-83, and 151,140,000 pounds in 1883-84. The silk export declined from 79,199,000 bales in 1881-82, the highest point, to 22,891 bales in 1882-83, and 17,869 bales in 1883-84. The silk-trade has suffered through Japanese competition and disease in the silk-worm. The year 1888 witnessed a financial panic in which nearly all the native banks collapsed. Four or five years of prosperity and the prospect of the introduction of the steam-engine, the railroad, and the telegraph, and the opening of the interior to foreign trade, induced a spirit of speculation. The success of foreign joint-stock concerns led to the establishment of innumerable Chinese trading, mining, and manufacturing companies, and to inordinate speculation in their shares. Few even of the enterprises that were honestly projected were in working order when the crisis arrived. Crop failures and the trouble with France brought on a general crash. The telegraph was actually introduced by the Government, which has long lines in operation, connecting the main divisions of the empire. Railroads will probably be introduced before long. The first railroad built in China was constructed secretly by the engineer of the Kaiping coal mines, about seventy miles northeast of Tientsin, and is used for carrying coal from the mines to the canal, seven miles distant. A railroad that was built between Shanghai and Wusung to carry passengers encountered riotous opposition, and was finally torn up by order of the authorities. In 1884 Li Hung Chang induced the Government to authorize for military purposes a railroad between Peking and Tientsin. Mines meet with the same superstitious objections; yet in order to render the navy and arsenals independent of the Japanese coal-supply, Li Hung Chang had large mines opened at Kaiping and others at Kelung.

The foreign trade of the various treaty ports in 1882 was as follows:

<table>
<thead>
<tr>
<th>Port</th>
<th>Value (in $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanghai</td>
<td>50,000,000</td>
</tr>
<tr>
<td>Canton</td>
<td>29,000,000</td>
</tr>
<tr>
<td>Tientsin</td>
<td>24,000,000</td>
</tr>
<tr>
<td>Swatow</td>
<td>19,000,000</td>
</tr>
<tr>
<td>Chin Kiang</td>
<td>14,000,000</td>
</tr>
<tr>
<td>Foochow</td>
<td>14,000,000</td>
</tr>
<tr>
<td>Ningpo</td>
<td>11,000,000</td>
</tr>
<tr>
<td>Amoy</td>
<td>11,000,000</td>
</tr>
<tr>
<td>Chefoo</td>
<td>9,000,000</td>
</tr>
<tr>
<td>Newchwang</td>
<td>12,000,000</td>
</tr>
<tr>
<td>Tamsui</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Wuhu</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Hangkow</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Kiangtow</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Amoy</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Tientsin</td>
<td>169,000,000</td>
</tr>
</tbody>
</table>

The Yangtse river offers the only avenue of trade into the interior. The river ports of Chinkiang, Wuhu, King Kiang, Hanking, and Ichang absorb one third of the foreign commerce, without reckoning the share of Shanghai in the Yangtze trade. There are districts in southern and western China more productive and prosperous than those on the river. Many of the foreign merchants welcomed the conflict with France, believing that, if humiliated by a European military power, China would yield to diplomatic pressure with regard to inland tolls, aggravated by extortionate "squeezing" on the part of provincial governors, which, now rendered the customs tariff and commercial rights secured by treaties largely illusory.
Political Crisis.—The Empress-Regent and Prince Chun, father of the Emperor, made the Peking the occasion for degrading Prince Kung and the other members of the Council. Once before, in the last months of the reign of Tungche, Prince Kung, who had died in 1861, was superseded by Prince An, whose more vigorous counsels pleased the Palace party and the young Emperor. When Anche died, without choosing his successor, the Empress Dowager and Prince Chun had the infant son of the latter appointed Emperor a family council, although by the dynastic law he was ineligible, being of the same generation as the deposed Emperor. He retired with the title of Imperial Prince to the office of curator of the family. The new Emperor was also signed in 1879; but in 1880 he took a military post of enormous power, that of commander of the field force of the Imperial Provence. The break-down of the Chinese defense in Tonquin gave Chun and the dyastical and Manchu party, of which he was a member, the chance to oust Prince Kung and the Council of Chinese race, who had advanced to the highest status under the rule of the latter. More vigilant and valorous central government, not weakened by the influence of Li Hung Chang and other believers in European superiority, was welcome to the nation. Prince Kung was charged with negligence and mismanagement in the Chinese imperial forces, with presenting a false picture of the Chinese army, and with aiming at supreme power. By this obtained from the boy Emperor he was deprived of all his offices and emoluments. He was banished for life, and his name was erased from any official records. The Government of Kwangsi and Yunnan, the provinces bordering on Tonquin, were ordered to Peking disgrace. Two of the officers in Tonquin were sentenced to be beheaded in front of their troops. The Viceroy of Canton was dismissed for disobedience, but, upon confessing his fault, continued in office, pending an investi- gation. Prince Chun took the presidency of the Legislative Council, which had been filled by his elder brother for twenty-four years, excepting two brief intermissions. Two other Manches, Li Shu-To and O-Le-Ho-Pu, and Chang-i-Wan, a reactionary mandarin, were appointed in the place of the other councilors. Three other Chinese were made associate mem- bers, without a full voice in the deliberations. Prince Kung's place as President of the Tsungli men was given to Prince Koang, of the blood of the older family. Chun was the political ad- viser. Li Hung Chang was not disturbed in his post of Viceroy of Pechili. His knowledge and ability, and also his power as the organizer and commander of the only efficient military force in the empire, and a person of vast influence, gave his counsels to the Emperor's force superior to General Tao, the Marquis Tseang, and all the fire-eating courtiers and mandarins. He was the only man who could defend the capital against foreign foes, the only man also who could lead a revolution and upset the Tartar dynasty. Exasperation at the ruthless reprisals of the French, and a knowledge of the difficulties the French Government would encounter in an earnest campaign, changed the situation and defeated the peaceful solution nearly effected by Li. In September the composition of the Tsungli Yanmen was changed by the replacement of six members by new councilors, who possessed more efficient administrative qualities and supported a more vigorous policy toward France. The general effect of the conflict with France was to strengthen and improve the central government. The degradation of Prince Kung was only temporary, as was the case on former occasions; yet he was not restored to his position, but called in as a coadjutor.

Conflict with France.—At the beginning of 1884 Chinese garrisons were stationed in Bacin, Langson, Chukte, Cadang, and Laochai, awaiting the attack of the French. The Black Flags, whom the Chinese Government at first regarded as rebels and outlaws, after their valiant resistance to the French advance, were accepted as allies, and received assistance in men and money. The Chinese Government announced a state of "unofficial war" with France. The Marquis Tseang threatened war in case the Chinese garrisons were attacked, while M. Pary spoke of the inability of China for the irregular hostilities in Tonquin. About 5,000 were moved south to aid the Black Flags, and volunteer forces in defending the mountain districts of Tonquin. Diplomatic intercourse was restored after the departure of the Marquis Tseang for England. The capture of Bacin by the French produced a sweeping change in the Chinese administration, which resulted in the predominance of the anti-French party, yet it enabled Li Hung Chang to convince the Empress of the necessity of coming to terms with the French, who were meditating a blow at Canton, and the occupation of Formosa or Hainan as a pledge for the payment of 150,000,000 francs indemnity. That progressive viceroy was the author of the European armaments and coast defenses with which China has provided herself at great cost, and was conscious of the inability of the empire to withstand French naval and military attacks. Negotiations were begun informally by the Chinese at the suggestion of Gustav Detrine, a European official in the Chinese custom-house, and a friend of Li Hung Chang. The Chinese understood that France would let fall her demands
for an indemnity if the protectorate over Tonquin were acknowledged and the Chinese garrisons withdrawn; but that, in the contrary event, she would demand an enormous sum and occupy Formosa as a guarantee. The Regent, overlooking the opposition of the Tsungli Yamen, authorized Li to conclude a preliminary treaty with Captain Fournier, who had received full powers from his government. A draught convention was arranged on the 9th of May, and on the 11th a treaty was signed by the plenipotentiaries at Tientsin, subject to the ratification of the two governments. The Chinese representative conceded far more than the French in the earlier stages of the controversy had demanded, abandoning not only the suzerainty over Annam, but the neutral zone, and throwing open to French commerce the southern provinces of China. It was orally stipulated that China should not be required to renounce the suzerainty openly, and that the French should in their acts respect the susceptibilities of the Chinese people in this regard. The treaty was peculiarly worded so as to carry the impression of mutuality, although the advantages were all on the side of France. Article I bound France not only to respect the southern frontier of China, bordering on Tonquin, but to guard it against attack by other nations. Article II bound China, in return for this guarantee of good neighborhood, to withdraw the Tonquin garrisons, and to respect present and future treaties made directly between France and the Court of Annam. Article III engaged China, in consideration of the waiver of an indemnity, to agree to free commercial intercourse between France and Annam on the one hand and China on the other along the whole southern frontier bordering on Tonquin, subject to regulations and tariffs to be concluded on conditions most favorable for French trade. Article IV pledged France to draught her final treaty with Annam in language not derogatory to the prestige of China. Article V vested the negotiation of a definitive treaty, on the bases established in this preliminary convention, in three months. The natural frontiers of Langson, Caobang, and Lackis were taken as the boundary of Tonquin. The Marquis Tseng was recalled by his Government after the defeat at Bacinh. Li-Fong-Pao, Chinese Minister at Berlin, proceeded to Paris as interim representative. The treaty of Tientsin pledged China to recall her garrisons immediately. The time agreed upon was between the 6th and the 28th of June. An angry agitation was started in China, in condemnation of the treaty and against Li Hung Chang. While the Tsungli Yamen were deliberating about the ratification of the convention, and ready to seize any pretext for its rejection, the French hastened to take advantage of the situation and to carry out its executory provisions. They demanded of the Regents of Annam the imperial seal. They refused to deliver it up, declaring that it would be an act of treason, but agreed to burn it, which was done in the presence of M. Patenôtre when the new treaty of Hue was signed, June 8. This was regarded by the Chinese as a violation of the treaty, being an act calculated to impair the prestige and dignity of China. At the very date set for the withdrawal of the Chinese troops, General Millet sent a column under Colonel Dugenne to occupy Langson. The clause specifying dates for the evacuation, according to Li's account, was not agreed to by him, but upon his firm objections was struck out of the treaty by Captain Fournier, who countersigned the treaty with his initials. This statement was denied by the French plenipotentiary. Colonel Dugenne appeared before Langson the 22nd of June and demanded the evacuation of the town. The Chinese commanders replied that they knew of the treaty, but could not surrender the fortress without orders from their superiors; they therefore begged the French commander to wait until instructions could arrive from Peking. Colonel Dugenne nevertheless, though contrary to General Millet's commands, which were to await instructions if resistance was encountered, pressed forward to take possession of the citadel. Beyond Bao Le the French troops ran against the Chinese in force, posted where their fire would prove most effective. In the engagements that followed, the Chinese lost far more troops than the French (see Tonquin). The Bao Le affair changed the course of events. The French Government characterized the attack as a perfidious ambush, and demanded reparation in the form of an indemnity of $50,000,000 francs, besides the immediate withdrawal of the garrisons. The Tsungli Yamen, which wavered constantly in its attitude, at first welcomed the rupture and did not disapprove the action of the commanders at Langson. It refused to evacuate the frontier towns before the signature of the definitive treaty. Upon receiving the French demands, presented in an ultimatum by Vice-Count de Vincenose on the 12th of July, the Chinese Government again changed its attitude and ordered the withdrawal of the garrisons at once. The French thereupon lowered their demand to $30,000,000 francs, and then offered to accept a sum equal to the compensation to be awarded to the wounded and the families of the slain, and the extra military expenses entailed by the Bao Le attack, in admission of the principle of an indemnity. China refused to accede to the principle, denying that there was an ambush or a breach of treaty engagements. On the 19th of July the Tsungli Yamen announced the appointment of the Vice-crow of Nanking as plenipotentiary to conclude a definitive treaty with M. Patenôtre, the French envoy to China and Annam, and informed the French Government that the indemnity question had been submitted to the powers. The Chinese treaty with the United States had been signed, and the event of result or hostility from any power to appeal to
the good offices of the American Government. The Chinese Government accordingly requested the mediation of the President of the United States, and offered to refer the matter in dispute to his arbitration. The American Government accepted the task, on the condition that proof should be shown that China had not violated the convention. The French Government refused to accept arbitration on that assumption. M. Patenôtre met Chinese plenipotentiaries at Shanghai in the latter part of July. They maintained the position already taken as Admial Courbet would take reprisals in the Min river. On the 21st of August, when the ultimatum expired, Viscomte de Senaille pulled down the tricolor at the French legation in Peking and joined M. Patenôtre. At the same date Li Fong Pao called for his passports and returned to Berlin. On the 23d and five following days Admiral Courbet destroyed the fleet, dock-yard, arsenal, and forts in the Min river. The French, after retiring from Ka-lung, reoccupied and garrisoned it on the 1st of October. They attempted to take posse-

CHINESE PORT ON MIN RIVER.

the principle of an indemnity, but offered a contribution of 3,500,000 francs to assist the sufferers from the Langson affair. The French ultimatum, which expired August 1, was extended to allow the negotiations to come to a conclusion. On the 5th of August Admiral Lespes bombarded and took possession of the port of Kelung and the adjacent coal-mines in the island of Formosa as a guarantee for the payment of the indemnity demanded, 80,000,000 francs, payable in ten annual installments. The vessels steamed past the forts without giving notice of hostile intentions, and took a safe position in the inner harbor. By a similar stratagem Admiral Courbet was in a position to bombard Foochow and destroy the principal Chinese arsenal, having peaceably entered the Min river on July 18. The negotiations at Shanghai were still continued, until at length the Chinese Government recalled the plenipotentiaries, being unable to secure the acceptance of American mediation or of its direct proposals. The French representative then notified the Tengli Yamen that, if the indemnity were not agreed to in forty-eight hours, sion of Tamsui also, but were repelled. The Chinese fortified Canton and other ports with torpedo-mines, accumulated war material, and improved their naval and military armaments and organization. The warlike spirit spread after the French reprisals, and gained in force. The American minister continued his efforts to mediate the dispute. China was willing to accept American arbitration, but France still refused. At one time the Chinese authorities were inclined to agree to the principle of indemnity if the demand were reduced to a small sum. This proposal was made the basis of direct overtures by the French Government, which asked England to support its demands. The views of the Tengli Yamen after this underwent a change. The Chinese grew more confident of their powers of defense after the victory at Tamsui and other successes, and in consequence of the advancement of warlike preparations under German engineers and naval officers. They also conceived the opinion that the French Government would draw back from a course involving actual war, or would give place to an administration more pacifically dis-
posed. The Marquis Tseng kept his government informed of the opposition to the Chinese policy of M. Ferry in the Chambers, and of the apathy of the French people. The final proposals to the American minister were that France should not only waive the indemnity, but should withdraw from the protectorate of Annam, and in Tonquin leave the Chinese in possession of the frontier fortresses. The right of overland trade in Yunnan and the Kwang provinces was also denied. These conditions the American minister declined to transmit to the French authorities.

In the latter part of October, England tendered her good offices to the French, which were accepted on the basis of the occupation of Kelung and Tamsui for a definite period in order to satisfy the indemnity claim from their revenues. Negotiations were opened between Lord Granville and the Marquis Tseng in London toward the end of November. The conditions offered by China were substantially the same as those proposed to the American minister to China, demanding that France should recede from the Tientsin convention, renounce her protectorate over Annam, give up the commercial privileges in southern China, and draw a new frontier line in Tonquin, leaving in Chinese hands the fortresses of Caochang and Leokai. As mediation was impossible, negotiations were broken off after a few days.

On October 29th, the French proclaimed a blockade of the ports of Formosa. Both sides still refrained from a declaration of war, and denied that a formal state of war existed. Such an act would have been inconvenient to the French Cabinet previous to the regular assembly of the Legislature, because it would have necessitated an extraordinary convocation of the Chambers, without whose assent the Government cannot engage in regular warfare. The French hostilities were declared to be analogous to the blockade of the Greek ports by Great Britain at 1793, and the seizure of San Juan by the United States in 1859. It was a state of reprisals, or an unofficial war. The blockade of Formosa, established with the assent of the British Government, was calculated to raise troublesome questions as to neutral rights. The French disclaimed the right of search, but asserted the right to fire upon neutral vessels running the blockade. If war were regularly declared, the right of coaling and repairing their vessels in neutral ports would be forfeited. The coal-mines at Kelung were flooded and unworkable. In Hong-Kong, after the issue of a proclamation by the Vice-roy of Canton, threatening penalties to Chinese subjects and their families who assisted the enemies of their country, at the time when the flag-ship of Admiral Lespes was being repaired, all the laborers and boatmen refused to work for the French. The Chinese threatened later to cut off the food-supplies of the English colony if French war-ships were coaled, provisioned, and repaired there.

Simultaneously with their bolder diplomatic attitude, the Chinese began aggressive military operations. The French position in Formosa was attacked from the land. Chinese troops invaded Tonquin. In naval engagements, the French were ordered to maintain their fortified positions. Chinese fleet also showed signs of activity. During the London negotiations a tactful maneuver was observed on both sides. After the failure, M. Ferry obtained an additional credit and sent out large re-enforcements to the object of first expelling the Chinese from Tonquin and reducing that country to a subjection, and then establishing the French occupation of the captured positions in Formosa. A blow at Canton was also contemplated, and naval defenses of Canton were believed to be complete. The approach to Peking was defended by a formidable fortress, Arthur built by German military engineers and mounted with heavy cannon and guns. The preparations were made under the direct interdiction of Li Hung Chang, assisted by competent European officers. Here also Li's troops, the only effective Chinese, thoroughly trained and armed in a European manner. This body had been for years at a strength of 25,000 men. Three times that number were gathered at Pei Ho to contest the landing of the French army. With Peking presumed to be secure and Canton secure, the Government was apparently indifferent to the “piecemeal bombardment” of other places. The scheme of reprisals was expected to embroil France with other European powers and bring about an earlier settlement of the conflict, and one more favorable to China. The Chinese were confident of testing the possession of Formosa with ease and keeping the French out of the position gained by the French valued military or political purposes. The force was too feeble to stir from the settlements taken on the coast, where the Chinese were greatly superior in numbers, which with the Frenchmen learned to shoot ground better; for, instead of being formed into heavy losses, the fighting qualities of the Chinsmen were improved by the example of their adversaries. To establish garrison the bold claim to the suzerainty of Annam, the final settlement, the Chinese Government sent hordes of raw troops into Tonquin, the supply of such recruits was indefinitely effective, and it effectuated the occupation of the province by the French. There, too, the Chinese displayed a tenacious endurance that enabled them to learn tactics and discipline from the victories of their enemies.

Foreign trade was paralyzed by the war with France. After the French acts of
and the cities of the interior, out-
se committed upon missionaries and
verts. Europeans were obliged on Guangtung and other provinces.
and neighboring villages, in Nam-
taung, Kite-Yang, Swatow, and other
olic and Protestant churches were
and houses pillaged. In a riot at
October 6th, the houses of for-
t the records of the custom-house
ed.

Military Operations.—French hostili-
ibus began with the bombardment of
the northeast extremity of the island,
August 5th. The object was to
ess of the coal-mines in the vicin-
town is an insignificant place, con-
y 8,000 inhabitants, but has a trade,
and camphor, besides coal. The
large and was well protected by for-
placed on two rocky islands, several
et high, near the entrance. Admi-
was allowed to pass the forts with
s and the Latins. The Chinese sup-
be merely wanted coal, and were not
to fight. Opening fire from behind,
t of the forts, and shelled the
he bombardment lasted one hour,
roops afterward withdrew. The
re, which engaged the forts from
ceived three balls, and the following
been off with considerable loss.

Miral Courbet steamed up the Min river with
his squadron, and anchored opposite the arsenal
of Foochow. The only practicable entrance
to the river, the north channel, is dangerous
and difficult. The sand-bar outside can only be
passed at high tide. Within is another bar.
The long and narrow passage abounds in other
obstructions, and is commanded by the power-
ful Kinpai and Mingen forts and the fortifica-
tions on Woufou Island. With strange negli-
gence, the Chinese commanders allowed the
French vessels, one by one, in charge of Eng-
lish river-pilots, to steam by these invincible
fortifications. Admiral Courbet took his sta-
tion beyond the arsenal, with his guns bearing
upon it and the Chinese fleet, which was
hemmed in there. The French commander
threatened to fire on the Chinese vessels if they
moved. Safe from the shells in the rear was
the city of Foochow. He had the cruisers
Volta, D’Estaing, Villars, Château - Renard,
and Duguay-Trouin, the gunboats Aspic, Lynx,
and Vipère, and two torpedo-boats. Chang
Pei Län, the Chinese commander, announced
that his defensive preparations were perfect,
and that he had the French fleet at his mercy.
He was restrained by the central authorities
from beginning hostilities. When the order
came to destroy all Government property on
the Min as an act of reprisal, August 23d, the
French first engaged the Chinese fleet, consist-
ing of the sloop Yang-Woo, carrying eleven

[Map of Lower Min River]
was blown up by a torpedo. A cigar-shaped torpedo-boat, about fifty feet long, steaming twenty knots an hour, was sent out against her as soon as the fight began. When the French flag-ship, the Volta, opened fire, she answered with a broadside, which caused the chief loss of life suffered by the French during the action. Four minutes later she was struck by the torpedo. The next instant nothing was seen of the stately vessel of 2,000 tons displacement but floating timber. The Chinese sunken torpedoes failed to work. The fire-junks did no damage. The guns of the Chinese gunboats were mounted to fire end-on, and were not in position when the fight began. Except the two eighteen-ton gunboats, the Chinese vessels were merely yachts. Resistance was offered with Hotchkiss guns, but, under the heavy fire, the guns could not be served. The French machine-guns, of the same pattern, performed admirably, as did the breech-loading guns of French design. The resistance the Chinese were able to offer to the ponderous artillery of the heavily-armored French vessels was very slight. In fifteen minutes the combat was practically ended. All the Chinese vessels were disabled, except two that escaped. They ceased firing altogether, the survivors leaping overboard. The French allowed no surrender, but continued to fire for hours at the sinking ships and at the numerous war-junks in the river. The river was strewed with dead and wounded. On the French side seven were killed. The Chinese loss was estimated at 1,000 killed and 8,000 wounded. The ironclad Triomphante joined the French fleet after the bombardment was begun. The shore-batteries of the arsenal did little execution. They ceased firing at three o’clock, two hours after the action opened. As soon as the fleet was on the 25th the ironclad Galissonière started to enter the channel. The Chinese gunboat in the White Fort, three miles away, fire at range at once, and sent a shot into her and then another, which drove her off the 26th Admiral Courbet raked from all the Mingan forts, which could not reply, their guns were directed outward. On 27th and 28th the Kimpai batteries were enflamed. Small landing parties destroy the guns of European make. Although narrow passes of the river afforded exact shelter for sharpshooters, there were but musketry-shots, which were few, that three or four Frenchmen fell. Hotchkiss in the tops of the vessels drove the inhabitants from the hill-sides, while Krupp shells speeded the speedy evacuation of the forts. After Manting all the forts and fishing up sunken torpedoes, which were not in working condition, Admiral Courbet steamed out of the river, and stationed his fleet at Matson. French made use nightly of electric lights to watch the enemy and for telegraphic signaling. The Foochow populace and the surrounding soldiers indulged in looting in the Eurob quartier, the inhabitants of which had all left for refuge on board. The French destroyed the police junk-boat. American, British, and German naval forces afterward police the harbor, and also kept order in the city. The civil administration was utterly disorganized. After the departure of the French
CHINA.

sailed the fortifications, and placed across the river.

Beginning of September the French

Kelung again, but did not occur

as the Chinese had flooded the

the 1st of October operations were

1 the object of capturing and hold-

9. During the night eight ships

height of St. Clement. The Chi-

ese fled into the interior. The

west of the height were occupied

4th those on the southeast. The

fortified the principal positions,

ed the other works. The Chinese

illed and wounded numbered 290,

18. The city was bombarded sev-

a number of actions were fought

2. The French finally capitulated.

en established themselves on the

ills, from which they harassed and menaced their positions. The

ounded themselves with a girdle of

aneous operation against Tamsui

the 2d of October by Admiral

his port is on the northwest coast,

Kelung. The four ships silenced

The ships could not enter the port,

of a line of torpedoes near shore,

ons from which these were com-

are out of range. Attempts were

he succeeding days to take these

landing-parties. On the 8th the

lered 600 to land and awaited them

scoade. The Chinese, hidden in the

opened fire at close range, and,

rench fled in confusion, the Chinese

air rear. Their loss was 70 men.

finally established themselves on

and threw up earthworks.

2d of November the block-house

g the road to Tamsui was attacked

Chinese, who were repelled with

On the 13th and 14th another

took place, in which both sides

ictory. On the 13th of November

uffered another defeat at Tamsui.

ruiser was captured and taken a

kade of the northern and western

ormos between Cape Nanasha and

went into force October 28. The

is ineffectual, as the Chinese were

into the ports with steamers and

and land troops and munitions. Before

ement of the blockade, complies-

from the overhauling of English

Tamsui and of English and German

river Min. During the operations

the Chinese fired upon an English

d a German man-of-war, mistak-

French vessels. Little could be

ed in the way of naval action or the

fortifications during the monsoon,

nor could any important military operation be

undertaken before the arrival of re-enforce-

ments. Pursuant to the August vote of credit

a naval force of 5,830 officers and sailors was

maintained in Chinese and Tonquinse waters,

in 34 vessels, including 18 specially constructed

gunboats, and a military force in Tonquin of

0,000 Europeans and 5,000 Asiatics. The Oc-

tober vote increased the forces by four cruisers,

1,994 sailors, and 5,000 soldiers.

CHOLERA. It is impossible to overestimate

the importance of the discovery that has been

made during the past year with reference to

the cause of cholera. The name of Koch has

become familiar in this connection, not only

to the medical profession, but to the general

public. Soon after the outbreak of cholera in

Egypt, in 1883, Koch was sent out at the head

of a German commission to investigate the

causes of the disease. He had already become

famous through his discovery of the tubercle-

bacillus (see "Annual Cyclopædia" for 1883),

and was eminently fitted, by his intimate ac-

quaintance with the minute organisms of dis-

case, to undertake the work. From Egypt he

went to India, where his most valuable inves-
tigations were conducted. The late epidemic

in the south of France also furnished him with

an opportunity of verifying the conclusions to

which his studies had already led him. Though

reports of his progress were issued from time
to time, the brilliant results of his labors were

first made known to the scientific world in an

address presented at Berlin in July of this year.

We shall gain the clearest idea of the subject

by following his own paper and its deductions,

after which it may be interesting to note some

of the objections that have been made to his

tory. Soon after arriving in India, Koch

heard of an outbreak of cholera in a certain

neighborhood, whereupon he immediately took

up his residence there, and proceeded to study

the line of connection between this disease and the water-supply

had long been recognized by the Indian doc-

tors. It will be remembered that in India the

natives obtain their drinking-water from tanks,

which are often polluted by sewage. Koch no-

ticed that the cases of cholera were confined to

certain huts, the inhabitants of which obtained

their water from a certain tank. Moreover,

their infected linen was washed at the same

place. This circumstance, apparently trivial,

led to a most important discovery. On exam-

ining, with the microscope, specimens of the sus-

pected water, Koch found in it a certain pecu-

lar organism which, from its shape, he named

"comma-bacillus"; this was identical with the

forms that he had previously discovered in the

excretions and dead bodies of cholera-patients

(see "Micro-Organism"). These bacilli were

only found in the water during the epidemic.

As it declined, they became fewer, and finally

disappeared. This circumstance seemed to es-

ablish a direct relation between the bacilli and

the disease.
Cholera.

In no case were these parasites absent from the intestines after death, as shown by a large number of post-mortem examinations, and they were constantly found in the choleric stools, diminishing in number and finally disappearing as the patient recovered. The parasites were easily cultivated outside the body in such fluids as gelatine and meat-broth, but Koch never succeeded in producing cholera in animals by the injection of fluid containing bacilli. He proved that the organisms were quickly destroyed by drying, as shown by numerous experiments with soiled linen. This fact is of great practical importance, as it is a strong argument against the theory that the germs of cholera are permanent, and may be transported to a great distance. The question may be asked, Why is it assumed that these parasites are the cause of cholera? They confine themselves to the bowel, which is the seat of cholera. In the early stages of the disease but few are found in the stools; but, as the dejections assume the characteristic rice-water appearance, they become more numerous. Moreover, they are not found in either the bodies or dejections of patients affected with other intestinal troubles (as dysentery). It has been noticed that the bacilli thrive best in an alkaline fluid, and in this way an attempt has been made to explain the fact that patients who are suffering from indigestion succumb more readily to cholera, since the germs, when introduced into the stomach, are rendered less active on account of the diminished acidity of the gastric juice. As to the question of how the presence of these minute organisms in the intestines can cause cholera, all that can be affirmed at present is, that they exercise some destructive influence upon the blood, and doubtless also upon the cell. They seem to generate some peculiar poison within the intestine. Koch's deductions concerning the origin of cholera are as follows:

If the origin of the separate epidemics be carefully looked into, it will be found that cholera has never reached us except through human beings themselves. We must not think that there are exceptions because the infected individuals can not always be found. So far as we know, no cholera epidemics have broken out spontaneously outside of India; hence, in this point, experience agrees with the presumption that cholera is caused by a specific organism having its habitat in India, where the circumstances are especially favorable for its development.

Koch regards the delta of the Ganges as the true home of the disease, since the luxuriant vegetation, crowded population, and poor sanitary arrangements especially favor its permanence. In other countries epidemics soon die out of themselves.

The reader may ask, What is the practical use of the parasitic theory of cholera, aside from its interest as a brilliant scientific discovery? It will undoubtedly exercise a great influence upon the future treatment of the disease, though at present, it must be confessed, no way has been devised of introducing into the intestines of cholera-patients (with safety) solutions strong enough to destroy the bacilli. In doubtful cases, where cholera is suspected, it will be possible to establish a diagnosis by finding the characteristic organisms in the stools. The principle will be most important when applied to public hygiene. Not only will quarantine regulations be more intelligently enforced, but the process of disinfestation will be conducted in a more rational manner. Since it is certain that the bacilli perish as soon as they are thoroughly dried, the public will lose something of their fear of the disease, as it will be robbed of its mystery. As water is regarded as the principal source of infection, renewed care will be taken to see that this is free from impure germs.

Since the publication of Koch's views, his experiments have been repeated, and numerous attempts have been made to furnish the missing link in the chain of evidence by communicating cholera to the lower animals by introducing the parasites into their systems. Success has been claimed, but the results are still too imperfect to warrant any positive conclusions. Recent investigations have seemed to prove that the "comma-bacillus" is only a temporary form of another organism, which probably exists in a permanent state within the intestine. This complicates greatly the original question, and casts some doubt upon the specific character of the cholera-parasite.

The latest news from Germany is, that Koch has at length succeeded in inoculating rabbits with the cholera-microbe, so as to produce disease similar to that in man.

Dr.s Klein and Gibbes, of the English Cholera Commission, who are still engaged in carrying on elaborate investigations in Bombay and Calcutta, have just issued a preliminary report, which is quite adverse to Koch. They claim to have established the following points: 1. The comma-bacilli are not characteristic of cholera, since they are found in the secretions of diarrhea and dysentery. 2. Certain straight bacilli are more constantly present in choleraic discharges than are the common variety. 3. Numerous experiments have demonstrated the impossibility of artificially communicating the disease to animals.

The Epidemic of 1884.—Cholera appeared as an epidemic in those portions of southern Europe bordering upon the Mediterranean, mainly in France and Italy. The earliest official mention of it was at Toulon, France, June 4; but subsequent inquiry showed that there had been cases at Toulon since April, and that the disease had been introduced by a vessel that had arrived at that port from Tonquin, in Asia. Toulon had a population of about 75,000, including Italian laborers, mostly employed in the harbor, who, with their families, numbered 10,000, living under circumstances every way favorable for the propagation of the cholera when once introduced. It spread steadily, and within two weeks was prevalent all through the city. A
CHOLERA.

CLEVELAND, GROVER.

An epidemic from Toulon took place to close of June. The Italians tried their way toward their homes, and scattered themselves through the region. On July 1 the Italian sent a transport-ship to carry the Italians as still remained at but all the roads leading from France were blocked up by fugitives from the and a rigid system of quarantine, of detention for a week or so, was set up. On August 3 there were 1,000 cases in Italy, 2,200 on the 70 Frasca, and 4,500 at various ports Mediterranean coast.

numbers of fugitives made their way to Marseilles. These quartered all through the city, and the cholera epidemic simultaneously in many parts. In the reports showed that 339 died of cholera in Marseilles alone.

was observed that the pestilence had been y fugitives from the two great centers and Marseilles. As an epidemic, a in France may be said to have lasted about September 15. At Marseilles the death toll had fallen to 10 a day, and so continued during the following. The whole number of deaths of cholera up to the 10th is officially 6,181, of whom 427 were Italians, Toulon and Marseilles, although for the rest of the deaths in all France 100 a day. Other accounts more than the entire number, making the cases 12,000, of deaths 6,000.

suffered far more severely than France; to Naples and Genoa being the of the pestilence. On July 11 a train of 500 out of the ships leaving on board 1,100 of the crews, and 500 others, landed at Naples. At Naples all the were favorable to the spread of the disease. It had been once introduced, and the epidemic spread rapidly after a few days. Up to September 14, the deaths in that city were 6,361. The death toll was 100 a day. The death rate during the September 15 to September 15. On were 451 cases and 154 deaths; there were 483 new cases and 275 deaths during the ensuing week there 15 cases and 2,602 deaths, an average 100; the extreme height of mortality the 13th and 18th, the number of those two days being 935. During the week the disease gradually abated, the number of deaths being about 200 a day. The epidemic was continued during the week, though with considerable fluctua- tion, on the 29th there were 165 deaths, 100 only, and on the 9th 100. Up 2, the number of cases in all Italy started at about 15,000; of deaths, something more than 10,000. The Italian records appear to have been kept with great care, and this is probably a close approximation to the actual numbers. Of the deaths, fully 5,000 were in Naples alone. The type of the disease, especially in Naples, was more than usually virulent, as fully two cases out of three resulted fatally; and, as far as can be judged by the reports, death usually occurred within a week after the symptoms of cholera first appeared, although it is impossible to say how long the germs of the disease may have been lurking in the system. The disease was mainly confined to the poorer classes, dwelling in the most filthy portions of the city.

Next after Naples, Genoa suffered most severely. The disease appeared there almost simultaneously with its manifestation in Naples, and was traceable with equal certainty to the refugees from Toulon or Marseilles. Genoa has a population of about 180,000. We do not find a daily report of the cases there until September 8; on that day there were 81 cases and 20 deaths; and the number did not vary materially for three weeks. It increased with considerable rapidity after it had sensibly declined in Naples. On September 28 there were 29 cases and 25 deaths; on the 29th, 26 cases and 55 deaths; after which the deaths fell back to 20 or 30 a day for some time. The whole number of deaths in Genoa was not far from 600; or, in proportion to the population, about one fifth as many as in Naples. The remaining deaths in Italy were principally at a few minor seaports, and in the quarantine stations on the French frontiers. A very considerable number of cases occurred among the cordon of soldiers who maintained the quarantine. The smaller Italian villages along the line suffered more than the larger towns, because the refugees from France reached them by the by-paths through the mountains, thus escaping the quarantine that was established at the towns on the main roads. It is satisfactorily established that the cholera did not originate spontaneously in any place in France or Italy; but was always introduced by refugees from Toulon; and that the disease was brought to Europe by a single vessel from Toulon, which arrived in Toulon in April.

The cholera spread to some extent in portions of Spain that have water-communications with the infected districts of Italy; but in no district did it assume the proportions of a general epidemic. The entire number of deaths in all Spain was not many hundreds; but the details are not sufficiently minute to warrant more than a general approximation as to the number of cases. In no other part of Europe did Asiatic cholera make its appearance. The 20,000 deaths undoubtedly originated in the single infected vessel at Toulon, for there is no record of any other cases having been brought from Asia or Africa.

CLEVELAND, GROVER, twenty-second President of the United States, born in Caldwell,
Essex County, N. J., March 18, 1887. On the paternal side he is of English origin. Moses Cleveland emigrated from Ipswich, county of Suffolk, England, in 1855, and settled at Woburn, Mass., where he died in 1701. His grandson, Aaron, went to East Haddam, Conn., in 1789, made money in land speculations, was designated in the town records as "a gentleman," and left an estate of $2,000. One of his sons, Moses, was grandfather of Major-Gen. Erastus Cleveland, of Madison, N. Y., who commanded the United States forces at Sackett's Harbor in the War of 1812. Another son, Aaron, great-great-grandfather of Grover, was graduated at Harvard College in 1785, and after a Presbyterian pastorate at Haddam, Conn., and subsequently at Malden, Mass., received orders in the Church of England, was ordained priest by the Bishop of London, and was commissioned by the Society for Propagating the Gospel in Foreign Parts to take charge of a church at Carlisle, Pa. On his way to his mission he was taken ill in Philadelphia and died in the house of his intimate friend, Dr. Benjamin Franklin, who wrote his obituary, printed in the "Pennsylvania Gazette," Aug. 16, 1751, of which Franklin at that time was editor. Aaron's son Aaron, Grover's great-grandfather, was a merchant in Norwich, Conn., was conspicuous for his opposition to slavery, and while a representative from Norwich introduced a bill in the Connecticut Legislature for its abolition. One of his sons, Charles, was the widely-known "Father Cleveland," for many years city missionary of Boston, and one of the daughters married Dr. Samuel Hanson Cox, father of Bishop Arthur Cleveland Cox, of Western New York, resident at Buffalo. Another son of Aaron, William, was a silversmith and watchmaker at Norwich, Conn. His son, Richard Fallley Cleveland, who graduated at Yale College in 1824, was ordained to the Presbyterian ministry in 1829, and in the same year married Anne Neal, the daughter of a Baltimore merchant of Irish birth. These two were the grandparents of Cleveland. The Presbyterian parsonage at Caldwell, where the future President was born, was first occupied by the Rev. Stephen Grover, in whose honor the subject of this biography was named; but the first name was early dropped, and he has been known from his boyhood as Grover Cleveland. When he was two years old, his father accepted a call to Fayetteville, near Syracuse, N. Y., where Grover had an academy schooling, and afterward was a clerk in a country store. The removal of the family to Clinton, Oneida County, gave Grover additional educational advantages in the academy there. In his seventeenth year he became a clerk and an assistant teacher in the New York Institution for the Blind, in New York city, in which his elder brother, William, an alumnus of Hamilton College, now a Presbyterian clergyman at Forrestport, N. Y., was then a teacher. In 1855 Grover started from Holland Patent, in Oneida County, where his mother then resided, to go West in search of employment. On his way he stopped at Black Rock, now a part of Buffalo, and called on his uncle, Lewis F. Allen, who induced him to remain and assist him in the compilation of a volume of the "American Herd-Book," receiving for six weeks' service $60. He afterward assisted in the preparation of several other volumes of this work, and the preface to the fifth volume (1861) acknowledges his services.

In August, 1855, he secured a place as clerk and copyist for the law firm of Rogers, Bowen, & Rogers, in Buffalo, began to read Blackstone, and in the autumn of that year was receiving four dollars a week for his work. He was admitted to the bar in 1859, but for three years longer he remained with the firm that first employed him, acting as managing clerk at a salary of $600, soon advanced to $1,000, a part of which he devoted to the support of his widowed mother, who died in 1862. He was appointed Assistant District Attorney of Erie County, Jan. 1, 1865, and held the office for three years. At this time strenuous efforts were being made to bring the civil war to a close. Two of Cleveland's brothers were in the army, and his mother and sisters were dependent largely upon him for support. Unable to enlist, he borrowed money to send a substitute, and it was not till long after the war that he was able to repay the loan. In 1856, at the age of twenty-eight, he was the Democratic candidate for District Attorney, but was beaten by the Republican candidate, his intimate friend, Lyman K. Bass. He then became a law partner of ex-State Treasurer Isaac V. Vanderpool, and continued a successful practice till 1870, when he was elected Sheriff of Erie County. At the expiration of his three years' term he formed a law partnership with his personal friend and political antagonist, Lyman K. Bass, the firm being Bass, Cleveland, & Bissell, and, after the forced retirement from ill-health of Mr. Bass, Cleveland & Bissell. The firm was pre-eminent in Cleveland and attained high rank as a lawyer, noted for the simplicity and directness of his logic and expression, and his thorough mastery of his cases, rather than for brilliant rhetorical oratorical display.

In the autumn of 1881 he was nominated Democratic candidate for Mayor of Buffalo, and was elected by a majority of 3,530, the largest ever given to a candidate in that city. In the same election the Republican State ticket was carried in Buffalo by an average majority of over 1,600. But Cleveland had a partial Republican, Independent, and "reform" movement support. He entered upon the office, Jan. 1, 1882, and the following extract from his inaugural address was the key-note of his administration:

"It seems to me that a successful and faithful administration of the government of our city may be
OCELVAND, GROVER. 147

ished by constantly bearing in mind that we
trustees and agents of our fellow-citizens,
their funds in sacred trust, to be expended
benefit: that we should at all times be pre-
render an honest account of them, touching
ner of their expenditure; and that the affairs
ity should be conducted, as far as possible,
a principle as a good business man;
his private concerns.

von became known as the “veto Mayor,”
that prerogative fearlessly in checking
illegal, or extravagant expenditure of
bile money, and enforcing strict com-
with the requirements of the State
ution and the city charter. By vetoing
appropriations he saved the city
$1,000,000 in the first six months of his
stration. He opposed giving $600 of
‘pay-ers’ money to the Firemen’s Benev-
society, on the ground that such appro-
a was not permissible under the terms
State Constitution and the charter of
y. He vetoed a resolution diverting
the Fourth-of-July appropriation
observances of December 4 for the
ason, and immediately subscribed one
of the sum wanted for the purpose. In
he vetoed every exorbitant or illegal
ation. During his mayoralty the city
ed the semi-centenary of its corporate
His admirable, impartial adminis-
_ during his entire term of office won
s to his integrity and ability from the
ad the people, irrespective of party.
second day of the State Democratic
ation at Syracuse, Sept. 23, 1882, on the
elloot, by a vote of 311 out of 882, Grover
ad was nominated for Governor, in op-
lo Charles J. Folger, then Secretary
ited States Treasury, nominated for
ce three days before by the State
ican Convention at Saratoga. In his
acceptance, two weeks afterward, Mr.
d wrote:

a officers are the servants and agents of the
to execute the laws which the people have
within the limits of a Constitution which
we established. . . . We may, I think, reduce
simple elements the duty which public serv-
, by constantly bearing in mind that they
in place to protect the rights of the people, to
their needs as they arise, and to expend for
the money drawn from them by taxation.

The canvas that followed, Cleveland had
vantage of a united Democratic party
addition the support of the entire Inde-
press of the State. The election in
ber was the most remarkable in the po-
anal of New York. Both gubernato-
sidates were men of character and of mi-
liable public record. Judge Folger had
bly filled high State and Federal offices.
ere was a wide-spread dissatisfaction in
ican ranks largely due to the belief that
ination of Folger (nowise obnoxious
f) was accomplished by means of im-
d and fraudulent practices in the nominat-
, and by the interference of the
Federal Administration. What were called
“half-breeds” largely stayed away from the
olls, and in a total vote of 919,894 Cleveland
ceived a plurality of 192,824 over Folger,
and a majority over all, including Greenback,
Prohibition, and scattering, of 151,742.

On the last day of December he went to
Albany, and on the day following, dispen-
with the usual parade, he walked with a
friend through the streets from the Execu-
ive Mansion to the Capitol, and took the oath
of office. He entered upon his office, in the
words of his inaugural address, “fully ap-
crating his relations to the people, and deter-
mised to serve them faithfully and well.”

The very beginning of his administration was
marked by radical reforms in the Executive
Chamber. Persons having business with the
Governor were immediately and informally
mitted, without running a gauntlet of clerks
and doorkeepers. Less rich than many former
Governors, with private means of not more
than $50,000, Governor Cleveland lived upon
and within his official salary, simply and un-
entation, keeping no carriage, and daily
walking to and from his duties at the Capitol.

Among the salient acts of his administration
were his approval of a bill to submit to the
people a proposition to abolish contract labor
in the prisons, and when so submitted the sys-
tem was abolished by an overwhelming major-
ity; his veto of a bill that permitted wide lati-
ude in the investments into which directors of
savings-banks might put deposit; and the veto
of a similar bill allowing like latitude in the
vestment of securities of fire-insurance com-
panies. He vetoed a bill that was a bold effort
to establish a monopoly by limiting the right
to construct certain street railways to com-
panies-bertofore organized, to the exclusion
of such as should hereafter obtain the consent
of property-owners and local authorities. His
much-criticised veto of the “five-cent-fare”
ill, which proposed to reduce the rate of
fare on the elevated roads in New York city
from ten cents to five cents for all hours in the
day, was simply and solely because he consid-
ered the enactment illegal, and a breach of the
plighted faith of the State. The general rail-
road law of 1865 provides for an examination
by State officers into the earnings of railroads
before the rates of fare can be reduced; and as
this imperative condition had not been compiled
with previous to the passage of the bill, he
vetoed it. He vetoed the Buffalo Fire Dep-
artment bill because he believed its provisions
would prevent the “economical and efficient
administration of an important department in
a large city,” and subject it to partisan and
personal influences. In the second year of his
administration he approved the bill enacting
important reforms in the appointment and ad-
mistration of certain local offices in New
York city. His State administration was only
an expansion of the fundamental principles
that controlled his official action while Mayor
of Buffalo. In a letter written to his brother on the day of his election, he announced the policy he intended to adopt and afterward carried out, "that is, to make the matter a business engagement between the people of the State and myself, in which the obligation on my side is to perform the duties assigned me with an eye single to the interest of my employers."

The National Democratic Convention met at Chicago, July 8, 1884. Three days were devoted to organization, platform, and speeches in favor of candidates. In the evening of July 10 a vote was taken, in which, out of 820 votes, Grover Cleveland received 692. A two-thirds vote (557) was necessary to a nomination. On the following morning, in the first ballot, Cleveland received 668 votes, and, on motion of Thomas A. Hendricks (subsequently nominated for the vice-presidency), the vote was made unanimous. He was officially notified of his nomination by the Convention Committee at Albany, July 29, and made a modest response, promising soon to signify in a more formal manner his acceptance of the nomination. Nearly three weeks later, while the Governor was taking a brief vacation at Upper Saranac Lake, he wrote and made public the following letter:

ALBANY, N. Y., Aug. 18, 1884.

Dear Gentleman: I have received your communication, dated July 25, 1884, informing me of my nomination to the office of President of the United States by the National Democratic Convention lately assembled at Chicago.

I accept the nomination with a grateful appreciation of the supreme honor conferred, and a solemn sense of the responsibility which, in its acceptance, I assume.

I have carefully considered the platform adopted by the convention, and cordially approve the same. Its plain statement of Democratic faith, and the principles upon which that party appeals to the suffrages of the people, needs no supplement or explanation.

It should be remembered that the office of President is essentially executive in its nature. The laws enacted by the legislative branch of the Government the Chief Executive is bound faithfully to enforce. And when the wisdom of the political party which selects one of its members as a nominee for that office has outlined its policy and declared its principles, it seems to me that nothing in the character of the office or the necessities of the case requires more from the candidate accepting such nomination than the suggestion of certain well-known truths, so absolutely vital to the safety and welfare of the nation that they can not be too often recalled, or too seriously enforced.

We proudly call ours a government by the people. It is not free when a class is tolerated, which arrogates to itself the management of public affairs, seeking to control the people instead of representing them. Parties are the necessary outgrowth of our institutions, but a government is not by the people when one party fastens its control upon the country, and proceeds upon misgaging and betraying the people instead of serving them.

A government is not by the people when a result which should represent the intelligent will of free and thinking men, is or can be determined by the shameless corruption of their suffrages.

When an election to office shall be the selection by the voters of one of their number to assume for a time a public trust, instead of his dedication to the professions of politics; when the holders of the ballot, quickened by a sense of duty, shall avenge truth betrayed and pledges broken, and when the suffrage shall be altogether free and uncorrupted, the fall realization of a government by the people will be at hand. And of the means to this end, not one would, in my judgment, be more effective than an amendment to the Constitution disqualifying the President from re-election. When we consider the patronage of this great office, the allurement of power, the temptation to retain public place once gained, and, moreover, the availability a party finds in an incumbent when a horde of office-holders with a zeal born of benefits received and fostered by the hope of favors to the office stand ready to aid with money and trained political service, we recognize in the eligibility of the President for re-election a most serious danger to that calm, deliberate, and intelligent political action which must characterize a government by the people.

A true American sentiment recognizes the dignity of labor, and the fact that honor lies in honest toil. Contented labor is an element of national prosperity. Ability to work constitutes the capital and the wage of labor, the income of a vast number of our population, and the production of the culture and the needs of the employers and the employed shall alike be safeguarded, and the prosperity of the country, the common heritage of all, be advanced.

As we consider this subject, while we should not discourage the immigration of those who come to acknowledge allegiance to our Government, and add to our citizenship, yet, as a means of protection to our working men, a different rule should prevail concerning those who, if they enter the land or are born here, do not intend to become Americans, but will injuriously compete with those justly entitled to our field of labor.

In a letter accepting the nomination by the late Governor, nearly two years ago, I made the following statement, to which I have steadily adhered: "The laboring-classes constitute the main part of our population. They should be protected in their rights to the peace and good order of the community. The limit between the proper subjects of governmental control, and those which can be more fittingly left to the moral sense and self-imposed restraint of the citizen, should be carefully kept in view. Thus, laws unnecessarily interfering with the habits and customs of any of our people will be objected to, and the moral sentiments of the civilized world, and which are consistent with good citizenship and the public welfare, and this interest should be self-indulgent injury.

In a free country the curtailment of the absolute rights of the individual should only be such as is essential to the peace and good order of the community.

The commoner of a nation to a great extent determines its supremacy. Cheap and easy transportation should therefore be liberal, and the limits of the Constitution, the General Government should so improve and protect its natural waterways as will enable the producers of the country to reach a profitable market.

The people pay the wages of the public employe., and they are entitled to the fair and honest work which the money thus paid should command. It is
Cleveland, Grover, 149

The following table gives the electoral vote:

<table>
<thead>
<tr>
<th>STATES</th>
<th>Electors</th>
<th>Vote for President</th>
<th>Vote for Vice President</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>10</td>
<td>Missouri</td>
<td></td>
</tr>
<tr>
<td>Arkansas</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>California</td>
<td>10</td>
<td>Nevada</td>
<td></td>
</tr>
<tr>
<td>Colorado</td>
<td>8</td>
<td>New Hampshire</td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td>6</td>
<td>New Jersey</td>
<td></td>
</tr>
<tr>
<td>Delaware</td>
<td>8</td>
<td>New York</td>
<td></td>
</tr>
<tr>
<td>Florida</td>
<td>14</td>
<td>North Carolina</td>
<td></td>
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<tr>
<td>Georgia</td>
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<td>Illinois</td>
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<td>4</td>
<td></td>
</tr>
<tr>
<td>Indiana</td>
<td>15</td>
<td>Pennsylvania</td>
<td></td>
</tr>
<tr>
<td>Iowa</td>
<td>10</td>
<td>Rhode Island</td>
<td></td>
</tr>
<tr>
<td>Kansas</td>
<td>9</td>
<td>South Carolina</td>
<td></td>
</tr>
<tr>
<td>Kentucky</td>
<td>10</td>
<td>Tennessee</td>
<td></td>
</tr>
<tr>
<td>Louisiana</td>
<td>9</td>
<td>Texas</td>
<td></td>
</tr>
<tr>
<td>Maine</td>
<td>9</td>
<td>Vermont</td>
<td></td>
</tr>
<tr>
<td>Maryland</td>
<td>8</td>
<td>Virginia</td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td>14</td>
<td>West Virginia</td>
<td></td>
</tr>
<tr>
<td>Michigan</td>
<td>9</td>
<td>Wisconsin</td>
<td></td>
</tr>
<tr>
<td>Minnesota</td>
<td>7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mississippi</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>719</strong></td>
<td><strong>158</strong></td>
<td></td>
</tr>
</tbody>
</table>

Which gave Cleveland a majority of 37.

Late in December the Executive Committee of the National Civil-Service Reform League addressed a letter to President-elect Cleveland, commending to his care the interests of civil-service reform. Mr. Cleveland's reply, dated December 25, was as follows:

That a practical reform in the civil service is demanded is absolutely established by the fact that a statute, referred to in your communication, to secure such a result, has been passed in Congress, with the consent of both political parties; and by the further fact that a sentiment is generally prevalent among patriotic people calling for the fair and honest enforcement of the law which has been thus enacted. I regard myself pledged to this because my conception of true Democratic faith and public duty requires that this and all other statutes should be in good faith and without evasion enforced, and because in many utterances made prior to my election as President, approved by the party to which I belong and which I have no disposition to disclaim, I have in effect promised the people that this should be done. I am not unmindful of the fact to which you refer, that many of our citizens fear that the recent party change in the national Executive may demonstrate that the abuses which have grown up in the civil service are ineradicable. I know that they are deeply rooted, and that the spoils system has been supposed to be intimately related to success in the maintenance of party organization, and I am not sure that all those who profess to be the friends of this reform will stand firmly among its advocates when they find it obstructing their way to patronage and place. But, fully appreciating the trust committed to my charge, to such consideration shall cause a relaxation on my part of an earnest effort to enforce this law.

There is a class of Government positions which are not within the letter of the civil-service statute, but which are so disconnected with the policy of an Administration that the removal and substitution of present incumbents, in my opinion, should not be made during the terms for which they were appointed, solely on partisan grounds, and for the purpose of putting in their places those who are in political accord with
the appointing power. But many now holding such positions have forfeited all just claim to retention, be-
cause they have used their places for party purposes in
disregard of their duty to the people, and because,
instead of being decent public servants, they have
proved themselves offensive partisans and unscrupu-
ulous manipulators of local party management. The
lessons of the past should be unlearned, and such
officials, as well as their successors, should be taught
that efficiency, fitness, and devotion to public duty
are the conditions of their continuance in public place,
and that the quiet and unobtrusive exercise of indi-
vidual political rights is the reasonable measure of
their party service.

If I were addressing none but party friends, I should
deed it entirely proper to remind them that, though
the coming administration is to be Democratic, due
regard for the people's interest does not permit faith-
ful party work to be always rewarded by appointment
to office, and to say to them that, while Democrats
may expect all proper consideration, selections for
office not embraced within the civil-service rules will
be based upon sufficient inquiry as to fitness, insti-
tuated by those charged with that duty, rather than
upon personal importance or self-solicited recom-
mendations on behalf of candidates for appointment.

When the New York Legislature assembled,
January 6, 1885, Mr. Cleveland resigned the
governorship of the State. (See United States
New York.)

CLUB, a private association, of which the so-
cial element is the distinctive feature, with a
common purpose and common expenses. This
definition of the modern club distinguishes it
from political, scientific, religious, or other so-
cieties in which the social element is second-
ary to the real or the professed objects of the
organization.

Political clubs were very numerous and in-
fluential in France during and before the Revo-
lation, which indeed was in great part brought
about by their agency, and after which they
were suppressed. The true social club, with
political or artistic objects, more or less definite-
ly pursued, has flourished in England since the
time of Addison; and it is in England that the
culture of the day has attained the most perfect development, and during the
present century, though several of the English
clubs are older than this.

Club-life forms an important and permanent
feature of the social life of the British capital,
where nearly a hundred clubs exist, with a
very large and influential membership. They
are entirely maintained, as a rule, by the en-
trance-fees and the annual dues of members.
These, in the more important clubs, range re-
spectively from $100 to $200 and from $55 to
$50. For these payments the member becomes
one of a carefully chosen society, numbering
from a few hundred to over two thousand
members in the larger clubs, which have in-
comes ranging from $100,000 to $150,000 per
annum. He has the use and privilege of a pala-
tial club-house, with restaurant, library, con-
versation-rooms, and works of art, and in addi-
tion certain opportunities that are scarcely
within the reach of private fortunes, the club-
houses being frequented by the most prominent
men, and thus forming a social exchange that
does not elsewhere exist in London, unless it
be in the House of Commons, which has been
witty but not very accurately defined as "the
best club in England."

In the United States, owing to the smaller
number of independent and permanent fortunes
and the consequent lack of a leisure class, clubs
do not constitute an important feature of social
life unless in a few of the larger cities. Even
there few of the clubs are firmly established or
free from debt, the usual reason of the pecu-
liary embarrassment being that the restaur-
ants is expensive managed and poorly patronized.
This feature, one of strength in the English club,
is one of weakness in the American, mainly be-
cause of the different ideas entertained in the
two countries respecting the function of the
club. In England it is considered as existing to
increase both the comforts and the econo-
 mies of living, and it is an example of the co-
operative system on a large scale in respect to
the restaurant and other supplies furnished.
The aim of the management is to furnish all such
articles to members as nearly at cost or whole-
sale price as possible, making no profit out
of members, but paying all the running expenses
of the club by the receipts from annual and ad-
mission fees. Another system prevails in the
American clubs, which generally seek to make
a profit out of the members on all articles
that they consume. The result of this sys-
tem is a smaller membership, and consequently
higher annual fees, a smaller attendance, less
use of the restaurant, and consequent pecu-
liary embarrassment in the majority of cases.
In the leading clubs, both of London and of
the United States, the average admission-fee is
about $140; the annual dues average about $40
and $50 respectively.

Weekly, monthly, and annual meetings are
held at most of the stronger clubs; and the
doors are constantly open for the accommo-
dation of a great many members not numerous in
this country, who make a home of the club-
house and pass a large part of their time within
its walls.

Membership in the leading clubs is much
sought after, and there is considerable diversity
in the manner of the election. The leading
ways of election are: 1. By ballot at a club
meeting; 2. By the decision of a committee on
admissions; or, 3. By ballot of the club upon
such names only as are recommended by a
committee on admissions. The last method
is preferred in many clubs, as intrusting the
investigation of the candidate's availability to
a private committee charged with this duty,
while yet the formal decision is made at a full
meeting of the club. In this way the can-
didate's qualifications are more fairly and deliber-
ately canvassed than in any other; while the
name of any candidate who may fail to receive
the recommendation of the committee is sim-
ply passed over without action on the part of
the club, and finally dropped from the list of
candidates, which is kept posted in the club-
The unsuccessful candidate is thus the unpleasant experience of blackballing in the rare cases when the club recommend the candidate. Three fourths of the club-men of New York married, and more than half of them of large professional or business re-"cities. While there are clubs in which crime of gaming and other dissipations are permitted, yet club membership represents the best part of the public's social life of great cities. The habit of fostering may be described as a cross domestic life and the life of bachelors. The social life of Europe and America is most of the women. Women's clubs and mixed have been essayed both in this country and, but have not as a rule been per- becoming.

The Sorosis, the only woman's club in the United States, has had exceptional success. The Société de l'Harmonie of Antwerp, is an old and flourishing mixed club devoted to social and musical purposes. The membership is large, but is very carefully guarded; it includes entire families. The meetings are held at the club-house and garden in the suburbs of the city, where music of the highest class is performed by the orchestra of the Royal Opera three times a week. The Liederkrans of New York, a German musical club, is also a mixed club, and is strong and successful. It gives admirable private concerts under the best leadership, and has a fine club-house and musical library.

The following table includes some of the more prominent clubs of England, France, and America, and shows the main statistical points in respect to each:

### AMERICAN CLUBS

<table>
<thead>
<tr>
<th>NAME OF CLUB</th>
<th>Date of foundation.</th>
<th>Number of members.</th>
<th>Admittance fee.</th>
<th>Annual dues.</th>
<th>Character or objects.</th>
</tr>
</thead>
<tbody>
<tr>
<td>navy, New York</td>
<td>1866</td>
<td>1,000</td>
<td>$10</td>
<td>$20</td>
<td>Racing.</td>
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<tr>
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</tr>
<tr>
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<td>50</td>
<td>$50</td>
<td>$50</td>
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</tr>
<tr>
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<tr>
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<td>500</td>
<td>$25</td>
<td>$25</td>
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</tr>
<tr>
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<td>1848</td>
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<td>$25</td>
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<tr>
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<td>500</td>
<td>$25</td>
<td>$25</td>
<td>Social.</td>
</tr>
<tr>
<td>new York</td>
<td>1859</td>
<td>150</td>
<td>$25</td>
<td>$25</td>
<td>Social.</td>
</tr>
<tr>
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<td>$25</td>
<td>$25</td>
<td>Social.</td>
</tr>
<tr>
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<td>300</td>
<td>$25</td>
<td>$25</td>
<td>Social.</td>
</tr>
<tr>
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<td>100</td>
<td>$25</td>
<td>$25</td>
<td>Social and historical.</td>
</tr>
<tr>
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<td>600</td>
<td>$25</td>
<td>$25</td>
<td>Social and literary.</td>
</tr>
<tr>
<td>new York</td>
<td>1859</td>
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<td>$25</td>
<td>$25</td>
<td>Social and literary.</td>
</tr>
<tr>
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<td>$25</td>
<td>Social and literary.</td>
</tr>
<tr>
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<td>$25</td>
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</tbody>
</table>
| London clubs

<table>
<thead>
<tr>
<th>NAME OF CLUB</th>
<th>Date of foundation.</th>
<th>Number of members.</th>
<th>Admittance fee.</th>
<th>Annual dues.</th>
<th>Character or objects.</th>
</tr>
</thead>
<tbody>
<tr>
<td>navy</td>
<td>1869</td>
<td>3,643</td>
<td>40</td>
<td>10</td>
<td>Military.</td>
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<td>1,883</td>
<td>50</td>
<td>10</td>
<td>Literary and social.</td>
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<tr>
<td>new York</td>
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<td>2,000</td>
<td>50</td>
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<td>Tory.</td>
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<td>Conservative.</td>
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<td>50</td>
<td>10</td>
<td>Social.</td>
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<tr>
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<td>50</td>
<td>10</td>
<td>Military.</td>
</tr>
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<td>50</td>
<td>10</td>
<td>Literary and dramatic.</td>
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</tr>
<tr>
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<td>50</td>
<td>10</td>
<td>Social.</td>
</tr>
<tr>
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<td>1870</td>
<td>1,500</td>
<td>50</td>
<td>10</td>
<td>Social.</td>
</tr>
<tr>
<td>new York</td>
<td>1870</td>
<td>1,500</td>
<td>50</td>
<td>10</td>
<td>Social.</td>
</tr>
<tr>
<td>new York</td>
<td>1870</td>
<td>1,500</td>
<td>50</td>
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</tr>
<tr>
<td>new York</td>
<td>1870</td>
<td>1,500</td>
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</tr>
<tr>
<td>new York</td>
<td>1870</td>
<td>1,500</td>
<td>50</td>
<td>10</td>
<td>Social.</td>
</tr>
<tr>
<td>new York</td>
<td>1870</td>
<td>1,500</td>
<td>50</td>
<td>10</td>
<td>Social.</td>
</tr>
<tr>
<td>new York</td>
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<td>50</td>
<td>10</td>
<td>Social.</td>
</tr>
<tr>
<td>new York</td>
<td>1870</td>
<td>1,500</td>
<td>50</td>
<td>10</td>
<td>Social.</td>
</tr>
</tbody>
</table>
COCAINE, HYDROCHLORATE OF. See Drugs, New.

COLOMBIA, an independent republic of South America.

Boundary Questions.—The question of limits between Colombia and Venezuela, referred to the King of Spain for decision, was still unsettled at the close of the year. It was reported in November, 1884, that the maps of the Colombian frontiers, dating from colonial times, and executed by order of the viceroys, and purchased for $3,000 by the Government of Colombia in 1877, had disappeared from the Ministry of Foreign Affairs.

The ancient question of territorial jurisdiction with Nicaragua has again been mooted in the Colombian press, apropos of the Nicaraguan interoceanic canal project; but up to Dec. 31 no exchange of official correspondence had taken place on the subject between the Governments of the two republics.

Area, Territorial Division, Population, etc.—A detailed statement concerning these may be found in the "Annual Cyclopaedia" for 1877. In the census returns of 1870 the population was set down in round numbers at 3,000,000; and an official estimate gave it at 4,000,000 in 1881. The 3,000,000 in 1870 included 50,000 uncivilised Indians, and showed the civilised population to comprise 1,484,180 males and 1,515,870 females.

According to the census of 1884, Bogota, the capital of the republic, had 26,915 inhabitants — 44,093 males and 51,723 females. Among the trades and professions were included the following: Lawyers, 324; physicians, 126; clergymen, 153; farmers, 1,962; artisans, 20,807; artists, 250; merchants, 5,567; students, 1,031; laborers, 5,567; soldiers, 1,628; priests, 31.

Government, Government Officers, etc.—By the terms of the Constitution of May 8, 1863, the executive power is exercised by a President elected for two years, and the legislative power by a Senate and House of Representatives. The Senate is composed of 27 members, three for each of the nine States of the republic; and the House of 66 members, elected by universal suffrage, at the rate of one for every 50,000 inhabitants in each State, and one more for every additional 30,000. The designados, or substitutes, are elected each year by Congress to fill, in order of seniority, any vacancy occurring in the presidency. Each State has, besides, its own Legislature, and a chief magistrate with the title of President, except Cundinamarca, where that functionary is styled Governor.

The President of the Republic is Dr. Rafael Núñez, whose term of office was to have begun April 1, 1884.*

The Cabinet was composed of the following ministers: Interior, M. Castro; Foreign Affairs, Eustorgis Salgar; Finance, J. M. Caro; War, Gen. José María Campo Serrano; Public Instruction, N. Barrero; Commerce and Communication, F. Angulo; Public Works, J. J. Vargas.

The chief magistrates of the several States were:

- Antioquia: President T. Llano.
- Bolivar: President V. García.
- Boyacá: President P. J. Berruete.
- Cauca: President E. Payan.
- Cundinamarca: Governor Daniel Atana.
- Magdalena: President M. S. Ramón.
- Nariño: President D. Cervera.
- Santander: President González Linero.
- Tolima: President Gabriel Gommez.

Diplomatic and Consular Corps.—The United States Minister Resident at Bogotá is Mr. W. L. Scrogg; and the United States Consuls at Aspinwall, Barranquilla, Cartagena, Medellin, and Panama are, respectively, Messrs. E. W. Rice, T. M. Dawson, E. W. P. Smith, E. E. Edmund, and T. Adamson. The Colombian Consul-General at New York is Señor Lino de Pombo.

Army.—The peace footing of the army, determined each year by the Legislature, was fixed at 4,000 for 1885–86 by act of Aug. 16, 1882. The war footing is determined by the Executive as circumstances may require. On Dec. 9, 1884, in consequence of the disturbed condition of the country, President Núñez issued a decree raising the strength of the Federal army to 8,000.

From Dec. 22, 1882, to Jan. 1, 1888, the national Treasury paid out $718,667 to the Army Department.

Education.—President Otálora, in his message to Congress on the opening of the session in February, 1884, says that the total attendance at the various establishments for public instruction throughout the republic (exclusive of those of the States of Cauca and Bolivar) during the year 1883 was 60,011—1,266 at the colleges and normal schools, and 58,745 at the primary schools.

* President-elect Núñez having been absent, the presidential chair was temporarily occupied by the First Designado, General Esequiel Hurtado.
COLOMBIA.

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schools. The total expenditure for the Department of Public Instruction for the year mentioned was $219,762.80.

Newspapers.—No fewer than forty-five periodicals of all kinds are published in Bogotá, the capital of the republic—a goodly number for a city of less than 60,000 inhabitants, of whom only 64,500 can read and write.

In October the Conservative party, through their recognized organ, published a list of ten reforms that they considered requisite to the perfecting of the Constitution. The eighth of the proposed reforms, and one likely to provoke a storm of contention, read as follows: "We ask for universal public instruction, and that the education of our youth should have for its basis the religious belief of the people of Colombia." This reform would be the repletely the educational system in the hands of the clergy.

Finance.—The financial condition of Colombia seems to be one of hopeless bankruptcy. The total amount of the revenue for the fiscal year ending Aug. 31, 1888, was $4,008,010, derived from the following:

**Sources of National Income.**

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customs</td>
<td>$431,3719</td>
</tr>
<tr>
<td>Salt works</td>
<td>907,429</td>
</tr>
<tr>
<td>Parangal Railway</td>
<td>10,000</td>
</tr>
<tr>
<td>Bolivar Railway</td>
<td>172,589</td>
</tr>
<tr>
<td>Santa Fe</td>
<td>80,649</td>
</tr>
<tr>
<td>Post Office</td>
<td>17,028</td>
</tr>
<tr>
<td>Magdalena River tax</td>
<td>740,977</td>
</tr>
<tr>
<td>Salt imports</td>
<td>136,156</td>
</tr>
<tr>
<td>Tobacco</td>
<td>59,040</td>
</tr>
<tr>
<td>National properties</td>
<td>6,405</td>
</tr>
<tr>
<td>Merchants properties</td>
<td>39,945</td>
</tr>
<tr>
<td>Rice</td>
<td>4,781</td>
</tr>
<tr>
<td>Salt consumed in the interior</td>
<td>1,006</td>
</tr>
<tr>
<td>Tobacco</td>
<td>400,190</td>
</tr>
<tr>
<td>Total</td>
<td>$4,008,010</td>
</tr>
<tr>
<td>Expenditure</td>
<td>7,077,966</td>
</tr>
<tr>
<td>Deficit</td>
<td>$1,069,956</td>
</tr>
</tbody>
</table>

"In these returns (of revenue) the Magdalena river tax, fords, and marine salt, are made to figure, although they should not appear as credits in the Treasury, since each item had been previously set apart, by law, for a certain purpose. The river tax has to be expended for keeping the Magdalena and Tolima rivers clear; the salt duties belong to the Atlantic States; the fords, to the States of Tolima and Cundinamarca; and the tax on marine salt, if it is not a complete illusion, should go to the last-named States. These sums must therefore be deducted from the budget, and then we find ourselves with only $5,999,785 which with which to cover all the expenses of government, meet the charges on the home and foreign debts, and other heavy liabilities. It will also be observed that the river taxes represent but a trifling sum. This arises from the fact that the accounts had not been sent in by the employees intrusted with the control of that department. The amount of that tax has been more accurately reported at $318,556. Similar obscurity is observable in the returns of customs receipts, salt-works, cologne dues, national properties, salt imports, and stamps, as respectively made by the receiving and disbursing ministers, and which show scandalous discrepancies, to the amount of $192,588, which I fail to comprehend." *

In the budget estimates for 1884-85 the revenue and expenditure figured at $4,182,990.75 and $3,390,945.60, "with, of course, a deficit, but, after all, a deficit reduced to insignificant proportions"—$493,996.00. "In preparing the budget, the Government has had in view the landable aim of establishing an equilibrium between the national income and outlay. But that is not the most difficult that awaits the Congress of 1884; it has before it the very arduous one of organizing the country's credit upon a firm basis. The Legislature should be stimulated by the reflection that so long as Colombia neglects her credit abroad, she will not be able to gather means to build roads and other roads requisite for the development of her public and private resources; and that so long as the home debt continues to be a permanent debt of the Treasury, the palace of San Carlos will be continually besieged by creditors." In 1881 Congress cost $180,184," says a Bogotá journal; "in 1883 it cost $290,889; and in 1888, $898,881. At this rate, within four years it will cost $1,000,000, and meanwhile poverty is universal, and our credit at home and abroad grows worse daily." A decree, dated Dec. 19, 1888, increases to 75 cents per kilogramme the import duty on all articles of Class V of the tariff.

The condition of the national finances had become so alarming in March, 1884, that the Senate, not content with the exposition contained in the President's message, demanded of the Ministers of the Treasury and of Finance a minute report of their respective departments, to be submitted for examination to the *Comisión de Ordeño Público* (Committee on Ways and Means), with a view to the passage of a law to enforce regularity in the service of the national debt.

The state of this debt, as presented by President Otálora in February, was as follows:

| Capital of the foreign debt | $2,570,000 00 |
| Arrears of interest: 1875-76 | $73,634 00 |
| 1876-77 | $90,919 00 |
| 1877-78 | $454,655 00 |
| Total foreign debt Dec. 31, 1888 | $3,566,550 00 |
| Home debt | 10,640,956 86 |
| Total national debt Dec. 31, 1888 | $13,207,506 86 |

The ministers' reports, when presented, were found to be no more satisfactory than the President's statement, and the Senate then read the second of inquiry into the causes of the evil, in order to have the suitable remedy applied without further delay. Among other expedients suggested was that of the consolidation of the home debt, which measure, with a general system of econo-

* From Mr. Groot's review for February, 1884, published in Bogotá.
my consistent with wise administration, would, it was expected, place the Government in a position to meet its obligations without having recourse to alternatives fatal to the credit or prejudicial to the industry of the republic. Appropriating one million to the payment of interest on the whole debt (should the proposed consolidation of the home debt be effected), and another million for the works of improvement already begun, there would remain four millions with which to cover the expenses of the Government.

The following remarks are transcribed from the annual report of the Council of Foreign Bondholders, published in London, February, 1884: "The Council regret that they are obliged to report that another year has passed without any decided step being taken by Colombia to restore her credit in this country, and that no serious attempt has been made to resume payment on the external debt. Some months ago a special commissioner was sent to Europe to open negotiations, one object of his mission being to obtain, if possible, a loan for the carrying out of railway works, of which Colombia stands much in need. He has now, however, been recalled, and the negotiations toward which an approach was made by him, for an arrangement of the 45 per cent. debt, are consequently at a standstill, pending the arrival of his successor, who, the Council learn from an authentic source, has been appointed as Minister Plenipotentiary to this country, and who, it is stated, will bear all the necessary instructions for negotiations to effect an arrangement."

On Oct. 1, 1884, the returns for August from the custom-houses had not yet reached the capital; but, estimating from the previous eleven months, from September, 1888, to Aug. 1, 1884, when the receipts amounted to $3,500,833, it was presumed that the revenue from that source for the whole fiscal year would reach $3,818,833, which would show a diminution of $541,879, as compared with the years 1888-89. A loan had been ordered, and under that law $200,000 would have been raised at 1 per cent. per annum—the bonds being receivable in all Government offices in the proportion of one fifth of all payments. A loan of $1,000,000 was also to be effected, at par, the bonds to bear interest at 12 per cent. A law had been passed establishing custom-houses in Panama, Colon (Aspinwall), Brancas, and Orucu, where duties were to be collected at 40 per cent. less than the actual tariff rates.

"Economic."—"The decadence of our commercial transactions," writes a native economist in October, 1884, "which results from the low prices realized by our few articles of export which can be conveyed at a profit to the coast over our horrible roads, the scarcity of manufacturing industries, owing to the impossibility of transporting ponderous machinery into the interior, and the fact that agricultural opera-

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tions are limited to the supply of mere local wants, are the undoubted causes of the extreme poverty of the nation. Work not being profitable, pauperism is engendered, and the love of dabbling in politics ruins all efforts toward social improvement." The foreign trade of the republic for the year 1882-83 was of the total value of $28,361,188 (of which amount $1,504,028 represented the imports), against $26,88,871 for 1881-82 (Imports $12,355,655; exports, $18,514,116).

The value of the exports to the United States in 1883 was $6,171,473; and that of the imports therefrom, $6,886,971, showing a balance of $1,697,498 in favor of the latter country.

The exports to Great Britain and the imports therefrom in 1882 were of the respective values of $5,601,850 and $5,083,040.

The exports from Sabanilla for the year 1888 amounted to $6,912,385, and included the following articles: Peruvian bark, $3,058,500; hides, $1,152,500; coffee, $1,446,620; cacao, $80,130; ivory-nuts, $71,110; banana, $60,000; plants, $57,450; balsam, $52,740; cacao, $44,400; deer-skins, $31,000; divinit, $14,240; goat-skins, $4,270; indigo, $4,260; cotton, $4,260; sarsaparilla, $260, etc. Of these exports, the largest share was taken by Great Britain ($3,096,600); the United States received $3,079,380 worth; France, about $724,000; Germany, $465,000.

The exports from Cartagena during the septennial period 1877-82 were as follows:

<table>
<thead>
<tr>
<th>Years</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877</td>
<td>$201,670</td>
</tr>
<tr>
<td>1878</td>
<td>$206,786</td>
</tr>
<tr>
<td>1879</td>
<td>$382,294</td>
</tr>
<tr>
<td>1880</td>
<td>$1,304,786</td>
</tr>
</tbody>
</table>

The principal staples shipped from that port in 1888 were: Cattle (23,962 head), $279,435; India-rubber, $371,135; ivory-nuts, $149,607; hides, $1,123,202; mora-wood, $90,554; tobacco, $80,001; balsam, $49,685; coffee, $36,061.

The shipments of cattle, unusually large in the year mentioned, were divided between Cuba and the Isthmus of Panama, 21,906 head to the former, and 2,058 to the latter. The ivory-nuts were tolerably evenly distributed between Great Britain, Germany, and the United States, while this last country took by far the largest proportion of the hides and coffee.

With the opening of the "dique," the commerce of Cartagena would, it is asserted, increase very materially, but at the expense of the river-port of Barranquilla.

In the official report of the commerce of Mexico for the quarter ending March, 1888, figure exports to Colombia of the value of $118,877.50, of which $106,845.50 was for precious metals.

In regard to national industries, the most noteworthy incident of the year was the manu-

* Including $149,184 for merchandise not produced in, but re-exported from, the United States.
COLOMBIA.

was $149,981, and the yield, $111,698; deficit, $928,388.

Panama Canal.—The following statements concerning the financial situation of the company and the progress of the work are extracted from the annual report of Ferdinand dc Lesseps and the council of administration upon the Panama Canal, delivered July 24, 1884:

**FINANCES.**

All expenditures for work proper upon the canal in 1883........... $106,418,097

Machinery and real estate, the purchase of $66,944 shares of the Panama Railway, and incidental expenses.................................................. 110,925,728

Total............................................................................. $227,343,825

Deducting from this unpaid debts and rediscounts, 117,479,248

Total net expenses to June 30, 1884.......................... $111,964,577

As, against this outlay, there is the product of $800,000 shares at 5 per cent., issued in September, 1882, and other incomes, amounting to $41,668,700.

Deducting the expenditures........................................ $111,964,577

Amount disposable on June 30, 1884.......................... $41,668,700

This last sum can be subdivided into $43,339,000 bonds of $800,000 each at 8 per cent., payable in installments, of which the last two mature in August and October of this year. Of the $800,000,000 bonds last authorized, there is a reserve in bonds of $125,000,000.

**Panama Railway.**—The Panama Railway has been put in thorough repair, new depots and shops built, and rolling-stock added. Instead of eight trains daily, as in 1882, twenty-two trains now pass over the line. The dividend on the stock, which was 15½ per cent. in 1882, was 15 per cent. in 1883, and will probably reach 16 to 17 per cent. in 1884. The company owns 63,094 shares out of the total of 70,000 shares.

**Sanitary Condition of Laborers.**—No pains have been spared in caring for the health of the workmen, and the organization of the medical service has been made thorough and complete. During 1883-94 the cost per patient has been 5-73 francs per day at Panama, and 7-93 at Aspinwall. With from 7,000 to 10,000 men at work, the mortality rate was about 3 per 1,000 to September, 1883; with from 11,000 to 16,000, it was about 5-50 per 1,000 to April, 1884; and with from 18,000 to 19,000 men employed during the last two months, it was about 8 per 1,000.

**Progress of the Works.**—The programme of operations fixed, adopted by M. Dingler, and approved by the consulting committee of engineers, was as follows:

1. Construction of the canal with a normal depth of nine metres (29-22 feet) below the mean sea-level.
2. Width of the bottom of the canal twenty-two metres (72.16 feet).
3. A direct cut from sea to sea, open to the sky throughout its entire length.
4. A lock with tide-gates at Panama, to insure communication with the Pacific at any hour and under any condition of tides and temporary currents.
5. The creation of immense harbors at Aspinwall and Panama.
6. The excavation of a grand side-basin, five kilometres (3.1 miles) long, about the central point of the canal, near Taberrulla, to facilitate the passage of ships in either direction.
7. The dam at Gamboa, for the regulation of the flood-waters of the Chagres, with diverting channels for that stream.

This programme means a total of 148,880,000 cubic yards of earthwork for the digging of the canal proper, and the enlargement of the ports at either end sufficiently for traffic.

The work of changing the course of the Chagres is equivalent to a total of 18,080,000 cubic yards. In the original estimate the digging of the canal was put down at 98,100,000 cubic yards, with the expectation that this could be reduced to 95,466,686 cubic yards, but, as work has progressed, we find in one portion a smaller quantity of hard rock than estimated; on the other hand, a greater quantity of earth capable of being moved by cheaper processes; the economy in time resulting from this improved condition will, in some degree, compensate for the extra amount to be moved.

The progress achieved may be stated as follows:

| Work done previous to Jan. 1, 1884 | 3,420,772 |
| Work done in the first four months of 1884 | 5,517,000 |
| Total work done to May 1, 1884 | 8,937,772 |

The actual cube of work done in the first four months of 1884 almost equals the total previous work done to Jan. 1, 1884. This progress, slow but sure, sacrificing nothing to effect, is in accordance with the resolutions made at the organization of the company.

The working force, consisting of 8,000 men in the first months of 1884, has now been increased by the rebels to 10,000; and any number required can at all times be drawn from the West Indies.

M. Dingler, the director-general of the works, estimates that, of the 148,880,000 cubic yards to be removed in digging the canal, 92,820,000 can be raised by dredge—the most economical and expedient methods. Including the trenches at the Chagres river, 18,080,000 cubic yards, there would remain 104,040,000 cubic yards to be removed dry, and for the extraction of which we have machinery of the following capabilities per month:

- Each large car, allowing for loss of time, 294 cubic yards.
- Each Decano car, 130 cubic yards.
- Each transporter, 89,240 cubic yards.

Hence, 4,600 large, and 4,000 Decano cars, with 20 transporters, will give a monthly total of 2,618,000 cubic yards. Now, if the 40 dredges, without counting the 4 60-horse power dredges, will give a total of 654,000 cubic yards. The dry with the material above mentioned, is limited to require three years for its completion, and the dredges will accomplish their two. Hence, the dry work best commenced on Jan. 1, 1885, and the dry one year later, the canal could be finished Jan. 1, 1888.

Politics—The sessions of the Legislative which opened on Feb. 1, 1884, were closed September 20th, and the following day assemblies met in Boyacá, Cundinamarca, and Panamá. The maintenance of peace was the chief object of the Government during the month mentioned. In the State of Santander civil war seemed imminent, but was prevented by the intervention of the Federal Government. Meantime the revolutionary party had broken out in Cundinamarca, but the law was not immediately proclaimed in the State, the national Government, which was extremely popular, deeming it expedient "to trust to the reflection and patriotism of the contending parties," rather than to apply extreme measures of repression. Disturbances were reported at Panamá, conspiracy re-openly in Cauca and Magdalena, and clouds overhung the State of Bolivar. In fact, however, it was re-established; the rebel party assumed the condition of civil war, and the imminence of a general conflict was not without reason, would eno reaction—"the outcome of so much delay and expense. "Our hopes are signed; the revolutionary element remains strong in full force, and blood has been spilled." The storm, indeed, was not past; a brief calm, it burst forth anew with greater violence than before. Advices from Panamá under the date of Jan. 5, 1885, announced "the most alarming condition of affairs throughout the republic, and the imminence of a general conflict." War had again broken out in Boyacá, Cundinamarca, and Cauca, and the presence of Cauca was apprehended. If the enemy had not been in the rebel territory, the overthrow of the existing government would have been imminent. Revolutions are a safe and lucrative profession. They are seen appearing, followed by their somber train of mutes, and, although the means of impeding their dismal development may be at best in institutions at present in force are opposed to the use of those means. The Government, therefore, has to live with shouldered awaiting the hour for battle—battle that makes our population, swallows up our w increases our public discredit, and forbids calls to our minds the words of Bolívar: 't oiled for independence have plow
The so-called Radical party has a fraction of the Conservatives, and thus both are aiming at the downfall of the in the States most devoted to the Nixon Administration. Should they succeed thus far it is their intention is to concentrate their remaining rebel forces fought in Boyacá without having fought. They in Cundinamarca to advance, owing to the views of the General, Morgan, who for this reason has been raised to the rank of general. The soldiers have asked for an armistice, and in Sabana and Zipaquira, we have order. The movement, if once begun, would acquire an impetus difficult to overcome. The Conservador of Bogotá, in his message to the President, declared that disturbance would soon be throughout the republic.

The State officers, the following were the following: Governor, James C. Grant, Democrat; Lieutenant-Governor, William H. Meyer; Secretary of State, William Edwards; Treasurer, Frederick H. Bush; Auditor, John C. Abbott; Attorney-General, David F. Urny; Superintendent of Instruction, Joseph C. Shattuck; Supreme Court: Chief Justice, William E. Beck; Solicitor, Joseph C. Helm and W. F. Stone.

The condition of the Treasury on 4, 1884, was as follows:

- Revenue: $434,119 90
- Indebtedness: $1,794 95
- Total: $435,914 85

The permanent school fund at the present time amounts to $114,920 04. 

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The total assessed valuation of property in 1884 was $115,675,014.51; in 1888, $110,759,756.31; number of military polls in 1884, 31,658; in 1888, 37,609. The railroad assessment in 1884 amounted to $19,928,420.06.

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Corporations.—The Insurance Department has yielded a net revenue to the public-school fund of $13,025.55 during the past two years. The number of companies authorized to do business in the State is 105. The Auditor reports that all spurious companies have been prohibited from doing business in the State, and that the insurance business is now on a safe basis.

During the past two years 1,035 articles of incorporation have been filed with the Secretary of State, and spread upon the records of the office.

The Legislature of 1888 authorized the construction of a Capitol building, and appointed a Board of Managers to carry out the provisions of said law. The law was framed and passed hurriedly, and seems to have been very imperfectly adapted to the purposes for which it was intended. The Board of Managers decided that it would be impossible to construct the building and do justice to the State without violating the provisions of the act under which they had been appointed. The commissioners have drafted a bill for submission to the Legislature of 1885, under the provisions of which the Capitol can be built without embarrassing the State in any way. It contemplates that the construction shall cover a period of five years, and that the final cost shall not exceed $1,000,000. The following resources for the construction of the Capitol can be made immediately available:

- Capitol building fund, cash $134,195 50
- Public building fund, cash $50,000 00
- 30,000 00
- Half-mill tax for five years (estimated) $35,000.00

Total: $213,585 83

The construction of the Capitol building, but it does not prohibit the appropriation of any surplus in the Treasury, to the credit of the general revenue fund, for this purpose. The demand for the general revenue fund can be lessened, and a surplus created by supporting the Penitentiary by a direct tax levied, instead of by appropriation from the general revenue fund, as is now done.

By an act passed by the last Legislature the election was called upon, at the election in November, 1888, to pass upon the question of voting $300,000 in bonds for the Capitol build-

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Corporations.—The Insurance Department has yielded a net revenue to the public-school fund of $13,025.55 during the past two years. The number of companies authorized to do business in the State is 105. The Auditor reports that all spurious companies have been prohibited from doing business in the State, and that the insurance business is now on a safe basis.

During the past two years 1,035 articles of incorporation have been filed with the Secretary of State, and spread upon the records of the office.

The Legislature of 1888 authorized the construction of a Capitol building, and appointed a Board of Managers to carry out the provisions of said law. The law was framed and passed hurriedly, and seems to have been very imperfectly adapted to the purposes for which it was intended. The Board of Managers decided that it would be impossible to construct the building and do justice to the State without violating the provisions of the act under which they had been appointed. The commissioners have drafted a bill for submission to the Legislature of 1885, under the provisions of which the Capitol can be built without embarrassing the State in any way. It contemplates that the construction shall cover a period of five years, and that the final cost shall not exceed $1,000,000. The following resources for the construction of the Capitol can be made immediately available:

- Capitol building fund, cash $134,195 50
- Public building fund, cash $50,000 00
- 30,000 00
- Half-mill tax for five years (estimated) $35,000.00

Total: $213,585 83

This leaves, says the Governor, "only $200,000 to be provided for. The Constitution prohibits the levying of any tax in excess of one half mill on the dollar per annum for a Capitol building. But it does not prohibit the appropriation of any surplus in the Treasury, to the credit of the general revenue fund, for this purpose. The demands upon the general revenue fund can be lessened, and a surplus created by supporting the Penitentiary by a direct tax levied, instead of by appropriation from the general revenue fund, as is now done."
ing. The vote resulted in the authorizing of
the bonds by a majority of 4,637.

Penitentiary.—On Nov. 30, 1884, there were
873 convicts in the Penitentiary. The total
expense for the past two years has been as fol-
lows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance of prisoners</td>
<td>$187,464</td>
</tr>
<tr>
<td>Stable account</td>
<td>6,217</td>
</tr>
<tr>
<td>Expense of brick-yard and quarries</td>
<td>31,187</td>
</tr>
<tr>
<td>West cell-building</td>
<td>20,000</td>
</tr>
<tr>
<td>Purchase of land</td>
<td>5,000</td>
</tr>
<tr>
<td>Gate</td>
<td>625</td>
</tr>
<tr>
<td>Improvement and repairs</td>
<td>9,915</td>
</tr>
<tr>
<td>Sundries</td>
<td>849</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$216,778</strong></td>
</tr>
</tbody>
</table>

The improvements for the past two years are
estimated at $32,000, consisting of cell-building,
female prison, bath-house, kitchen, laundry,
extension of walls, etc.

The earnings for the past two years have
been $30,406.58, while shows a decrease of
$2,581.31 from the two previous years. This
decline is due to the general depression of
business, causing a falling off in the demand
for lime, and to the passage of an act by the
last Legislature, restricting convict-labor to the
prison-grounds, and to the failure of those en-
gaged in the manufacture of boots and shoes
with convict-labor to carry out their contract.

Insane Asylum.—The new Insane Asylum has
been occupied by the male patients since Nov.
30, 1884. The main building is 100 feet long
by 100 feet in depth, with two dormitories 64
by 28 feet, and three stories in height. The
east wing is designed for the male patients, and
the west wing for the females; each wing is
divided into three wards; each ward will ac-
commodate 20 patients, so that the building
when completed will accommodate over 200
patients. In the east wing two wards have
been furnished, and are now occupied by 70
male patients. The third ward has been com-
pleted, but is not furnished. The west wing
has not been completed.

On Nov. 30, 1883, there were 49 patients
at the asylum; since then 250 have been ad-
mitted—making a total of 177 treated in the
two years ending Nov. 30, 1884. Of this num-
ber, 77 have been discharged, 53 having recov-
ered, 1 improved, 8 escaped, and 20 having
died, leaving 97 at the asylum at the present
time—being an increase of 48 since 1883.

The maintenance expenses for the two years
ending Nov. 30, 1884, amounted to $55,676.78.
The entire sum expended on the new building
so far is as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1881 and 1883</td>
<td>$50,000</td>
</tr>
<tr>
<td>1884</td>
<td>$28,149</td>
</tr>
<tr>
<td><strong>Outstanding indebtedness</strong></td>
<td><strong>$23,713</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$138,854</strong></td>
</tr>
</tbody>
</table>

The State Industrial School.—There were 75 boys
at the school in November, 1884. By Jan. 1,
1885, this number had increased to 140.
There have been 196 boys sent to the school
since it was established.

On a basis of 150 boys a day, the trustees
ask for the following appropriations for the two
years ending Jan. 1, 1887:

- 150 boys at 50 cents per day each ........ $22,500
- Officers’ salaries and expense of trustees .... 12,592
- Fuel and lights .................................... 2,250
- Repairs and improvements ....................... 10,000
- Water-works and library ......................... 1,180

**Total** ........................................ $57,532

**Existing deficiency** ............................ $5,590

**Grand total** ................................... $63,122

Irrigation.—The State Engineer represents
that the total appropriation of water in the
State amounts to 2,456 cubic feet a second.
One cubic foot of water a second will irrigate
about fifty acres of land, and is estimated to
be worth $750. On this basis the water rights
of the State have a value of over $30,000,000.
The present ditch capacity is sufficient to irri-
gate 2,000,000 acres of land. As the land un-
der ditch is not worth over $12 an acre, it will
be seen that water in Colorado is more valu-
able than the land.

The Governor recommends the perfecting of
the law relating to irrigation and water rights,
and the protection of the forests of the State.

State Lands.—Exclusive of public-school lands,
which embrace every sixteenth and thirty-sixth
section, except mineral lands, the following
lands have been given to the State by the Gen-
eral Government:

<table>
<thead>
<tr>
<th>Grant</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal improvement .................. 500,000</td>
<td></td>
</tr>
<tr>
<td>University ............................ 48,000</td>
<td></td>
</tr>
<tr>
<td>Penitentiary ............................ 80,000</td>
<td></td>
</tr>
<tr>
<td>Public building ......................... 22,000</td>
<td></td>
</tr>
<tr>
<td>Saline ................................ 30,000</td>
<td></td>
</tr>
<tr>
<td>Agricultural College .................. 80,000</td>
<td></td>
</tr>
</tbody>
</table>

**Total acres donated** .................... 752,100

The following amounts have been selected
and confirmed in the different funds:

<table>
<thead>
<tr>
<th>Grant</th>
<th>Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal improvement .................. 492,840</td>
<td></td>
</tr>
<tr>
<td>University ............................ 44,541</td>
<td></td>
</tr>
<tr>
<td>Penitentiary ............................ 33,287</td>
<td></td>
</tr>
<tr>
<td>Public building ......................... 22,146</td>
<td></td>
</tr>
<tr>
<td>Saline ................................ 16,086</td>
<td></td>
</tr>
</tbody>
</table>

**Total acres confirmed** .................. 670,410

The present Land Board have selected 53.
954 acres of the Agricultural College grant,
and have forwarded a description of the same
to the proper authorities at Washington for
confirmation.

The total number of leases now in force
is 967, embracing 577,357 acres, at an annual
rental of $29,178.84.

The total receipts from land-sales and leases
in 1881 and 1882 were $112,184.04; the total
receipts from land-sales and leases for the two
years ending Nov. 30, 1884, $289,580.89, an in-
crease of $127,424.85 in the past two years.
The following is the number of cattle during 1884:

<table>
<thead>
<tr>
<th>Breed</th>
<th>Number of cows</th>
<th>Number of heifers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simcol</td>
<td>19,935</td>
<td>969</td>
</tr>
<tr>
<td>Sear</td>
<td>5,500</td>
<td>106,700</td>
</tr>
<tr>
<td>Seu</td>
<td>788</td>
<td>17,520</td>
</tr>
<tr>
<td>Bow</td>
<td>63,610</td>
<td>83,094</td>
</tr>
<tr>
<td>Kay</td>
<td>6,636</td>
<td>6,186</td>
</tr>
</tbody>
</table>

A, 1,688 438,869

The following is the number of cattle shipped from Colorado during 1884, 54,174.

<table>
<thead>
<tr>
<th>Number of cows</th>
<th>Number of heifers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simcol</td>
<td>23,510</td>
</tr>
<tr>
<td>Sear</td>
<td>4,885</td>
</tr>
<tr>
<td>Seu</td>
<td>2,046</td>
</tr>
<tr>
<td>Bow</td>
<td>1,077</td>
</tr>
<tr>
<td>Kay</td>
<td>842</td>
</tr>
</tbody>
</table>

The number shipped from Colorado during 1884, 54,174.

The number of cattle shipped from the State to the eastern part of the country increased from 1873, when it was 69,977 tons, to the year ending 1884, when the total estimated output was 832,873 tons.

The coal product almost entirely ceased 10 weeks in some localities, and the coal produced was 209,657 e Bond coal is lignite.

The county only one mine was worked out.

The county only one mine was worked out.

The output was 209,657 tons, the great coal-mining counties of Colorado. The total product of all counties is 832,873 tons.

Gunnison County there are six regular miners in the last statistical year produced 940 tons. There are several varieties of anthracite.

Gunnison County, one of the mines is an excellent quality of anthracite.

San Juan County there are three mines, 370,000 tons for the last statistic.

San Juan County there are eleven mines, a majority of them were shut down or were not included under the mining law, the product of the county is small. It amounted, according to McNeill's reports, to 18,752 tons.

In Las Animas County there are two working mines, and last year they produced 450,366 tons of coal. The coal in that county is bituminous, and is noted for its coking quality. In addition to the two mines referred to above, there are small openings in Las Animas County working from four to fifteen men.

In Park County there is but one mine of importance, it being the Union Pacific mine at Como. The quality of the coal is semi-bituminous, and the product during the last statistical year was 65,997 tons.

In Weld County there are five mines, and their combined product was 51,874 tons.

With the exception of those in Gunnison County, all the mines mentioned above are in what is called eastern Colorado, that part of the State which lies east of the main range. But across the Divide—in western Colorado—there is a vast country the coal area of which is probably more extensive than that of the eastern part of the State, and which in the quality of its coal product rivals Pennsylvania.

That great country embraces Gunnison County.

Election—The election on the 4th of November resulted in favor of the Republicans. The vote for Governor was as follows:

Benjamin H. Eaton ... 20,000 | J. E. Washburn ... 20,000
A. Adams ... 80,718 | Scattering ... 17

The other State officers chosen were the following:

Lieutenant-Governor, Peter W. Breene; Secretary of State, Melvin Edwards; Treasurer, George E. Swallow; Auditor, H. A. Sprague; Attorney-General, Theodore H. Thomas; Superintendent of Schools, L. S. Cornell; Regents of the University, Roger W. Woodbury, Clinton M. Tyler, and Joseph C. Shattuck.

For Congress, the vote was as follows: George G. Symes, Republican, 55,446; Charles S. Thomas, Democrat, 28,720; George W. Way, Greenback-Labor, 2,485. The average vote for the presidential electors was: Republican, 55,577; Democratic, 27,927; Greenback-Labor, 1,967; Prohibition, 759. The Legislature is largely Republican. Three amendments to the Constitution were ratified by large majorities. The amended sections read as follows:

Sec. 6. Each member of the General Assembly, until otherwise provided by law, shall receive as compensation for his services, seven dollars ($7) for each day's attendance and fifteen (15) cents for each mile necessarily traveled in going to and returning from the seat of government, and shall receive no other compensation, perquisite, or allowance whatever. No session of the General Assembly shall exceed ninety days. No General Assembly shall fix its own compensation.

Sec. 15. No act of the General Assembly shall be effective until ninety days after its passage (except in case of emergency, which shall be expressed in the act), unless the General Assembly shall by a vote of twothirds of all the members elected to each house other-


### COMMERCE AND NAVIGATION, AMERICAN.

The total value of the foreign commerce of the United States in the year ending June 30, 1884, was $1,408,211,302, against $1,547,030,818 in 1883 and $1,475,181,981 in 1881–82.

<table>
<thead>
<tr>
<th>Year</th>
<th>Imports</th>
<th>Domestic</th>
<th>Foreign</th>
</tr>
</thead>
<tbody>
<tr>
<td>1875</td>
<td>$288,005,498</td>
<td>$429,964,500</td>
<td>$144,108,611</td>
</tr>
<tr>
<td>1876</td>
<td>480,741,190</td>
<td>683,028,547</td>
<td>14,904,484</td>
</tr>
<tr>
<td>1877</td>
<td>521,285,190</td>
<td>690,070,884</td>
<td>13,004,969</td>
</tr>
<tr>
<td>1878</td>
<td>487,921,281</td>
<td>650,705,385</td>
<td>13,104,649</td>
</tr>
<tr>
<td>1879</td>
<td>485,777,775</td>
<td>690,584,700</td>
<td>13,065,601</td>
</tr>
<tr>
<td>1880</td>
<td>657,934,164</td>
<td>828,956,828</td>
<td>12,793,805</td>
</tr>
<tr>
<td>1881</td>
<td>646,564,639</td>
<td>818,750,947</td>
<td>13,607,399</td>
</tr>
<tr>
<td>1882</td>
<td>734,632,717</td>
<td>923,678,771</td>
<td>12,278,395</td>
</tr>
<tr>
<td>1883</td>
<td>729,150,914</td>
<td>1,094,285,339</td>
<td>12,616,170</td>
</tr>
<tr>
<td>1884</td>
<td>667,967,588</td>
<td>874,969,558</td>
<td>10,980,197</td>
</tr>
</tbody>
</table>

The value of the gold and silver coin and bullion imported and exported, and the annual net exports or imports of species, were as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Excess of Exports</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1875</td>
<td>$94,182,148</td>
<td>$56,901,115</td>
<td>$97,331,389</td>
</tr>
<tr>
<td>1876</td>
<td>56,901,115</td>
<td>10,086,641</td>
<td>46,868,474</td>
</tr>
<tr>
<td>1877</td>
<td>84,181,597</td>
<td>40,714,414</td>
<td>13,967,583</td>
</tr>
<tr>
<td>1878</td>
<td>88,341,152</td>
<td>29,281,216</td>
<td>8,050,331</td>
</tr>
<tr>
<td>1879</td>
<td>54,947,441</td>
<td>20,996,080</td>
<td>13,949,476</td>
</tr>
<tr>
<td>1880</td>
<td>17,142,919</td>
<td>28,584,810</td>
<td>24,992,891</td>
</tr>
<tr>
<td>1881</td>
<td>15,606,517</td>
<td>10,705,457</td>
<td>9,169,500</td>
</tr>
<tr>
<td>1882</td>
<td>63,417,479</td>
<td>42,479,500</td>
<td>11,837,979</td>
</tr>
<tr>
<td>1883</td>
<td>81,000,000</td>
<td>93,468,900</td>
<td>3,468,900</td>
</tr>
<tr>
<td>1884</td>
<td>81,050,000</td>
<td>87,459,500</td>
<td>3,609,500</td>
</tr>
</tbody>
</table>

In common with other commercial nations, the United States suffered a partial depression in 1884, which affected the volume of foreign trade. The depression was mainly the result of the extension of production in many countries beyond consumptive requirements, and of agricultural depression in Europe. Since the Franco-German War, Germany and other Continental countries have largely extended their manufacturing facilities. Cheaper labor and new chemical and mechanical inventions enable them to compete successfully with English and French industries. New employ-ments and profits counterbalance the effects of crop failures, while in western Europe accumulated wealth retards the effects of poor harvests and industrial competition. In the United States the extension of the area of cultivation and of railroads was stimulated by the extraordinary European demand for the same impulse, but more than in cultural production in India. An other countries was stimulated, dant crops and high prices during European dearth incident to agricultural price as well as the extension of agr railroads. The return of good sea and the competition of India. Europe caused a great fall in the pr ice. The consequent collapse of railroads and the cessation of ship-building in year occurred in a general stagnation and coal industries. Under a d mix mand the over-supplied markets of the soft and the other raw products of the Un Petroleum sank in price from ex exhibition and from the competition in the mineral market of the Russian article. tective measures adopted in certain for suffering agricultural and the industries affected international ex factorably. The United States, be nation, contracts its demand for exports readily in response to a dimin- ishment of demand. The above causes and the export trade of 1884 show the diminution of the 1888 effect the of the peak in March 8, 1888. age ad-valorem rate of duty collect able merchandise was reduced from 40 per cent. in 1883 to 41-70 per cent. in exemption from duty of the charges transference of the free duty on paying articles effected a reduction, which amounted, in 1888 in 1888 many articles paying specific duties 5 to about 5 per cent. The most impor- munities affected by the tariff is as yielded, in 1884, 25-77 per cent. of toms revenue; wool, and manufacts which produced 16-08 per cent. of t tities; silk manufactures, which pro per cent.; iron and steel, and m thereof, which produced 7-90 per ton manufactures, which produce cent.; and flax, hemp, jute, and m thereof, which produced 4-96 per total amount of duty collected on i tered for consumption declined from 75 in the fiscal year 1883 to 3198 1884, a fall of 9-7 per cent. The ch average rate of duty on the total im moveable and free, was from 50-05 to cent. The new tariff increased t rate on sugar and melas from 52- per cent. ad-valorem; decreased t rate on iron and steel, and manufact
### COMMERCE AND NAVIGATION, AMERICAN.

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<table>
<thead>
<tr>
<th>ARTICLES</th>
<th>1883</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>Books, maps, engravings, and other printed matter</td>
<td>$3,209,570</td>
<td>$3,754,681</td>
</tr>
<tr>
<td>Brass, and manufactures of</td>
<td>$1,976,680</td>
<td>$2,032,684</td>
</tr>
<tr>
<td>Breadstuffs</td>
<td>$8,767,624</td>
<td>$8,220,644</td>
</tr>
<tr>
<td>Brasses</td>
<td>$1,981,971</td>
<td>$1,953,407</td>
</tr>
<tr>
<td>Brush</td>
<td>$441,520</td>
<td>$229,050</td>
</tr>
<tr>
<td>Brushes of all kinds</td>
<td>$4,061,939</td>
<td>$5,861,961</td>
</tr>
<tr>
<td>Buttons and button material</td>
<td>$183,187</td>
<td>$129,499</td>
</tr>
<tr>
<td>Carriages</td>
<td>$450,094</td>
<td>$550,094</td>
</tr>
<tr>
<td>Cement</td>
<td>$304,999</td>
<td>$430,999</td>
</tr>
<tr>
<td>Chemicals, drugs, dyes, and medicines</td>
<td>$15,091,905</td>
<td>$13,069,905</td>
</tr>
<tr>
<td>Chloride of ammonia</td>
<td>$44,444</td>
<td>$44,444</td>
</tr>
<tr>
<td>Clay or earth</td>
<td>$394,741</td>
<td>$560,211</td>
</tr>
<tr>
<td>Clocks and watches, and parts thereof</td>
<td>$2,960,606</td>
<td>$2,662,607</td>
</tr>
<tr>
<td>Coal, bituminous, and coke</td>
<td>$1,747,200</td>
<td>$2,846,500</td>
</tr>
<tr>
<td>Cocoa, manufactured</td>
<td>$68,877</td>
<td>$121,918</td>
</tr>
<tr>
<td>Copper, and manufactures of</td>
<td>$321,296</td>
<td>$526,929</td>
</tr>
<tr>
<td>Cotto, manufactures of</td>
<td>$5,286,119</td>
<td>$9,856,479</td>
</tr>
<tr>
<td>Earthen, stone, and china ware</td>
<td>$4,963,418</td>
<td>$4,816,018</td>
</tr>
<tr>
<td>Fancy articles</td>
<td>$7,968,102</td>
<td>$6,025,918</td>
</tr>
<tr>
<td>Fats</td>
<td>$1,474,905</td>
<td>$1,271,905</td>
</tr>
<tr>
<td>Flax, hemp, jute, and manufactures of</td>
<td>$18,859,921</td>
<td>$20,814,921</td>
</tr>
<tr>
<td>Fruits, including nuts</td>
<td>$18,440,470</td>
<td>$15,000,470</td>
</tr>
<tr>
<td>Pure, and manufactures of</td>
<td>$54,029,029</td>
<td>$6,864,787</td>
</tr>
<tr>
<td>Ginger-seed</td>
<td>$134,775</td>
<td>$191,775</td>
</tr>
<tr>
<td>Glass and glassware</td>
<td>$4,922,968</td>
<td>$7,738,194</td>
</tr>
<tr>
<td>Gold and silver, manufactures of</td>
<td>$56,981,789</td>
<td>$88,470</td>
</tr>
<tr>
<td>Grease</td>
<td>$98,393</td>
<td>$290,093</td>
</tr>
<tr>
<td>Gunpowder and all explosive substances</td>
<td>$68,094,868</td>
<td>$64,460,087</td>
</tr>
<tr>
<td>Hair, and manufactures of</td>
<td>$66,880,450</td>
<td>$68,080,450</td>
</tr>
<tr>
<td>Hats, bonnets, hoods, and materials for</td>
<td>$1,958,184</td>
<td>$4,004,184</td>
</tr>
<tr>
<td>Hay</td>
<td>$908,819</td>
<td>$908,819</td>
</tr>
<tr>
<td>Hemp</td>
<td>$1,958,184</td>
<td>$2,088,184</td>
</tr>
<tr>
<td>India-rubber and gutta-percha, manufactures of</td>
<td>$929,706</td>
<td>$1,199,909</td>
</tr>
<tr>
<td>Iron and steel, and manufactures of</td>
<td>$57,999,461</td>
<td>$14,817,474</td>
</tr>
<tr>
<td>Jewelry and precious stones</td>
<td>$5,994,180</td>
<td>$9,877,450</td>
</tr>
<tr>
<td>Lead, and manufactures of</td>
<td>$1,719,972</td>
<td>$922,172</td>
</tr>
<tr>
<td>Chemicals and manufactures of</td>
<td>$12,885,129</td>
<td>$11,662,129</td>
</tr>
<tr>
<td>Malt liquors</td>
<td>$1,145,788</td>
<td>$1,159,988</td>
</tr>
<tr>
<td>Spirits, distilled</td>
<td>$5,564,236</td>
<td>$1,062,036</td>
</tr>
<tr>
<td>Wines</td>
<td>$10,386,692</td>
<td>$4,900,068</td>
</tr>
<tr>
<td>Marble, slate, and marble, manufactures of</td>
<td>$970,200</td>
<td>$901,200</td>
</tr>
<tr>
<td>Matting and mats, vegetable</td>
<td>$792,674</td>
<td>$792,674</td>
</tr>
<tr>
<td>Metal, and manufactures of, not elsewhere specified</td>
<td>$1,730,899</td>
<td>$2,545,899</td>
</tr>
<tr>
<td>Mineral substances, not elsewhere specified</td>
<td>$1,143,903</td>
<td>$75,916</td>
</tr>
<tr>
<td>Musical instruments</td>
<td>$2,870,199</td>
<td>$1,990,199</td>
</tr>
<tr>
<td>Oils</td>
<td>$971,999</td>
<td>$1,900,999</td>
</tr>
<tr>
<td>Paints and colors, and manufactures of</td>
<td>$1,969,906</td>
<td>$1,562,906</td>
</tr>
<tr>
<td>Paper, and manufactures of</td>
<td>$2,989,290</td>
<td>$1,141,290</td>
</tr>
<tr>
<td>Provisions, meat, and dairy products</td>
<td>$1,958,844</td>
<td>$1,590,844</td>
</tr>
<tr>
<td>Rice</td>
<td>$1,988,407</td>
<td>$5,707,410</td>
</tr>
<tr>
<td>Salt</td>
<td>$1,979,620</td>
<td>$1,979,620</td>
</tr>
<tr>
<td>Seeds, not elsewhere specified</td>
<td>$2,194,999</td>
<td>$7,885,999</td>
</tr>
<tr>
<td>Silk, manufactures of</td>
<td>$30,801,112</td>
<td>$90,801,112</td>
</tr>
<tr>
<td>Soap</td>
<td>$450,249</td>
<td>$450,249</td>
</tr>
<tr>
<td>Sugar, molasses, sugar-candy, and confectionery</td>
<td>$4,499,172</td>
<td>$9,949,172</td>
</tr>
<tr>
<td>Tin, manufactures of</td>
<td>$105,928</td>
<td>$5,172,928</td>
</tr>
<tr>
<td>Tobacco, and manufactures of</td>
<td>$10,528,928</td>
<td>$10,257,928</td>
</tr>
<tr>
<td>Umbrellas, parasols, shades</td>
<td>$98,109</td>
<td>$111,109</td>
</tr>
<tr>
<td>Varnishes</td>
<td>$260,911</td>
<td>$260,911</td>
</tr>
<tr>
<td>Vegetables</td>
<td>$5,169,168</td>
<td>$2,449,168</td>
</tr>
<tr>
<td>Wood, manufactures of</td>
<td>$59,941</td>
<td>$19,941</td>
</tr>
<tr>
<td>Wool, and manufactures of</td>
<td>$6,961,988</td>
<td>$8,961,988</td>
</tr>
<tr>
<td>Woolen manufactures</td>
<td>$42,985,450</td>
<td>$41,406,511</td>
</tr>
<tr>
<td>Zinc, spelter, and manufactures of</td>
<td>$362,982</td>
<td>$314,482</td>
</tr>
<tr>
<td>All other dutiable articles</td>
<td>$8,728,159</td>
<td>$3,801,159</td>
</tr>
<tr>
<td>Total dutiable</td>
<td>$408,516,886</td>
<td>$305,916,886</td>
</tr>
<tr>
<td>Total free and dutiable</td>
<td>$305,898,187</td>
<td>$581,898,187</td>
</tr>
</tbody>
</table>

The quantities of some of the principal articles of imported merchandise entered for consumption in 1884, compared with the two preceding years, were as shown in the table on the next page:

<table>
<thead>
<tr>
<th>ARTICLES</th>
<th>1883</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>$4,080,992</td>
<td>$3,168,493</td>
</tr>
<tr>
<td>B</td>
<td>$5,986,678</td>
<td>$5,986,678</td>
</tr>
</tbody>
</table>

Inserted free to the net list by Act of March 8, 1883.
### COMMERCE AND NAVIGATION, AMERICAN.

#### ARTICLES

<table>
<thead>
<tr>
<th>Year</th>
<th>1884</th>
<th>1883</th>
<th>1888</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar, dutiable</td>
<td>2,457,579,183</td>
<td>1,977,682,706</td>
<td>1,914,230</td>
</tr>
<tr>
<td>Sugar, from Hawaiian Islands</td>
<td>1,125,145,630</td>
<td>1,141,195,470</td>
<td>1,046,413</td>
</tr>
<tr>
<td>Coffee</td>
<td>6,282,100</td>
<td>5,325,277</td>
<td>620,480</td>
</tr>
<tr>
<td>Tea</td>
<td>6,374,594</td>
<td>7,071,195</td>
<td>79,3</td>
</tr>
<tr>
<td>Tobacco, leaf</td>
<td>1,147,701</td>
<td>1,061,140</td>
<td>8,9</td>
</tr>
<tr>
<td>Cigars and cigarettes</td>
<td>998,471</td>
<td>797,973</td>
<td>71</td>
</tr>
<tr>
<td>India-rubber, crude</td>
<td>28,4,979</td>
<td>21,819,200</td>
<td>29,290</td>
</tr>
<tr>
<td>Clothing-wool</td>
<td>30,529,845</td>
<td>30,646,399</td>
<td>18,48</td>
</tr>
<tr>
<td>Carpet-wool</td>
<td>4,474,965</td>
<td>1,278,118</td>
<td>98,31</td>
</tr>
<tr>
<td>Wollen clothes</td>
<td>62,5,299</td>
<td>61,640,839</td>
<td>47,29</td>
</tr>
<tr>
<td>Raw silk</td>
<td>10,929,561</td>
<td>9,290,985</td>
<td>8,95</td>
</tr>
<tr>
<td>Alcali</td>
<td>8,828,235</td>
<td>8,292,924</td>
<td>2,87</td>
</tr>
<tr>
<td>Pig-iron</td>
<td>291,005</td>
<td>482,823</td>
<td>52</td>
</tr>
<tr>
<td>Taggers' iron</td>
<td>297,421,241</td>
<td>51,717,095</td>
<td>51,717</td>
</tr>
<tr>
<td>Cattle, for breeding</td>
<td>5,028</td>
<td>21,630</td>
<td>21,630</td>
</tr>
<tr>
<td>Horses, for breeding</td>
<td>16,376</td>
<td>5,046</td>
<td>5,046</td>
</tr>
<tr>
<td>Hogs</td>
<td>29,081,999</td>
<td>29,219,298</td>
<td>19,75</td>
</tr>
<tr>
<td>Soda ash</td>
<td>257,4,069</td>
<td>286,716,726</td>
<td>267,32</td>
</tr>
<tr>
<td>Lumber, sawed</td>
<td>4,484,944</td>
<td>4,484,410</td>
<td>46</td>
</tr>
<tr>
<td>Champagne</td>
<td>161,267</td>
<td>289,607</td>
<td>28</td>
</tr>
<tr>
<td>Brandy</td>
<td>500,191</td>
<td>506,191</td>
<td>50</td>
</tr>
<tr>
<td>Wines, liqueurs</td>
<td>2,121,638</td>
<td>2,430,251</td>
<td>4,43</td>
</tr>
<tr>
<td>Beer</td>
<td>5,661,715</td>
<td>5,644,099</td>
<td>15,75</td>
</tr>
<tr>
<td>Rainwater</td>
<td>30,078,067</td>
<td>30,457,930</td>
<td>30,457</td>
</tr>
<tr>
<td>Prunes</td>
<td>61,024,061</td>
<td>51,110,740</td>
<td>50,17</td>
</tr>
</tbody>
</table>

The value of dutiable merchandise remaining in warehouse June 30, 1884, was $41,867,464; of merchandise free of duty, $398,398; total, $41,865,862, against $48,520,920 on June 30, 1883.

The effect of the change in the tariff on the wool-manufacturing and sheep-growing interests was made the subject of special inquiries by the Treasury Department. Of clothing-wools there were imported in 1884, 20,708,843 pounds, valued at $4,709,265, against 11,644,433 pounds, of the value of $3,576,443, in 1883. The duties collected were $2,111,579 in 1884, against $1,444,948 in 1883. The average import value per pound was 22.23 cents in 1883 and 29.74 cents in 1884. Of combing-wools, 4,474,395 pounds were imported, against 1,873,115 pounds in 1883; in value, $1,058,769, against $345,937. The average import value per pound was 23.06 cents, against 25.08 cents. The duties collected were $491,521, against $176,181 during the year preceding. The quantity of carpet-wool imported increased from 40,180,822 pounds, of the value of $5,090,557, to 63,253,653 pounds, valued at $7,839,955. The average import value per pound was 12.98 cents in 1883 and 12.93 cents in 1884. The duties collected were $1,960,025 in 1884, against $1,535,498 in 1883.

**Experts.**—A summary of the values of exports of domestic merchandise during the year ending June 30, 1884, is given in the following table:

#### ARTICLES

<table>
<thead>
<tr>
<th>Articles</th>
<th>Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural implements</td>
<td>$8,448,762</td>
</tr>
<tr>
<td>Bees</td>
<td>17,952,475</td>
</tr>
<tr>
<td>Hogs</td>
<td>2,977,469</td>
</tr>
<tr>
<td>Horses</td>
<td>490,921</td>
</tr>
<tr>
<td>Meat</td>
<td>490,921</td>
</tr>
<tr>
<td>Sheep</td>
<td>500,146</td>
</tr>
<tr>
<td>All other, and wool</td>
<td>40,305</td>
</tr>
<tr>
<td>Back, for tanning</td>
<td>252,831</td>
</tr>
<tr>
<td>Sacks, maps, and other printed matter</td>
<td>1,414,001</td>
</tr>
<tr>
<td>Brass, and manufactures of</td>
<td>301,016</td>
</tr>
<tr>
<td>Breadstuffs: Barley</td>
<td>406,923</td>
</tr>
<tr>
<td>Bread and biscuits</td>
<td>847,871</td>
</tr>
<tr>
<td>Indian corn</td>
<td>97,845,046</td>
</tr>
<tr>
<td>Indian cotton</td>
<td>318,789</td>
</tr>
<tr>
<td>Oats</td>
<td>700,694</td>
</tr>
<tr>
<td>Item</td>
<td>Value</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Total</td>
<td>$7,057,975</td>
</tr>
</tbody>
</table>

**Commerce and Navigation, American.**

The quantity of fertilizers shipped abroad was 161,532 tons. The fish exports included 14,299,123 pounds of cured codfish, 7,174,883 pounds of other cured fish, and 1,641,061 pounds of fresh fish. The export of cordage amounted to 6,707,776 pounds. The shipments of dried apples were 5,558,746 pounds; of fresh apples, 105,400 barrels; and of hops, 15,816,649 pounds. The shipments of sole-leather amounted to 22,431,295 pounds; of boots and shoes to 502,122 pairs. The number of organs exported was 8,868; of pianos, 1,021. The export of resin was 1,846,211 barrels; of lard-oil, 713,696 gallons; of spermaceti, 843,069 gallons; of cotton-seed oil, 8,605,946 gallons. The petroleum exports comprised 416,515,695 gallons of illuminating, 67,336,397 of crude oil, 10,515,585 pounds of lubricating and paraffine oils, 15,045,411 of naphtha, and 129,132 barrels of tar and residuum, with 17,080,817 pounds of paraffine and paraffine-wax. The beef products comprised 120,784,064 pounds of fresh meat, 42,579,911 of salted, 641,068 of other cured meat, and 63,091,103 pounds of tallow, besides canned meat and the oleomargarine products, of which latter there were shipped 1,637,693 pounds of imitation butter and 87,785,189 pounds of Tre-oil. The pork products comprised 341,579,410 pounds of bacon, 47,919,888 of hams, 265,094,719 of lard, 360,836,819 of salted and cured pork, and 185,417 of fresh meat. The shipments of cheese were 122,899,879 pounds; of butter, 20,027,748 pounds. The export of quicksilver was 1,242,080 pounds. The quantity of clover-seed exported was 27,404,737 pounds; of Timothy, 6,686,894 pounds. The number of gallons of alcohol exported was 3,897,062; of Bourbon whisky, 2,365,891; of rum, 676,347. Of spirits of tarragon there were 11,803,729 gallons exported; of starch, 6,787,009 pounds. The quantity of refined sugar was 75,280,784 pounds; of molasses and sirup, 5,906,005 gallons. The export of leaf-tobacco amounted to 192,130,820 pounds. Among the wood exports were 414,920,000 feet of boards and planks, 201,527 of sawn timber, and 10,615,065 cubic feet of hewed timber.

The cotton export fell off from 2,388,075,062 pounds, valued at $247,382,721, in 1883, to 1,962,572,353 pounds, valued at $197,015,204, in 1884; and the wheat export from 106,885,528 bushels, valued at $119,879,541, to 70,349,013 bushels, valued at $75,026,678. The Indian-corn export increased from 40,586,825 bushels to 45,247,510, but the value declined from $97,756,092 to $27,845,159.

**Movement of Specie.**—The total values of the imports of coin and bullion during the year ending June 30, 1884, were as follows:

<table>
<thead>
<tr>
<th>Type</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>$5,154,885</td>
</tr>
<tr>
<td>Silver</td>
<td>1,570,000</td>
</tr>
<tr>
<td>Copper</td>
<td>8,964,959</td>
</tr>
<tr>
<td>Foreign</td>
<td>14,006,754</td>
</tr>
</tbody>
</table>

**Total Gold.** $52,981,317
## COMMERCE AND NAVIGATION, AMERICAN.

### IMPORTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver: Bars</td>
<td>$206,837</td>
</tr>
<tr>
<td>Other bullion</td>
<td>1,971,908</td>
</tr>
<tr>
<td>Coin: American</td>
<td>656,169</td>
</tr>
<tr>
<td>Foreign</td>
<td>10,985,019</td>
</tr>
<tr>
<td><strong>Total silver</strong></td>
<td><strong>$14,594,845</strong></td>
</tr>
<tr>
<td>Total imports of coin and bullion</td>
<td>$37,489,569</td>
</tr>
</tbody>
</table>

The following were the kinds and amounts of domestic coin and bullion exported during the year:

#### DOMESTIC EXPORTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold: Bars, United States Mint or Assay-Office</td>
<td>$13,990,536</td>
</tr>
<tr>
<td>Other bullion</td>
<td>90,017</td>
</tr>
<tr>
<td>Coin</td>
<td>1,061,051</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$15,249,594</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver: Bars, United States Mint or Assay-Office</td>
<td>$7,352,471</td>
</tr>
<tr>
<td>Other bullion</td>
<td>1,610,779</td>
</tr>
<tr>
<td>Coin: Trade-dollars</td>
<td>225,509</td>
</tr>
<tr>
<td>Other</td>
<td>444,391</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$10,630,352</strong></td>
</tr>
</tbody>
</table>

### EXPORTS

The exports of foreign coin and bullion were as follows:

#### FOREIGN EXPORTS

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold: Bullion</td>
<td>$2,400</td>
</tr>
<tr>
<td>Coin</td>
<td>75,520</td>
</tr>
<tr>
<td><strong>Total gold</strong></td>
<td><strong>$75,727,758</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silver: Bullion</td>
<td>$104,240</td>
</tr>
<tr>
<td>Coin</td>
<td>8,621,785</td>
</tr>
<tr>
<td><strong>Total silver</strong></td>
<td><strong>$11,189,995</strong></td>
</tr>
</tbody>
</table>

In 1882-'83 the imports of gold amounted to $17,784,149; of silver, to $10,755,342; total, $28,539,491. Domestic exports of gold, $3,920,803; of silver, $12,702,279; total, $16,623,081. Foreign exports of gold, $2,676,979; of silver, $7,517,173; total, $10,197,140.

### PERCENTAGE OF FOREIGN COUNTRIES IN THE COMMERCE OF 1884

The participation in the American export and import commerce during 1884, of each foreign country of which the share in the aggregate commerce was more than one fourth of one per cent., was as follows:

<table>
<thead>
<tr>
<th>Countries</th>
<th>Per cent. of total imports</th>
<th>Per cent. of total exports</th>
<th>Per cent. of total foreign imports</th>
<th>Per cent. of total foreign exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain and Ireland</td>
<td>8.94</td>
<td>21.97</td>
<td>21.65</td>
<td>20.77</td>
</tr>
<tr>
<td>Germany</td>
<td>7.73</td>
<td>9.89</td>
<td>8.19</td>
<td>9.86</td>
</tr>
<tr>
<td>France</td>
<td>10.61</td>
<td>9.92</td>
<td>10.85</td>
<td>10.04</td>
</tr>
<tr>
<td>Dominion of Canada</td>
<td>5.91</td>
<td>6.47</td>
<td>4.85</td>
<td>4.91</td>
</tr>
<tr>
<td>Cuba</td>
<td>35.67</td>
<td>2.74</td>
<td>8.97</td>
<td>9.08</td>
</tr>
<tr>
<td>Brazil</td>
<td>1.59</td>
<td>1.19</td>
<td>1.07</td>
<td>1.19</td>
</tr>
<tr>
<td>Belgium</td>
<td>1.84</td>
<td>1.08</td>
<td>1.43</td>
<td>1.09</td>
</tr>
<tr>
<td>Italy</td>
<td>2.50</td>
<td>1.05</td>
<td>2.62</td>
<td>1.05</td>
</tr>
<tr>
<td>British India</td>
<td>2.86</td>
<td>0.92</td>
<td>2.89</td>
<td>0.92</td>
</tr>
<tr>
<td>Mexico</td>
<td>1.58</td>
<td>1.54</td>
<td>1.54</td>
<td>1.54</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.15</td>
<td>2.16</td>
<td>0.14</td>
<td>2.11</td>
</tr>
<tr>
<td>China</td>
<td>2.84</td>
<td>1.62</td>
<td>1.87</td>
<td>1.65</td>
</tr>
<tr>
<td>British West Indies</td>
<td>1.84</td>
<td>1.08</td>
<td>1.44</td>
<td>1.09</td>
</tr>
<tr>
<td>Spain</td>
<td>1.88</td>
<td>1.05</td>
<td>1.99</td>
<td>1.17</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2.47</td>
<td>0.55</td>
<td>8.95</td>
<td>2.58</td>
</tr>
<tr>
<td>Japan</td>
<td>1.99</td>
<td>1.19</td>
<td>0.56</td>
<td>1.19</td>
</tr>
<tr>
<td>British possessions in Australia</td>
<td>9.65</td>
<td>1.27</td>
<td>1.94</td>
<td>1.27</td>
</tr>
<tr>
<td>Spanish possessions, all other</td>
<td>1.58</td>
<td>0.90</td>
<td>0.90</td>
<td>0.90</td>
</tr>
<tr>
<td>Hawaiian Islands</td>
<td>1.19</td>
<td>0.41</td>
<td>0.91</td>
<td>0.42</td>
</tr>
<tr>
<td>United States of Colombia</td>
<td>1.97</td>
<td>1.25</td>
<td>1.88</td>
<td>1.25</td>
</tr>
</tbody>
</table>

### NAVIGATION

The total number of vessels on the foreign trade of the United States sent during the twelve months ending with Jt 1884, was 91,823, aggregating 15,068,629 tons against 92,967, of 16,381,727 tons, in 1883.

The number of American vessels was 9,817, 8,202,293 tons, against 9,499, of 8,855,548 tons in 1883; the number of foreign vessels, 82, tonnage, 11,866,553, against 23,465, of 18,184 tons, in 1883.

The total number of clearances was 91, tonnage 15,203,108, against 88,128 vessels.
14,540,975 tons in 1883. The number of American vessels was 9,575, tonnage, 3,236,641, against 4,496, of 6,307,263 tons in 1882; the number of foreign vessels, 22,406, of 11,968,467 tons, against 23,629, of 13,233,773 tons, in 1883.

The percentage of the total commerce carried in American vessels in 1884 was 16.42 per cent, against 16.28 in 1883, 15.0 in 1882, 16 in 1881, 17.4 in 1880, 22.6 in 1879, 25.8 in 1878, 26.5 in 1877, 33.1 in 1876, 25.8 in 1875, 55.6 in 1870, 27.7 in 1865, 66.5 in 1860, and 75.3 in 1855.

**Congo, International Association of.**

The International African Association was established under the patronage of the King of the Belgians, with the aim of bringing about union and co-operation among the persons and societies in various countries interested in African discovery, and thus organizing exploration on a systematic plan for the purposes of extending science, promoting the commercial development of Africa, and counteracting and checking the slave-trade. The German African Society and the French section of the International Association were organized as branches, and occupied themselves with the exploration of west equatorial Africa, the former sending out Schmit and Buchner, and later Peare and Wissmann, to the Angola coast, and the latter sending De Brazza and Dr. Bialay to explore the Opwoé. The Belgian society devoted itself at first to opening paths for explorers and traders from the Zanzibar coast into the interior. Afterward it placed its resources at the disposal of Henry M. Stanley, for the purpose of establishing his influence over the tribes on the Congo, improving communications between the Atlantic coast and the Upper Congo, and preparing the way for traders and missionaries. To prevent the annexation of its field of labor by European powers, the Association asked for recognition as a quasi-political organization, the trustee of sovereign rights, which were to belong to a free state or free states of the Congo, to be organized under its auspices.

**Geography of Central Africa.**—The interior of Africa is an elevated plateau, ranging in altitude from 2,000 to 4,000 feet, with mountain-masses rising to 10,000 or 12,000 feet, and even 19,000 feet, which is the height of the Killmandjaro peak, east of Victoria Nyanza. In the most elevated region, on the eastern side of the continent, among the great lakes, the three principal rivers of Africa take their rise. The Zambezi, flowing into the Indian Ocean, drains the country south of the Congo basin, and receives through the Shire the surplus waters of Lake Nyassa. The Nile takes the outflow of the Victoria and Albert lakes. The Victoria Nyanza, the largest of the inland seas, exceeding Lake Superior in size, is above the level of the others. In the flood season it overflows into the lakes on the south. During that period all the lakes and the head-waters of the great rivers are connected by navigable channels. The navigable water-courses of that part of Africa are innumerable. The Congo Valley is also intersected by long rivers, many of them navigable to their sources, and is sprinkled with a multitude of lakes. The course of the river is about 8,000 miles long. The soil of central Africa is exceeding fertile, and the climate pleasant and healthful. The interior
is thickly populated by tribes that are generally peaceful and good agriculturists, with a taste for trading. The population of the Congo basin is estimated at 40,000,000, that of the lake-region at about the same.

The Congo issues into the Atlantic Ocean in one stream, seven miles broad, and of enormous depth. The estuary leads up 110 miles to Vivi, where the series of cascades and rapids known as Livingstone Falls begins. It is navigable to vessels drawing fifteen feet of water. From the first waterfall to the station of Isangila, 52 miles, navigation is impossible. From that point to South Manyaga, 88 miles, there is a passage practicable to light-draught steamers. The next 95 miles, up to Leopoldville, at the entrance to Stanley Pool, must be made by land-carriage. From Leopoldville to Stanley Falls, 1,060 miles, there is no interruption of navigation. River-steamers can be hauled up the rapids at this point, after which they have a free passage for 800 miles to within seven miles of Nyangwe, the chief emporium of the Arab trade in central Africa. Beyond Nyangwe the main stream is navigable for over 800 miles, and the Lualaba, or the Ramolondo, for 300 more. Of the affluents on the left bank, the Kwango, or Kwa, 100 miles above Leopoldville, is navigable for 450 miles, including Lake Leopold II, and its outlet, which joins the Kwango not far from its mouth. The Iteba, 150 miles above Kwamouth, issues from Lake Mantumba, in the midst of a productive region thickly peopled by an industrious and enterprising nation: it affords 100 miles of navigation. The Monindu, or Black River, enters the Congo 60 miles farther up, near the equator, and gives probably 400 miles of navigation. The Lualaba, which debouches 80 miles farther up, is thickly settled on both banks, and can be navigated, probably, for 600 miles. Within 40 miles of Stanley Falls is the mouth of the Labiranz, formed by the confluence of two rivers, each 200 miles of navigation. The most important tributaries from the north are the Bumba, the Ubangi, the Himbiri, the Aruwimi, or Biyere (which Stanley still believes is identical with Schweinfurth's Wello), the Mbura, the Lwowa, and several powerful streams of less navigable value. The Aruwimi is impeded by rapids 95 miles from its mouth. The Congo and its tributaries have 8,000 miles of unimpeccable navigation, and beyond the portages 2,000 more.

Products.—The chief commercial product of the Upper Congo at present is ivory, and Mr. Stanley believes that it will take many generations to exhaust the supply. The banks of the Middle and Upper Congo are lined with groves of the oil-palm. The orchilis-wood is found everywhere. The wild coffee plant, which is equally abundant, yields excellent berries. In some districts India-rubber can be obtained in unlimited quantities. Ground camwood and nutmegs are common products. Gum-copal can also be supplied in large quantities. In the lake-region there are rich iron and copper mines, and gold and silver deposits. Bananas, oranges, and other fruits, have been cultivated by settlers on the Lower Congo. Some of the timber of the Congo region is valuable enough to repay the costliest transport. Ti are also precious spices and gums. The Uj region, particularly the elevated country between the Congo and the lakes, is described as a promising field for colonization. The climate there is salubrious and temperate. The rich river-valleys and old lake-beds yield wonderful crops of rice and grain. Ti are pastoral plains, which are covered with herds of flourishing native communities.

Trade.—The trade of the Lower Congo of the adjoining coast districts, for a sixty-four miles of the coast annually. This trade is monopolized by Dutch and English firms, which were anxious to the Belgian Association because they threatened to destroy their exclusive privilege by enabling small traders to settle in the rior. There are many small traders of European nationality. Before 1876 there were factories farther inland than Boma, but then, trading-posts have been established at many points along the Lower Congo. Traders descend the Congo, from as far as the equator, and the Monindu and Kwango enter, with canoes laden with iron, ivory, and camwood-powder. At Stanley they meet caravans of natives, who exchange European goods for these products of the Congo. The fleets of trading-canoes wait several months for the caravans, when the red calico, small hardware, trinkets, beads, etc., have been bartered for African produce, march to the European factories at Loango, Kilwa, Landana, Kabinda-Zombo, Kinshasa, Ambrizette, and other places on the coast. On the Lower Congo and it is coast-region, palm-oil is in demand, for which the natives barter palm oil. An entry duty, generally about 60 or 60 per cent. ad valorem, on European produce paid to the chiefs possessing the territory of the coast and around Stanley Pool.

From the east coast the Arabs of Zanzibar have penetrated as far as Nyangwe, where also at Ujiji, there is a large trading community. Some have settled on rich lands in the Congo Valley, on which they pursue agriculture with the labor of large gangs of slave. The Arab traders still combine the slave-trade with the ivory-trade.

The International Association.—The African association was founded by the King of the Belgians in 1876, and supported mainly from the private purse. Its object was the purely philanthropic one of opening trade routes into the interior for legitimate commerce, in order to do away with the slave-trade, and civilize and develop central Africa. On the east coast gunners and explorers were employed in es
lishing a caravan route and a row of stations between Zanzibar and Lake Tanganyika. The stations were at Karuma, on the east shore of Tanganyika, and at Mpala's, on the opposite shore, became permanent and important trading-posts, the former bidding fair to outstrip Ujiji. The route between this place and the coast and the native paths to Ujiji followed by Burton and Speke, were improved, and the dangers and vexations removed. The time of transit was reduced in two years from six months to forty-five days. A secure and regular system of portage was organized.

When Stanley returned from his explorations of the Congo between 1874 and 1877, King Leopold proposed to appoint him agent of the Association, to extend its work into West Africa. Means were furnished him to revisit the natives in the neighborhood of Stanley Pool, in accordance with a promise he had given. His reception was so encouraging that the Association supplied him liberally with money for the purpose of extending the line of stations across the continent along the course of the Congo. To establish a line of communications with the coast was the first need. Mr. Stanley accordingly undertook the costly and difficult engineering task of building a mountain road along the thirty-two cataracts called the Livingstone Falls. The Portuguese were stimulated to activity in Africa by Stanley's discovery, and impelled by the proceedings of the Association to reassert their dormant territorial rights over the mouth of the Congo. The French aimed at territorial aggrandizement in the direction of the Congo, with the object of controlling the commercial outlet of the Congo region if possible. Mr. Stanley conceived the idea of acquiring for his association its sovereign rights on the river-banks, in order to prevent any power from placing barriers between its field of operations and the sea. Agents of the Association secured from the chiefs on both sides of the river between Nkoli and Stanley Pool the right of government, the right to allow or refuse passage through the country, the right to trade, to live, to mine, etc. When Stanley had completed his road, upon reaching Stanley Pool on July 1881, he found that he had been beaten by the French explorer De Fesch, who had crossed from the Ugowe, by a route that he declared to be superior to Stanley's expensive artificial road, and obtained in the name of France a treaty from Makoko asserting to the French Republic the sovereignty over the right bank of the Congo. Mr. Stanley was obliged to change his plans and seek sites as the other bank for his stations. The principal one was placed at the lower entrance of Stanley Pool, and called Leopoldville. In December 1881, he launched his steel stern-paddle steamer, composed of separable air-tight parts, from Europe in 1888. When he came back from his sick-leave he ascended the Congo and founded the stations of Bolobo and Isenjo, 110 and 280 miles above Leopoldville.

The same year, having come to the conclusion that the best route from the coast was by Niadi-Kwilu river, Stanley had the river explored and seven stations founded on its banks. There are others along the coast between the Kwilu and Setze rivers, at Mayumba, Nzanga, and Sette Camara.

On Aug. 8, 1888, Mr. Stanley set out from Leopoldville on a new expedition, for the purpose of founding new stations, and more thoroughly exploring the affluents of the Congo as far as Stanley Falls. He had four small steamers of six to eight tons burden. The station

IBRAHIM, KING OF BOLOBO.
galla, 120 miles farther up, at the mouth of the Lulemugu, at the solicitation of the Bangalla tribe, which attacked Stanley in 1877. A station was established at Stanley Falls and a garrison placed there in charge of one of the steamboat engineers, named Binnie. At the mouth of the Aruwimi, or Werre, as the natives now called it, and farther up the Biverre, where on his former voyage the explorer sustained a desperate battle, the natives now gathered in host, but did not venture to attack the steamboats, and soon made pacific demonstrations. Steaming up the rapid and tortuous stream, they were stopped by rapid 95 miles above the mouth. The architecture of the numerous villages and the customs of the people differ greatly from anything observed on the Congo. The expedition returned to Leopoldville Jan. 30, 1884.

In June, 1884, Mr. Stanley returned to Europe, turning over the command to Col. Sir Francis de Winton. There were at that time 153 white men at the various stations of the Association, and about 1,800 natives in its service.

In October, 1884, Lient. Becker left Zanzibar on a two years' mission, the purpose of which is to establish a connecting line of stations from Lake Tanganyika, through Manyemaland, to Nyangwe, 340 miles from the lake, and thence down the Congo, 337 miles, to Stanley Falls.

Portuguese Claims to the Congo.—The Portuguese lay claim to the mouth of the Congo and the littoral between 5° and 5° 12' south latitude by virtue of the discovery of the estuary by Diego Cam about 1484. Many years ago the Portuguese Government was on the point of establishing its jurisdiction on this coast, when it was restrained by the Government at London. In 1853 Lord Clarendon declared the Portuguese rights to have lapsed, a position which was reaffirmed by Lord John Russell in 1860 and Lord Derby in 1878. The trade that grows up at the mouth of the Congo was carried on under treaties made by the British authorities with the native chiefs. The principal objection to the Portuguese claims was, ostensibly, that the Portuguese Government allowed slavery and slave-trading. Slavery was abolished in Angola and the other possessions of Portugal in 1878. When the International Association appeared on the Congo, the Liéon Government pressed again for a recognition of its historical rights. The British Government, thinking thereby to settle the question of the Congo in a manner satisfactory to itself, signed a treaty restricting the customs tariff to 6 per cent. ad valorem, and providing for the neutralization of Congo river, and the appointment of an Anglo-Portuguese river commission to administer it, according to the principles of the Treaty of Vienna of 1815, and for measures to suppress the slave-trade. The treaty, signed Feb. 25, 1884, was assailed in England, on the ground that it would place it in the power of Portugal to control the entrance to the Congo region, as the Portuguese would find ways of evading the restrictions. Throughout the Continent of Europe, the proposed river station was regarded as an indirect means of securing exclusive privileges on the Congo, English commerce. As the treaty would no value unless other powers recognized the Congolese sovereignty, Earl Granville entered correspondence with the German Cabinet to find that it was seriously opposed to the treaty. A proposition to make the river mission international failed to remove the objections. In the summer, ex-Minister Pimentel visited Berlin and other capitals to lay the Portuguese case before the cabinet. In consequence of the objections of Germany, France, and the Netherlands, the English Government withdrew the treaty.

Recognition of the Congo Association by the States.—While the Portuguese treaty was being ratified, a feeling of sympathy with America for the International Association sprung from the interests of the United States in the freedom of commerce promised by the Association, and from the fact that its successes were achieved by the energy of American citizen. In the President's message of Dec. 4, 1883, the prospect of coop- eration with other commercial powers to secure the neutralization of the Congo was mentioned. In February, 1884, a resolution was introduced into the Senate, to recognize the Interna- tional Association. Although not approved by the Committee on Foreign Affairs, it was brought forward again, and passed April 10. The President refused to recognize the International Association of the Congo as that of a friendly government. In the discussions between the Assoc- iation and the Government at Washington, the claim was announced that the territory ceded would be handed over to a free state to be located under its supervision; that it had for its purpose to levy customs duties, to guarantee complete commercial relations to all foreign states, and to grant to the citizens of all nations the same advantages that were not to exist at the same time to the citizens of all nations. The United States Government pressed its approval of the benevolent work of the Association, and formally recognized the flag as the flag of a friendly government.

French Action on the Congo.—Sevorgne Brazza was sent out to explore central Congo from the Gaboon coast by the French as a delegate of the International Association in 1879. Ascending Ogowe river to its source, he followed the head-waters of the river he followed down to Stanley Pool, discovering a route to the Upper Congo with navigable water nearly the whole way. At the explorer made hasty arrangements to b into prominence as a rival road to the o
nstructed by Stanley around the Congo sites. He laid out a series of stations on the two rivers, and concluded a treaty with the Makoko, or head chief, of the Batéké in which he acquired a small strip of land on the Congo, above Stanley Pool. By virtue of this and a second treaty he asserted a French protectorate over the left bank of the Congo, from the Gordon to the Impala river, a length of three and a half miles. The two treaties made with this site were ratified by the French Chambers when Stanley returned, six months after his departure from Brazza, to the site he had selected for a French station at Brazza.

De Brazza's Makoko was his successor, Mpano, who wished to repudiate his undertakings; but Mr. Stanley was not disposed to begin a conflict. Later, when the French raised a claim, which the Association would not concede, the two sides exchanged letters, and the treaty was suspended. Although the treaty was not to define the ceded district as right bank, the French claimed rights over the left bank Stanley Pool and the Congo up to the mouth of the Kwanza, affirming it to be Batéké territory, but largely populated by the Pa-then tribe. The Batékés on the bank of the Congo are traders in skins and slaves. The real owners of the lands are the hill tribes to the south-east, who exact a tribute of the ivory sold by the Bayansi and Babuma traders in the Upper Congo to the Bakongo, who sort it to the coast. The ivory-traders are the south bank of the river while waiting the caravans, and give their landlords a portion of the price for the privilege. On this basis the French Association was founded.

The French agents tried to gain support of the negro settlers to their claims. Several times they entered the territory occupied by the Association and negotiated in a menacing manner. The Association finally, in order to escape the risk of being evicted from its establishments in the vicinity of Stanley Pool, entered into a convention with the French Government in 1884, whereby it promised France as a condition of preference in case it should be obliged to evacuate the Congo and to sell the Nile-Kwilu. It declared that it would not cede its territories to any power, unless circumstances obliged it to part with them in return for which the French Government promised to respect the stations and free rights of the Association, and not obstruct its rights. France and the Association were to fix in conventions the limits and conditions of their respective action.

France-German Concert.—Germany, on the 26th of April, 1884, invited France to an exchange of views with reference to the Anglo-Portuguese treaty, in order that they might act in concert. The British Government abandoned the treaty in consequence of their objections. The result of correspondence and a conference at Varzin between M. de Courec and Prince Bismarck was an agreement reached in September to call a congress of maritime powers in Berlin, for the purpose of establishing freedom of navigation on the Congo and the Niger, in accordance with the doctrines of the Vienna Congress, and free trade in the basin of the Congo through the instrumentality of the International Association and future Congo state. Germany stipulated for the same privileges for her subjects in the event of the acquisition of the territories of the Association by France, in accordance with the convention concluded between M. Ferry and Baron Strasch, President of the International Association of the Congo. Another question to be settled by the congress was the definition of the formalities that are necessary, in order that fresh annexations on the coast of Africa may be effective. Invitations to the conference were issued October 6. All the powers invited signed their acceptance; England, however, not without a preliminary discussion and a reservation with reference to the navigation of the Niger.

German Recognition of the Association of the Congo.—Articles were signed at Brussels by Baron Strasch and Count Brandenburg, the German Minister to Belgium, Oct. 8, by which Germany recognized the flag of the Association as that of a friendly state, and promised to recognize the frontier of the future Congo Free State as indicated on a map appended to the treaty. The Association engaged not to levy any dues on merchandise, to afford to German subjects complete protection, and rights of navigation, commerce, industry, the right to settle, establish houses of commerce, and buy
and sell and rent land, and the right to carry on the coasting and river trade under the German flag. It was stipulated that all the rights extended by the Association to subjects of the German Empire, and guaranteed by the convention, should have binding force on the acquiring party, in case the Association should cede away its territory, or any portion of it.

The Berlin Conference.—The West African Conference met at Berlin, Nov. 15. Germany, Austria-Hungary, Belgium, Denmark, Spain, the United States, France, Great Britain, Italy, Holland, Portugal, Russia, Sweden and Norway, and Turkey took part, being represented by their ministers in Berlin, and some of them by adjutant members. Portugal presented a memorandum, in which her claim to the mouth of the Congo was advanced. Sir Edward Male, on behalf of England, reserved the Niger from the application of international control, while accepting the principle of freedom of navigation and the doctrines of the Congress of Vienna, under English surveillance. Shortly before the meeting of the conference, Great Britain proclaimed a protectorate over the valley of the Lower Niger, up to the junction with the Benue, and over the coast from Benin to Ambas Bay. The memorandum set forth that the English Government had furnished means for the exploration of the Niger, that the commerce is exclusively in the hands of the English, that order and progress had been achieved by the influence of English consuls, supported by the presence of British frigates, and that, in the interests of commerce and civilization, Great Britain had, by treaty with the native rulers, taken the Lower Niger under her protection. Great Britain engaged to treat the ships of other nations on the same footing as British ships, and to levy no tax or duty on imports.

After long discussion, the English position was drawn up for the place of an international one. A proposal from the English representatives to interdict the portation of spirituous liquors into the region, in view of the fact that a large number of the inhabitants are Mohammedans, was accepted. The American representatives fixed the limits of the commercial base of the Congo, according to the views of H. Stanley, who was present as an expert for the United States. Mr. Stanley assured the conference that the Congo was considered to be in the field of their operations, and that the Nile connected with the Nile system and territory surrounding them, occupied by the cruel native kingdom. The conference decided on the limits proposed for the neutralized territory in this direction, the coast-line on the Atlantic. The 20th parallel of north latitude, which was to be declared free to navigation and commerce by the Conference, should be neutral in war, and that no articles constituting the war should be supplied to those countries. The region included the debatable strip of coast by Portugal and the coast-line occupied by stations of the International Association between the two, south of the mouth of the Kwanza, the French had recently taken possession of Loango and Black Point, and expected of a design to acquire ultimate coast district of the Association, and extend their possessions to the mouth of the Congo. Baron de Courcel strenuously resisted the neutrality proposal of America, submitted a counter-proposal to neutralize the Congo river and its affluents. Mr. the adjutant delegate for the United States sent a scheme for a railroad from Stanley Pool, with a monopoly of the river, with a proposal that it be extended with like guarantees. Portugal objected to the proposal, which was rejected.

The Congress adopted a declaration establishing freedom of navigation a merce in the commercial basin of the Congo. The boundaries of the free-trade territory defined in this declaration. The Atlantic line extends from Sette river on the Loge river on the south. The northerly follows Sette river to its source, runs eastward along the water-shed of Opoué until it reaches the geographic limit of the Congo. It follows the water-way between the Congo on the south and the Nile on the north, and then, the basin of the Nile, runs northward include the coast-region on the Indus as far as the firth parallel of north latitude 6° N. to the mouth of the Zambezi. The littoral of the Indian Ocean extends from
the Sultan of Zanzibar. The powers undertakes to enforce the principle of the most favorable conditions to commerce of all nations. All flags, of whatever origin imported into the territory shall be subject to no taxes except such as are necessary to meet useful expenses in the interests of trade. No duties on vessels or on commodities are levied. No power exercising sover-}

Within the free territory shall be allowed no monopolies or favor in matters of All powers having rights of sovereignty free territory bind themselves to watch the preservation of the native tribes, to or their improvement and civilization, aid in the suppression of the slave-traffic, also to protect and favor religious, civil, and scientific institutions, to extend protection to missionaries and explored to grant perfect freedom of conscience worship to natives as well as to foreigners. At the instance of France, supported by England, a proviso was inserted reserving the reconsider and revoke the freedom of after the lapse of twenty years.

Dec. 18 the Conference adopted a naviga- act, placing the Congo under the con-

Regulations to be established for the safety and control of navigation shall be drawn up in such way as to facilitate, as much as possible, the circulation of merchant-ships. The arrangements of the act remain in force in time of war, and neutrals and belligerents shall have free access to the river for purposes of commerce and transit on the roads, railways, and canals, except for the transport of articles contraband of war. An act containing the same provisions was passed in relation to the Niger, except that in the place of a river commission the British Government undertook to apply it to the portion of the stream under her sovereignty or protection, and France to that part subject to her authority. The Conference adjourned, Dec. 29, until the second week in January.

**CONGRESSIONALISTS.** The following is a summary of the statistics of the Congregational churches in the United States, as they are compiled in the "Congregational Year-Book" for 1888: Number of churches, 4,092; of ministers, 8,889; number of church-members, 401,849; of persons in Sunday-schools, 478,887. The number of additions returned as "by profession" was 77,923; number of baptisms, 8,390 of adults, and 8,801 of infants. The whole amount of benevolent contributions returned by 3,000 churches reporting was $1,828,994; amount of contributions for home expenditures returned, by 3,000 churches, $8,884.106. The net increase of church-members during the year was 5,840; increase of members of Sunday-schools, 11,220; new churches, 177.

The seven theological seminaries at Andover, Mass.; Bangor, Maine; Chicago, Ill.; Hartford, Conn.; Oberlin, Ohio; Oakland, Cal. (Pacific); and New Haven, Conn. (Yale), returned, in 1888, 47 professors, 11 instructors or lecturers, 9 resident lecturers, 16 in the graduating
was also 258 larger than in the previous year. Grants amounting to $67,545 had been voted to 126 churches, and grants amounting to $108,947 had been paid to 109 churches. Loans amounting to $7,535 had been voted to 22 churches; and loans amounting to $4,892 had been paid to 12 churches, in both cases in aid of the building of parsonages. One hundred and nine applications were still on hand waiting action. The Union had, for the past eighteen years, been organizing churches at the average rate of 184 a year, and aiding in building churches at the average rate of 57 a year. The average rate for the past five years had been 143 churches organized and 71 buildings erected. In the last year, 183 churches had been organized and 100 built. The Rev. C. H. Taintor, of Milford, N. H., had been appointed Field secretary of the society for the collection of funds.

American Home Missionary Society.—The fifty-eighth anniversary meeting of the American Home Missionary Society was held in Saratoga Springs, N. Y., June 4th. President Julius II. Seelye, of Amherst College, presided. The total resources of the society for the year had been $429,915, and the expenditures $419,449. The pledges standing against the society amounted to $33,658. Thirteen hundred and forty-two ministers had been employed during the year, of whom $40 had labored in the New England States, 81 in the Middle States, 28 in the Southern States, 87 in the Southwestern States, 179 in the Western States and Territories, and 84 on the Pacific coast. These ministers had served, fully or at stated intervals, 2,930 congregations. Three of them had served colored congregations; and 80 ministers had preached to Welsh, 16 to German, 2 to French, and 2 to Mexican congregations, in their own languages. The organization of 298 new Sunday-schools was reported; 2,098 Sunday-schools were under the special care of the missionaries of the society; and the number of Sunday-school and Bible-class students was "not far from" 116,314. Four thousand and ninety-nine additions to the churches on profession of faith were returned. One hundred and forty-nine new churches had been organized, and 53 churches had become self-supporting. Eight Women's State Home Missionary Societies were co-operating with this society. The plan of co-operation with the American Missionary Association reported by the Committees of Conference of the societies was approved.

American Missionary Association.—The thirty-eighth anniversary of the American Missionary Association was held in Salem, Mass., October 21st. The Hon. William B. Washburn presided. The total receipts of the society for the year had been $287,594, and the expenditures $301,923. A debt of $18,785 was returned. The following is a general summary of the statistics of the missionary work of the Association:

Workers.—Superintendents, 3; Missionaries and teachers—at the South, 428; among the Indians, 48; among the Chinese in California, 27; total, 495.

Churches.—Churches at the South, 95; among the Indians, 4; total, 99. Church members at the South, 6,420; among the Indians, 374; total, 6,794. Total number Sunday-school pupils, 15,555.

Schools.—Schools at the South, 65; among the Indians, 9; among the Chinese, 15; total, 89. Pupils at the South, 9,758; among the Indians, 458; among the Chinese, 1,884; total, 12,090.

Four of the chartered institutions in the South returned 73 students in theology and 55 in law. New churches and school-houses had been erected in connection with most of the Indian missions, particularly at the Sandy agency, at the Ponca reserve, at Fort Salley agency, Cheyenne river agency, and at Fort Berthold mission. A Government boarding-school, of fifty pupils, had been organized at Fort Stevenson, and schools were asked for at Rosebud, Red Cloud, and Standing Rock agencies. Six new churches had been organized and seven new places of worship secured in the South. Of the 76 pastors who had been serving the Southern churches, including those who were serving as professors in colleges, 26 were from the North, and 55 had been raised up in the South in the institutions of the society, while an equal number of men, trained by the teachers of the Association, had been furnished to other denominations. In connection with the recently established work of the Association in the mountain-regions of eastern Kentucky and Tennessee, an academy had been founded at Williamsburg, Ky., in which 189 students were enrolled, and a number of local educational meetings had been held. The Mendhi mission in Africa (West Coast), which had been transferred to the Board of Missions of the United Brethren Church, had made good progress under the new administration. The plan of co-operation which had been arranged between committees of this Association and of the American Home Missionary Society (see below) was approved. Fraternal greetings were offered to the Congregational brethren in Sweden and Norway, and the right hand of fellowship to the Ansgar and mission Swedish churches in the United States.

Relations of the American Home Missionary Society and the American Missionary Association.—The Committees of Conference of the 'American Home Missionary Society and the American Missionary Association met in Springfield, Mass., December 11, 1882, and adopted the following action concerning the future relations of the two societies and their work:

"Consulting the principle of comity between the two missionary societies, the American Home Missionary Society and the American Missionary Association, and that traditional policy of Congregationalists which ignores caste and color-lines, and also in view of the present relative positions and strength of the
CONGREGATIONALISTS.

eties, we, the joint committee, give it
ignment:
as, as heretofore, the principal work
american Home Missionary Society
in the West, and that the principal
the American Missionary Association
in the South.
whatever new work may be called for
cality, should be under the charge of
already occupying the ground. No
to this rule should be allowed unless
reement between the two societies.
concerning any work already estab-
either society, we would recommend
other comity, economy, or efficiency
vanced by it, such transfer of the
ld be made as shall bring the work of
ies into harmony with the preceding
ations."  

on was approved by both societies
ings in 1884.

The seventy-fifth annual
American Board of Comission-
reign Missions was held at Columbus,
ber 7th. The Rev. Mark Hopkins,
., presided. The total receipts of
year for the year had been $538,558, of
28,851 had come in in the form of
. An addition of more than a quar-
.  

million dollars to the funds of the
expected from a legacy left it by
. Swett, of Jamaica Plain, Mass. The
age of the contributions to the
of the society during the last ten
cluding legacies, had been in round
$339,000, or about one dollar for each
ember of the Congregational church-
the country. About 75 per cent.
contributions were received from
England States.

eral Survey" of the work of the
mission-field represented it as
a condition of prosperity and prog-
Africa, the role had been pub-
plete in the Zulu language, and
hundred copies of the work had
once. The East African mission,
ntended to push into Uムala's had
n Inhambane, location had been found to be a

one. The West Central African mis-
, had suffered from disturbances,
re, however, believed to be only tem-
end no permanent interruption to the
its friends was anticipated. The na-
v friendly, while the Portuguese
were hostile, to it. The Micronesian
vessel, the Morning Star, had been
at a new vessel to replace it was
cks. In the Turkish missions, the
is in the previous year (see "Annual
1883, article "Congregational-
se various questions at issue between
3 and the native churches had pro-
od results and an improved feeling;
understanding of mutual relations
had been attained, and misconceptions on both
sides had been cleared up. Conferences of
missionaries and representatives of the native
churches, which had previously been held to a
limited extent, had now been instituted in all
the different stations, "with the happiest re-
results." A Home Missionary and Education
Society, known as the "Greek Alliance," had
been established at Smyrna. Over seventy dif-
ferent publications, amounting in all to more
than 11,000,000 pages, had been issued dur-
ing the year from the press at Constantin-
ople. Among these were about 80,000 copies
of the Scriptures or portions of them. Two
important evangelical movements were recorded
among the old Armenians in the fields of Sivas
and Cesarea, where meetings for young men,
congregations for worship and the study of the
Scriptures, weekly prayer-meetings and wom-
en's prayer-meetings, and a Sunday-school, had
been organized and were sustained. In India,
fourty-three out of seventy-one churches were
themselves meeting their current expenses; the
church in Bombay was besides supporting a
missionary at a point seven hundred miles dis-
tant; and the churches of the city of Madura
had engaged two evangelists for labor in the
outlying districts. In China, the encouraging
prospects of the mission of the "Oberlin Band,
in the province of Shanse were remarked upon.
The Government officers in North China were
manifesting a better appreciation of the object
and labors of the missionaries, and had changed
their attitude toward them. As a whole,
through the missionaries of the board and its
native ministers, the gospel was preached in
twenty-five different languages, and in more
than eight hundred towns and cities, on every
Lord's day. The following is the general sum-
nary of its work for the year: Number of
missions, 21; of stations, 79; of out-stations,
747; of ordained missionaries, 168; of physi-
cians not ordained (7 men and 5 women), 10;
of other male assistants, 7; of women (wives,
159; unmarried, besides physicians, 102), 534;
whole number of laborers sent from the United
States, 429; number of native pastors, 145; of
native preachers and catechists, 50; number of
school-teachers, 1,010; of other native helpers,
307; whole number of native laborers, 1,821;
whole number of laborers connected with the
missions, 2,360; number of churches, 292; of
church-members, 21,178; added during the
year, 2,871; whole number from the first, 91,-
694; number of high-schools, theological semi-
naries, and station-classes, 50, having an at-
tendance of 5,007 pupils; of boarding-schools
for girls, 68, with 1,711 pupils; of common
schools, 935, with 80,148 pupils; whole num-
ber of pupils, 33,860.

The commission appointed under the direc-
tion of the National Council of the Congrega-
tional Churches of the United States, 4 to pre-
pare, in the form of a creed or catechism, or
both, a simple, clear, and comprehensive ex-
position of the truths of the glorious gospel of
the blessed God, for the instruction and edification of our churches," in March, 1884, submitted to the churches the following:

STATEMENT OF DOCTRINE.—I. We believe in one God, the Father Almighty, Maker of heaven and earth, and of all things, visible and invisible; in Jesus Christ his only Son, our Lord, who is of one substance with the Father, by whom all things were made:

And in the Holy Spirit, the Lord and Giver of life, who is sent from the Father and Son, and who, together with the Father and Son, is worshiped and glorified.

II. We believe that the providence of God, by which he executes his eternal purposes in the government of the world, is in and over all events; yet so that the freedom and responsibility of man are not impaired, and sin is the act of the creature alone.

III. We believe that man was made in the image of God, that he might know, love, and obey God, and choose to live in obedience to his will; but through disobedience he fell under the righteous condemnation of God; and that all men are so alienated from God that there is no salvation from the guilt and power of sin, except through God's redeeming grace.

IV. We believe that God would have all men return to him and to this end he has made himself known, not only through the works of Nature, the course of his providence, and the consciences of men, but also through supernatural revelations made especially to a chosen people, and above all, when the fullness of time was come, through Jesus Christ his Son.

V. We believe that the Scriptures of the Old and New Testaments are the record of God's revelation of himself in the work of redemption; that they were written by men under the special guidance of the Holy Spirit; that they are able to make wise unto salvation; and that they constitute the authoritative standard by which religious teaching and human conduct are to be regulated and judged.

VI. We believe that the love of God to sinful men has found its highest expression in the redemptive work of his Son; who became man, uniting his divine nature with our human nature in one person; who was tempted like other men, yet without sin; who, by his humiliation, his holy obedience, his sufferings, his death on the cross, and his resurrection, became a perfect Redeemer; whose sacrifice of himself for the sins of the world declares the righteousness of God, and is the sole and sufficient ground of forgiveness and of reconciliation with him.

VII. We believe that Jesus Christ, after he had risen from the dead, ascended into heaven, where, as the one mediator between God and men, he carries forward his work of saving men; that he sends the Holy Spirit to convict them of sin, and to lead them to repentance and faith; and that those who, through renewing grace, turn to righteousness, and trust in Jesus Christ as their Redeemer, receive for his sake the forgiveness of their sins, and are made the children of God.

VIII. We believe that those who are thus regenerated and justified, grow in sanctified character through fellowship with the indwelling of the Holy Spirit, and obedience to the truth; that a holy life is the fruit and evidence of saving faith; and that the believer's life of continuance in such a life is in the preserving grace of God.

IX. We believe that Jesus Christ came to establish among men the reign of truth and love, righteousness and peace; that to Jesus Christ, the Head of this kingdom, Christians are directly responsible in faith and conduct; and that to him all have immediate access, without mediatiorial or priestly intervention.

X. We believe that the Church of Christ, invisible and spiritual, comprises all true believers, whose duty it is to associate themselves in churches, for the maintenance of worship, for the promotion of growth and fellowship, and for the conversion of those churches, under the guidance of Holy Scriptures, and in fellowship with one another as may determine—each for itself—their organic statements of belief, and forms of worship; in point and set apart their own ministers, and co-operate in the work which Christ has committed them for the furtherance of the gospel through the world.

XI. We believe in the observance of the day, as a day of holy rest and worship; in the letter of the Word; and in the two sacraments. Christ has appointed for his church: Baptism administered to believers and their children; and the Supper, as a symbol of his suffering death, a eucharistic meal, and a means whereby he condescends to be present in the spiritual union and communion of believers with himself.

XII. We believe in the ultimate prevalence of Christ over all the earth: in the appearing of the great God and our Saviour Christ; in the resurrection of the dead; and in judgment, the issues of which are everlasting life and everlasting death.

The commission also submitted for the churches in the admission of the following:

CONFESSION OF FAITH.—'What shall I rend the Lord for all his benefits toward me? I will praise the name of the Lord; I will pay my vows unto the Lord now in presence of all his people.'

'Whosoever therefore shall confess me before him I will confess also before my Father which is in heaven. But whosoever shall deny me before men I will also deny him before my Father which is in heaven.'

'For with the heart man believeth unto righteousness; and with the mouth confession is made unto salvation.'

Dearest beloved, called of God to be his child through Jesus Christ our Lord, you are here, in the presence of God and his people, you may into the fellowship and communion of his Church. You do hereby publicly confess Jesus Christ as your crucified Saviour and Lord; you consecrate yourselves unto God, and life to him; you accept his Word as you and his Spirit as your Comforter and Guide, trusting in his grace and strength to bring all goodness, you promise to do God's holy will to walk with this church in the truth and power of Jesus Christ.

Accepting, according to the measure of your standing of it, the system of Christian truth in the churches of our faith and order, and by this into whose fellowship you now enter, you join ancient saints, with the Church throughout the ages, and with us, your fellow-believers, in humble, heartfelt confessing your faith in the gospel, say: I believe in God the Father Almighty, Maker of heaven and earth. And in Jesus Christ his Son, our Lord; who was conceived by the Holy Ghost, born of the Virgin Mary; suffered under Pontius Pilate, was crucified, dead, and buried; the third day he rose from the dead; he ascended into heaven; and sitteth at the right hand of God the Father mighty from thence he shall come to judge the quick and the dead. I believe in the Holy Ghost; the catholic Church; the communion of saints; the forgiveness of sins; the resurrection of the body; the life everlasting. Amen.

(Then should baptism be administered to those who have not been baptized. Then should be who would unite with the church by letter. To the minister should say:}
CONGREGATIONALISTS.

175.

the Lord whom we unsitely worship, renew your self-consolation, and joine to this, our Christian faith and covenants of the church present should rise.) as you into our fellowship. We promis[e] you with Christian love. God grant and being loved, serving and being ing and being blessed, we may be pres-12.1 do together on earthe, for the pe[oe]l of the saints in heaven.

God of peace, that brought again from Lord Jesus, that great shepherd of the h[er] blood of the everlasting covenant, feet in every good work to do his will, not that which is well-pleasing in his h[er] Jesus Christ; to whom be glory for i. Amen.”

It is proposed as an alternative beneficia-

**Annals in Great Britain.—** The English Annual Year-Book” for 1884 reports regi-mental churches in England and which 996 were in the principality; [34 in Scotland; 39 in Ireland; and lands in the British seas; besides a number of evangelistic stations in Scotland; making a total of 4,158 in the British Islands. The colonies 3 churches and preaching-stations. New churches were formed during 8 new chapels built, or old ones emision-halls and 31 new school were erected, and 21 chapels and 10 parishes. The colleges of the denominations 451 students in training for the and 10 missionary institutions in the returned about 300 native theo-

**Biblical Society.—** The annual meet- London Missionary Society was held. The receipts of the society for the year £91,414 for general purposes, 58 of special contributions; the ex- had been £118,402. A large num- nations were paid by the gates to the various foreign fields. A secretary had thus visited India, South Africa.

**Jubilee Union of England and Wales.—** The 4th annual meeting of the Con- Union of England and Wales was held at London, May 12th. The Rev. Dr. of Swansea, was elected Presi- sion for the year. The Executive reported that the subscriptions to the fund, to March, 1884, had amounted to £100,000 to the freeing of chapels from debt, and 3. The churches in the Australian also resolved on the institution of a fund, and had obtained £100,000 to the freeing of chapels from debt and objects. The report described a scheme for the education of the young in Bible schools, which it was proposed to bring before the society. The subject of lay agency, some attention had been paid, was with the remark that it was outside of the Union to erect a quasi-ecclesiastic in the matter, which had bet-
tion, when the committee reported that $292,015 of the subscriptions had been paid in during the year, and that the debts of six churches had been extinguished. The denominational debts, including expenditures, amounted to $250,280, while the total promises to the jubilee fund, up to the date of the report, were returned at $37,828.

**CONGRESS, UNITED STATES.** The first session of the Forty-eighth Congress began on Monday, Dec. 3, 1886. The following is a list of members. The dates prefixed indicate the expiration of their terms; the letters d. and R. indicate their politics:

**SENATE.**

**Arkansas.**
- 1887, John T. Jones, D.
- 1888, W. S. Proctor, R.

**California.**
- 1887, J. Q. F. Goodwin, D.
- 1888, W. H. Green, R.

**Colorado.**
- 1887, John R. Hovey, D.
- 1888, W. H. Page, R.

**Connecticut.**
- 1887, J. T. Farley, D.
- 1888, J. W. Hill, R.

**Delaware.**
- 1887, S. C. Williams, D.
- 1888, R. H. Page, R.

**Florida.**
- 1887, J. H. Collins, D.
- 1888, W. H. Brown, R.

**Illinois.**
- 1887, R. M. Gage, D.
- 1888, W. J. Harris, D.

**Indiana.**
- 1887, J. B. Hair, D.
- 1888, W. H. Reed, D.

**Iowa.**
- 1887, J. B. Haines, D.
- 1888, W. H. Brown, D.

**Kansas.**
- 1887, J. P. Hays, D.
- 1888, W. H. Smith, D.

**Kentucky.**
- 1887, J. H. Brown, D.
- 1888, W. H. Martin, D.

**Louisiana.**
- 1887, J. H. Ryan, D.
- 1888, W. H. Miller, D.

**Maryland.**
- 1887, J. B. Henn, D.
- 1888, W. H. Brown, D.

**Massachusetts.**
- 1887, J. H. Brown, D.
- 1888, W. H. Baker, D.

**Michigan.**
- 1887, J. H. Brown, D.
- 1888, W. H. Brown, D.

**Minnesota.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Mississippi.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Missouri.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Nebraska.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**New Hampshire.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**New Jersey.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**New York.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**North Carolina.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**North Dakota.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Ohio.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Pennsylvania.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Oregon.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Rhode Island.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**South Carolina.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Tennessee.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Texas.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Vermont.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Virginia.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Washington.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Wisconsin.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**W. Virginia.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

** HOUSE OF REPRESENTATIVES.**

**Alabama.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Arkansas.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**California.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Colorado.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Connecticut.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Delaware.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.

**Florida.**
- 1887, J. B. Haines, D.
- 1888, W. H. Martin, D.
Malini
R. Reed, R. Charles A. Houteau, R.
Nugley, Jr., R. Seth L. Miliken, R.
Maryland
F. Corlifling, D. 4. John Y. L. Hindley, D.
Talbot, D. 9. Hulbert. D.
Hoblitte1, D. 6. Louis E. McComas, R.
Massachusetts
T. Davis, R. 8. Theodore Lynn, L. R.
Loze, R. 10. William W. Rice, R.
C. Ramsey, R. 11. William Whiting, E.
C. Collins, 12. George D. Robinson, E.
Morse, D. 18. George D. Robinson, E.
Leaving, D. resigned Jan. 3, 1864, succeed by Francis B.
Stone, R. 38. Rockwell, R.
A. Russell, R.
Michigan
C. Maybury, D. 7. Ezra C. Carleton, D.
6. Elbridge G. Clary, D.
S. L. Mackieson, D. 11. Edward Brethoff, R.
Encoln, D. 11. Edward Brethoff, R.
J. Winans, D.
Minnesota
Ste, R. 4. W. D. Washburn, E.
Wakefield, R. 5. Knute Nelson, R.
S. Stahl, R.
Mississippi
T. Makeen, D. 4. Hernando D. Money, D.
E. Chalmers, E. 5. Otto E. Singleton, D.
June 18, 1864. 8. Henry S. Van Eaton, D.
Roll, D. 7. Elbridge Bankhead, D.
Missouri
M. Alexander, D. 3. James B. Howard, D.
M. Dockery, D. 10. Martin L. Clardy, D.
Barnes, D. 11. Richard P. Blunt, D.
Graves, D. 12. Charles H. Morgan, D.
Ingrove, D. 13. Robert W. Pynn, D.
Mississippi
J. J. Weaver, D. 3. Edward E. Valentine, R.
é, R.
Nevada
W. Caddo, D.
New Hampshire
1. Hayne, R. 2. Osslan Ray, E.
New Jersey
M. Ferrell, D. 8. William Wilson Phelps, R.
Bever, R. 8. William H. F. Parker, D.
an. 13. J. W. Madison, D.
J. Howe, R.
New York
J. Sciouer, D. 17. Henry G. Burbridge, R.
Smith, D. 18. Frederick A. Johnson, R.
E. Robinson, D. 19. William E. Parker, R.
R. James, R. 20. Edward Wemple, D.
Collins, D. 22. Charles E. Skinner, E.
Deaver, D. 23. Thomas Spriggs, D.
Dorsey, D. 24. Newton W. Nutting, R.
Adams, D. 25. Frank Eiseck, R.
offer, D. 26. Sereno E. Paynes, R.
B. Foster, D. 27. Charles W. Wadsworth, R.
B. Foster, R. 28. Stephen C. Mildred, R.
Johnson, D. 29. John Arnot, D.
Ketcham, D. 30. Daniel P. Greenleaf, D.
ich, D. 31. Robert J. Stevens, D.
Warley, J. 32. William H. Rogers, D.
V. A. Hatley, D. 33. Francis B. Brewer, B.
North Carolina
T. Bennett, D. 5. Alfred M. Seale, D.
G. S. Johnson, D. 6. Clement Dowd, D.
O. Hare, R. 7. Tyre York, I. R.
J. Green, D. 8. Robert H. Vance, D.
E. Cox, D.
Ohio
F. T. Elliott, D. 4. Benjamin Le Ferrer, D.
Jordan, D. 8. George E. Sennor, R.
J. Murray, D. 5. William D. Hill, D.
ol. XXIV.—12 A
Campbell, successful 18. Sargent Wilkins, D.
contestant, R. 17. Joseph D. Taylor, R.
J. Warren Kitchen, R. 18. William McKinley, Jr., R.;
Frank H. Hurt, D. successful contestant.
Alphonso Hart, R. 30. David R. Paige, D.
George L. Converse, D. 21. Martin A. Foran, D.
George W. Goddes, D.
Oregon
Melvin C. George, R.
Pennsylvania
Mortimer F. Elliott, D. 16. Samuel P. Barr, R.
Henry B. Bingham, R. 13. George A. Post, R.
Charles O'Neill, R. 15. William W. Brown, R.
Samuel J. Randall, D. 17. Jacob M. Campbell, R.
William D. Keiley, R. 19. Louis E. Athkinson, R.
Alfred C. Harner, R. 21. Charles E. Boyle, D.
James B. Everhart, R. 19. William A. Dunlop, D.
Isaac Newton Evans, R. 23. Charles E. Boyle, D.
Daniel Ernemeric, R. 25. James H. Hopkins, D.
Thomas M. Haynes, R.
William Matisher, D. 28. George V. Lawrence, R.
John B. Sover, D. 24. John P. Dutcher, D.
Daniel W. Connolly, D. 29. Samuel R. Miller, R.
Charles M. Brunner, Jr. 30. Samuel M. Brubacher, B.
Rhode Island
Henry J. Spooner, R. 5. Jonathan Chase, R.
South Carolina
Samuel Dibbels, D. 6. George W. Dargan, D.
George D. Tillman, D. 7. Edmund W. M. Mackey, D.
D. Wyatt Allen, D. 8. H. J. Massie, D.
Jobe, Jan. 17, 1864, succeeded by Robert Smalls, R.
Tennessee
Augustus H. Pettitbee, R. 5. Andrew J. Coldwell, D.
George D. Dillib, D. 7. John M. Taylor, D.
Santion McMillan, D. 8. Alice A. Pierce, D.
Robert R. Rychard, D. 9. Cassey Young, D.
South Carolina
Charles Stewart, D. 7. Thomas P. Ochilbee, L.
John H. Estes, D. 8. James F. Miller, D.
James H. Jones, D. 9. Roger Q. Mills, D.
David B. Culberson, D. 10. John Hancock, D.
G. W. Weldon, B.
Vermont
Virginia
John S. Wise, R. 4. Benjamin S. Hooper, R.
John W. Wilson, D. 13. J. Randolph Tucker, D.
contestant, R. 14. John D. Partlow, D.
Harry Libby, R. 20. John S. Barbour, D.
West Virginia
1. Nathan Godf, Jr., R. 5. Charles P. Snyder, D.
Abraham X. Parker, D. 16. William L. Wilson, D.
Eustace Gibson, D.
Wisconsin
1. John Sumner, D. 4. Richard Guenther, R.
Daniel H. Sumner, D. 5. Gilbert M. Woodward, D.
Harr W. Jones, D. 6. William T. Farris, D.
P. V. Deister, D. 7. Isaac Stephenson, D.
Joseph Rankin, D.
Those Congressmen without a district assigned to them in the list were elected at large.

Territorial Delegates
Arizona—Granville H. Gury, D. New Mexico—Trimagino
Dakota—John B. Raymond, R. Luna; F. A. Mannassea,
Montana—Martin Magrath, D. Chus—John T. Calne, D.
Washington—T. F. Brenta, B. Wyoming—E. M. Post, D.

Reapportionment
Democrats . . . . 210 Independent . . . . 4(329,880),(362,900)
Republicans . . . . 119 Greenbackers . . . . 1

The Clerk presented the following list of changes between the election of the Forty-eighth Congress and its first meeting:
Organization.—The Senate was called to order by the president pro tempore, George F. Edmunds. Dec. 13, 1883, that gentleman, Senator Ingalls being in the chair, offered a resolution that the Senate proceed to elect a president pro tempore; Jan. 14, 1884, the resolution was carried, and Henry B. Anthony was chosen. This action was taken out of compliment to Mr. Anthony, who seemed entitled to the honor by length of service, but was known to be unfit for the position on account of the precarious condition of his health. When elected, he immediately declined to accept the position tendered, and Mr. Edmunds was once more chosen president pro tempore, the Democratic voting for George H. Pendleton. There was some discussion as to whether any vacancy existed after the declaration of Mr. Anthony. It was the opinion of Messrs. Sherman, Hoar, and Dawes, that no vacancy had been made by the election of Mr. Anthony, though as a measure of precaution they were willing to re-elect Mr. Edmunds. They did not deny the right of the Senate to change its presiding officer at any time. Messrs. Ingalls and Bayard maintained that the election of Mr. Anthony and his declaration left the position vacant ipso facto. Mr. Jones, of Florida, argued that no vacancy existed when Mr. Anthony was chosen, and that none could exist except through the resignation of Mr. Edmunds. He said: "The Senator from Kansas a while ago stated that it had been the custom for this body to exercise its power of removing its president; I think that has been one of very recent date. I think, sir, that the history of this body will show that the best minds that ever occupied seats in it were, until a few years ago, clearly of the opinion that when the Senate elected a Senator to the position of president pro tempore of this body in the absence of the Vice-President of the United States, or when he entered the presidential office, he should hold until the office became again constitutionally vacant. That was the deliberate opinion of no less a man than William H. Seward, expressed on this floor."

Dec. 18, 1883, the following officers of the Senate were chosen: Anson G. McCook, of New York, Secretary; Charles W. Johnson, of Minnesota, Chief Clerk; James R. Young, of Pennsylvania, principal Executive Clerk; the Rev. Elias De Witt Huntley, of the District of Columbia, Chaplain; William F. Canaday, of North Carolina, Sergeant-at-Arms. These officers were appointed by resolution, and selected by a strict party vote; some of the Democratic Senators opposed any change of Senate officers as inconsistent with the civil-service reform legislation of the previous Congress.

The House of Representatives organized by choosing John G. Carlisle, of Kentucky, Speaker, Dec. 3, 1883. He received 190 votes against 113 votes for J. Warren Keifer, of Ohio. George D. Robinson received two votes, and Messrs. Lacey, Wadsworth, and Wise, one each. Thirteen members failed to vote. The following subordinate officers were chosen December 4: John B. Clark, Jr., of Missouri, Clerk; John P. Leedom, of Ohio, Sergeant-at-Arms; G. W. Waterman, of Texas, Door-keeper; Lyman Hall, of Indiana, Postmaster; Rev. J. S. Lindsey, of the District of Columbia, Chaplain.

As the election of Mr. Carlisle to the speakership was the result of a sharp contest within the lines of the Democratic party, which seemed to involve the issue of tariff legislation, much political significance was attached to the following paragraph of Mr. Carlisle’s speech on taking the chair: "I am sure, gentlemen, that all matters of legislation presented during this Congress will receive from you such careful consideration as the magnitude and character of the interests involved require, and that your action upon them will be wise, conservative, and patriotic. Sudden and radical changes in the laws and regulations affecting the commercial and industrial interests of the people ought never to be made unless imperatively demanded by some great public necessity, and in any opinion, under existing circumstances, such changes would not be favorably received by any considerable number of those who have given serious attention to the subject. Many reforms are undoubtedly necessary, and it will be your duty, after a careful examination of the whole subject in all its bearings, to decide how far they shall extend, and when and in what manner they shall be made. If there are any who fear that your action upon this or any other subject will be actually injurious to any interest, or even afford reasonable cause for alarm, I am quite sure that they will be agreeably disappointed."

The President’s Message.—The third annual message of President Arthur was submitted to Congress, Dec. 4, 1883, as follows:

To the Congress of the United States:
At the threshold of your deliberations I congratulate you upon the favorable aspect of the domestic and foreign affairs of this Government. Our relations with other countries continue to be upon a friendly footing.
With the Argentine Republic, Austria, Belgium, Brazil, Denmark, Hayti, Italy, Santo Domingo, and
CONGRESS, UNITED STATES. (PRESIDENT'S MESSAGE.)

Norway, no incident has occurred which will cast a cloud on the friendship which has characterized the relations of the United States with this country. The recent opening of telegraph communication with Central America has accelerated the interchange of information and the development of trade between the two countries, and the result has been to promote the welfare of both nations. The prosperity of the United States is greatly enhanced by the extension of commerce, and the benefits derived from this extension are shared by all classes of the population. The extension of telegraphic communication with Central America is a step in the right direction, and the extension of similar facilities to other countries will be attended with similar advantages. The government of the United States is committed to the principle of free trade, and the extension of telegraphic communication with Central America is a measure in accordance with this principle. The extension of telegraphic communication with Central America is a step in the right direction, and the extension of similar facilities to other countries will be attended with similar advantages. The government of the United States is committed to the principle of free trade, and the extension of telegraphic communication with Central America is a measure in accordance with this principle.
diplomatic resort for their protection. The initial step toward the establishment of this protection has been taken in the negotiation by the commission authorized by Congress of a treaty, which is still before the Senate awaiting its approval.

The provisions for the reciprocal crossing of the frontier by the troops in pursuit of hostile Indians have been prolonged for another year. The concessions of the forces of both governments against these savages have been successful, and several of the most dangerous bands have been captured or dispersed by the skill and valor of United States and Mexican soldiers fighting in a common cause.

The treaty making of the boundary from the Rio Grande to the Pacific having been ratified and exchanged, the preliminary reconnaissance therein stipulated has been effected. It now rests with Congress to make provision for completing the survey and relocating the boundary monuments.

A convention was signed with Mexico on July 18, 1888, providing for the rehearing of the cases of Benjamin Pearson and W. Oliver Mining Company, in whose favor awards were made by the late American and Mexican Claims Commission. That convention still awaits the consent of the Senate. Meanwhile, because of those charges of fraudulent awards which have made a new commission necessary, the Executive has directed the suspension of payments on the distributive quota received from Mexico.

Our geographical proximity to Central America and our commercial relations with those states of that country justify, in my judgment, such a material increase of our consular corps as will place at each capital a consular representative.

The contest between Bolivia, Chili, and Peru has passed from the stage of strategic hostilities to that of negotiation, in which the pacts of this Government have been exerted. The demands of Chili for an absolute cession of territory have been maintained, and accepted by the pacts of General Iglesias to the extent of concluding a treaty of peace with the Government of Chili in general conformity with the terms of the protocol signed in May last between the Chilian commander and General Iglesias. As a result of the conclusion of this treaty, General Iglesias has been formally recognized by Chili as President of Peru, and his government installed at Lima, which has been evacuated by the Chilians. A call has been issued by General Iglesias for a representative assembly to be elected on the 18th of January, and to meet at Lima on the 1st of March next. Meanwhile the provisional government of General Iglesias has applied for recognition to the principal powers of America and Europe. When the will of the Peruvian people shall be manifested, I shall not hesitate to recognize the government approved by them.

Diplomatic and naval representatives of this Government attended at Caracas the celebration of the birth of the illustrious Bolivar. At the same time the inauguration of the state of Washington in the Venezuelan capital testified to the veneration in which his memory is there held.

Congress at its last session authorized the Executive to propose to Venezuela a reopening of the awards of the mixed commission of Caracas. The departure from this country of the Venezuelan minister has delayed the opening of negotiations for reviving the commission. This Government holds that until the ratification of a treaty upon this subject, the Venezuelan Government must continue to make the payments provided for in the convention of 1866.

The first sphere of the powers occupying the unoccupied rights of Mexico is not by itself satisfactorily adjusted. The French Cabinet is in a period of settlement which meets my approval, but as it involves a resuming of the annual quotas of the foreign debt, it has been designed to the advantage of the treaty in the judgment of the Cabinet of Berlin, Copenhagen, The Hague, London, and Madrid.

At the recent coronation of his Majesty King Rikikan, this treaty was signed between the Hawaiian and United States Governments by the usual diplomatic process of ratification. The treaty is not yet before Congress. I am informed that the charges of abuses and frauds under that treaty have been exaggerated, and I renew the suggestion of last year's message, that the treaty be modified wherever its provisions have proved onerous to legitimate trade between the two countries. I am not disposed to favor the entire cessation of the treaty relations which have hitherto been good—will between the countries, and contributed toward the prosperity of Hawaii in the family of civilized nations.

In pursuance of the policy declared by this Government of extending our intercourse with the Eastern nations, we have during the past year established in Persia, Siam, and Corea. It is probable that permanent missions of those countries will be established in the United States. A special embassy from Siam is now on its way.

Treaty relations with Corea were perfected by the exchange as Seoul, on the 18th of May last, of the ratifications of the lately concluded convention, and since the King of Tah Chosen, has visited this country and received a cordial welcome. Corea, as yet unsanctioned with the methods of Western civilization, now invites the attention of those interested in the advancement of our foreign trade, as it needs the implements and products which the United States are ready to supply. We seek no monopoly of commercial and no advantages over other nations, but as the Chinese, in reaching for a higher civilization, have admitted in this republic, we can not regard with indifference any encroachment on their rights.

China, by the payment of a money indemnity, has settled certain demands of the Chinese government, and I have strong hopes that the remainder will soon be adjusted.

Questions arise touching the rights of American and other foreign manufacturers in China under the provisions of treaties which permit aliens to exercise in their capacity of manufacturers. On this subject the point in our own treaty is silent, but under the operation of the most-favored-nation clause, we have like privileges with the other powers. While it is the duty of the Government to see that our citizens have the full enjoyment of every benefit secured by treaty, I doubt the necessity of a proposition to constrain China to admit an interpretation which we have only an indirect treaty right to exact. The transfersence of American capital for the employment there of Chinese labor would in effect inaugurate a competition for the control of markets now supplied by our own industries.

There is good reason to believe that the law restricting the immigration of Chinese has been violated, intentionally or otherwise, to the prejudice of the Chinese nation, to whom is devolved the duty of certifying that the immigrants belong to the excepted classes.

Measures have been taken to ascertain the facts incident to this supposed infraction, and it is believed that the Government of China will co-operate with the United States in securing the faithful observance of the law.

The same considerations which prompted Congress at the last session to return to Japan the Simoock indemnity seems to me to require at its hands a liberal action in respect to the Canton indemnity fund, now amounting to $800,000.

The question of the general revision of the foreign treaties of Japan has been considered in an international conference held at Tokio, but without definite result as yet. This Government is disposed to concur in the requests of Japan to determine its own tariff duties, to provide such proper judicial tribunals, as may commend themselves to the Western powers in the trial of the amount of the fund to which foreign nations are parties, and to assimilate the terms and duration of its treaties to those of other civilized states.
For the same period the ordinary expenditures were:

For civil expenses .................................................. $323,848,380 76
For foreign intercourse ............................................ 2,419,775 34
For Indians .......................................................... 7,636,360 84
For pensions ........................................................ 66,013,578 64
For the military establishment, including river and harbor improvements and arsenals ..................................................... 46,911,858 98
For the naval establishment, including vessels, machinery, and improvements at navy-yards ..................................................... 12,938,417 17
For miscellaneous expenditures, including public buildings, lighthouses, and collecting the revenue ........................................ 40,693,428 79
For expenditures on account of the District of Columbia ..................................................... 2,811,078 46
For interest on the public debt ........................................ 19,161,181 35
Total ...................................................................... $395,409,387 54

Leaving a surplus revenue of ........................................ $123,897,444 41
Which, with an amount drawn from the cash balance in the Treasury of ..................................................... 1,990,819 56
Making ...................................................................... $124,888,263 96

Was applied to the redemption of bonds for the sinking fund ..................................................... $44,850,700 00
Of fractional currency for the sinking fund ........................................................................ 45,388 96
Of funded loan of 1861, continued at 5½ per cent ..................................................... 60,880,300 00
Of loan of July and August, 1860, extended at 5½ per cent ..................................................... 20,264,800 00
Of funded loan of 1867 ..................................................... 1,415,800 00
Of funded loan of 1881 ..................................................... 721,150 00
Of loan of February, 1861 ..................................................... 15,800 00
Of loan of July and August, 1861 ..................................................... 945,800 00
Of loan of March, 1868 ..................................................... 118,800 00
Of loan of July, 1862 ..................................................... 41,800 00
Of funded loan of 1852 ..................................................... 4,000 00
Of five-twentieths of 1855 ..................................................... 10,800 00
Of five-twentieths of 1864 ..................................................... 7,000 00
Of five-twentieths of 1865 ..................................................... 9,600 00
Of ten-twentieths of 1864 ..................................................... 338,500 00
Of consols of 1850 ..................................................... 40,800 00
Of consols of 1861 ..................................................... 253,100 00
Of consols of 1862 ..................................................... 104,600 00
Of Oregon war debt ..................................................... 5,000 00
Of refunding certificates ..................................................... 109,150 00
Of old demand, compound interest, and other notes ..................................................... 13,800 00
Total ...................................................................... $124,888,263 96

The revenue for the present fiscal year, actual and estimated, is as follows:

<table>
<thead>
<tr>
<th>SOURCE</th>
<th>For the quarter ended Sept. 30, 1885</th>
<th>For the remaining three quarters of the year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual</td>
<td>Estimated</td>
<td></td>
</tr>
<tr>
<td>From customs ..................................................... $575,409,975 67</td>
<td>$575,567,924 85</td>
<td></td>
</tr>
<tr>
<td>From internal revenue ..................................................... 29,662,278 60</td>
<td>90,821,291 40</td>
<td></td>
</tr>
<tr>
<td>From sale of public lands ..................................................... 0 00</td>
<td>5,067,856 86</td>
<td></td>
</tr>
<tr>
<td>From tax on circulation and deposits of national banks ..................................................... 1,507,900 98</td>
<td>1,243,190 13</td>
<td></td>
</tr>
<tr>
<td>From repayment of interest and sinking fund, Pacific Railway Companies ..................................................... 291,009 01</td>
<td>1,478,940 49</td>
<td></td>
</tr>
<tr>
<td>From customs fees, fines, penalties, etc. ..................................................... 295,906 78</td>
<td>901,808 23</td>
<td></td>
</tr>
<tr>
<td>From five-cent, letters patent, and lands ..................................................... 668,309 90</td>
<td>2,638,790 30</td>
<td></td>
</tr>
<tr>
<td>From proceeds of sales of Government property ..................................................... 119,598 35</td>
<td>17,437 77</td>
<td></td>
</tr>
<tr>
<td>From profits on collars, etc. ..................................................... 900,329 46</td>
<td>8,149,770 54</td>
<td></td>
</tr>
<tr>
<td>From deposits for surveying public lands ..................................................... 727,285 69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From revenues of the District of Columbia ..................................................... 354,017 00</td>
<td>1,942,909 01</td>
<td></td>
</tr>
<tr>
<td>From miscellaneous sources ..................................................... 1,587,159 68</td>
<td>2,883,510 87</td>
<td></td>
</tr>
<tr>
<td>Total receipts ..................................................... $955,956,917 09</td>
<td>$947,868,959 27</td>
<td></td>
</tr>
</tbody>
</table>

The actual and estimated expenses for the same period are:
for the quarter ending Sept. 30, 1888.

<table>
<thead>
<tr>
<th>OBJECT</th>
<th>Actual</th>
<th>Estimated</th>
</tr>
</thead>
<tbody>
<tr>
<td>For civil and miscellaneous expenses, including public buildings, lighthouses, and collecting the revenue.</td>
<td>$13,303,739 42</td>
<td>$13,414,300 58</td>
</tr>
<tr>
<td>For Indexes</td>
<td>2,522,860 54</td>
<td>2,416,603 46</td>
</tr>
<tr>
<td>For pensions</td>
<td>14,392,861 93</td>
<td>13,714,780 92</td>
</tr>
<tr>
<td>For military establishment, including fortifications, river and harbor improvements, and armaments.</td>
<td>13,312,204 64</td>
<td>24,657,705 47</td>
</tr>
<tr>
<td>For naval establishment, including vessels and machinery, and improvements at stations.</td>
<td>4,199,209 65</td>
<td>12,600,700 81</td>
</tr>
<tr>
<td>For expenditures on account of the District of Columbia.</td>
<td>1,380,586 41</td>
<td>2,811,182 59</td>
</tr>
<tr>
<td>For interest on the public debt.</td>
<td>14,777,707 96</td>
<td>97,707,707 96</td>
</tr>
<tr>
<td>Total ordinary expenditures.</td>
<td>$47,342,000 80</td>
<td>$190,000,000 80</td>
</tr>
</tbody>
</table>

Total receipts, actual and estimated. | $343,000,000 00 |
Total expenditures, actual and estimated. | $250,000,000 00 |
Estimated amount due the sinking fund. | $55,000,000 00 |
Leaving a balance of. | $39,183,385 96 |

If the revenue for the fiscal year which will end on June 30, 1888, is estimated upon the basis of existing laws, the Secretary is of the opinion that for that year the receipts will exceed by $50,000,000 the ordinary expenditures, including the amount devoted to the sinking fund.

Hitherto the surplus as rapidly as it has accumulated has been devoted to the reduction of the national debt.

As a result the only bonds now outstanding which are redeemable at the pleasure of the Government are the 3 per cents, amounting to about $305,000,000.

The 4 per cents, amounting to $250,000,000, and the $75,000,000 4 per cents are not payable until 1981 and 1907, respectively.

If the surplus shall hereafter be as large as the Treasury estimates now indicate, the 8 per cent. bonds may be redeemed at least four years before any of the 4 per cents can be called in. The latter at the same rate of accumulation of surplus can be paid at maturity, and the amount requisite for the redemption of the 4 per cents will be in the Treasury many years before those obligations become payable.

There are cogent reasons, however, why the national indebtedness should not be thus rapidly extinguished. Chief among them is the fact that only by excessive taxation is such rapidity attainable.

In a communication to the Congress at its last session I recommended that all excise taxes be abolished except those relating to distilled spirits, and that substantial reductions be also made in the revenues from customs. A statute has since been enacted by which the annual tax and tariff receipt of the Government have been cut down to the extent of at least fifty or sixty millions of dollars.

While I have no doubt that still further reductions may be wisely made, I do not advise the adoption this session of any measures for large diminution of the national revenue. The results of the legislation of the last session of the Congress have not so far become sufficiently apparent to justify any radical revision or sweeping modifications of existing law.

In the interval which must elapse before the effects of the act of March 3, 1888, can be definitely ascertained, a portion at least of the surplus revenues may be wisely applied to the long-neglected duty of reha-

bilitating our navy and providing coast defenses for the protection of our harbors. This is a matter to which I shall again advert.

Immediately associated with the financial subject just discussed is the important question what legislation is needed regarding the national currency. The aggregate amount of bonds now on deposit in the Treasury to support the national-bank circulation is about $500,000,000. Nearly $200,000,000 of this amount consists of 8 per cents which, as already stated, are payable at the pleasure of the Government, and are likely to be called in within less than four years, unless meantime the surplus revenues shall be diminished.

The probable effect of such an extensive retirement of the securities which are the basis of the national-bank circulation would be such a contraction of the volume of the currency as to produce grave commercial embarrassment.

How can this danger be obviated? The most effectual plan, and one whose adoption at the earliest practicable opportunity I shall heartily approve, has already been indicated.

If the revenue of the next four years shall be kept substantially commensurate with the expenses, the volume of circulation will not be likely to suffer any material disturbance.

But if, on the other hand, there shall be great delay in reducing taxation, it will become necessary either to substitute some other form of currency in place of the national-bank notes, or to make important changes in the laws by which their circulation is now controlled.

In my judgment the latter course is far preferable. I commend to your attention the very interesting and thoughtful suggestions upon this subject which appear in the Secretary's report.

The objections which he urges against the acceptance, of any other securities than the currency of the Government itself as a foundation for national-bank circulation seem to me insuperable.

For averting the threatened contraction two courses have been suggested, either of which is probably feasible. One is the issuance of new bonds, having many years to run, bearing a low rate of interest, and exchangeable upon specified terms for those now outstanding. The other course, which commends itself to my own judgment as the better, is the enactment of a law repealing the tax on circulation and permitting the banks to issue notes for an amount equal to 90 per cent. of the market value of a like number of face value of their deposited bonds. I agree with the Secretary in the belief that the adoption of this plan would afford the necessary relief.

The trade-dollar was coined for the purposes of trade in countries where silver passed at its value ascertained by its weight and fineness. It never had a legal-tender quality. Large numbers of these coins entered, however, into the volume of our currency. By common consent their circulation in domestic-trade has now ceased, and they have thus become a disturbing element. They should not be longer permitted to embarrass our currency system. I recommended that provision be made for their reception by the Treasury and the mint, as bullion at a small percentage above the current market price of silver of like fineness.

The Secretary of the Treasury advises a consolidation of certain of the customs districts of the country, and suggests that the President be vested with such power in relation thereto as is now given him in respect to collectors of internal revenue by section 441 of the Revised Statutes. The statistics upon this subject which are contained in his report furnish of themselves a strong argument in defense of his views.

At the adjournment of Congress the number of internal-revenue collection districts was one hundred and twenty-six. By Executive order, dated June 6, 1889, I directed that certain of these districts be consolidated. The result has been a reduction of one
CONGRESS, UNITED STATES. (President's Message.)

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In the report of the Secretary of War it will be
in only a single instance has there been any
use of the quiet condition of our Indian tribes.
from Mexico to Arizona was made in March
small party of Indians, which was pursued
Creek into the mountain-regions from
from had come. It is confidently hoped that se-
takes will not again occur, and that the In-
which have for so many years disturbed
will hereafter remain in peaceable subsis-

1 call your attention to the present condition
extended sea-coast, upon which are so many
ies whose wealth and importance to the coun-
d the introduction of modern fed guns into maritime warfare, and if they
put in an efficient condition we may easily
out of the hands of a hostile power great-
or to ourselves. As germane to this subject, 
attention to the importance of perfecting
steamers and Cape Cod. The board author-
last Congress to report upon the method
be adopted for the manufacture of
steamers and Cape Cod. The board author-

The rate of postage on drop-letters passing through
these offices is now fixed by law at two cents per half-
ounces or fraction thereof. In offices where the delivery
system has not been established the rate is only half

It will be remembered that in 1848, when free de-
delivery was first established by law, the uniform single-
rate postage upon local letters was one cent; and so it
remained until 1874, when in the post-offices where carrier
service was established it was increased in order to
defray the expense of such service.

I can see no reason why that particular class of mail
matter should be held accountable for the entire cost
of not only its own collection and delivery, but the
collection and delivery of all other classes; and I am
confident, after full consideration of the subject, that
the reduction of rate would be followed by such a
growing occasion of business as to occasion slight and
temporary loss to the revenues of the Post-Office.

The Postmaster-General devotes much of his report
to the consideration, in its various aspects, of the rela-
tions of the Government to the telegraph.

The Postmaster-General devotes much of his report
to the consideration, in its various aspects, of the rela-
tions of the Government to the telegraph.

The objections which may be justly urged against
either of those projects, and indeed against any sys-
tem which would require an enormous increase in the
civil-service list, do not, however, apply to some of
the plans which have lately provoked public comment
and discussion. It has been claimed, for example,
that Congress might wisely authorize the Postmaster-

to contract with some private persons or cor-
poration for the transmission of messages, or of a cer-
tain class of messages, at specified rates and under
Government supervision. Various such ventures of
the same general nature but widely differing in their
special characteristics, have been suggested in the
public prints, and the arguments by which they have
been supported and opposed have doubtless attracted
your attention.

It is likely that the whole subject will be considered
by you at the present session.
In the nature of things it involves so many questions of detail that I do not know what specific suggestions I might now submit.

I do not know whether the Government should be authorized by law to exercise some sort of supervision over interstate telegraphic communications, and I expect that the question of what end some measure may be devised which will receive your approval.

The Attorney-General criticizes in his report the provisions of existing laws fixing the fees of jurors and witnesses in the Federal courts. These provisions are, I think, contained in the act of February 28, 1853, though some of them were introduced into that act from statutes which had been passed many years previous, from which it is manifest that when these laws were enacted they had been just and reasonable would, in many instances, be judged to be more adequate than those under which the Attorney-General in the belief that the statutes should be revised by which these fees are regulated.

The change would prove to be a measure of economy, and would discourage the institution of needless suits, and proceedings, which, I think, are to be feared, have in some instances been conducted for the mere sake of personal gain.

Much interesting and varied information is contained in the report of the Secretary of the Interior. I particularly call your attention to his presentation of certain phases of the Indian question, to his recommendations for the repeal of the pre-emption and homestead act, and for more stringent legislation to prevent frauds under the pension laws. The statutes which prescribe the definitions and punishments of the offenses to pensions could, doubtless, be made more effective by certain amendments and additions which are pointed out in the Secretary's report.

I have previously referred to the alarming state of illiteracy in certain portions of the country, and again submit for the consideration of Congress whether some Federal aid should not be extended to public primary education wherever adequate provision therefor has not already been made.

The Utah Commission has submitted to the Secretary of the Interior its second annual report. As a result of its labors, the territory at the present time, to which it has been sent to ascertain the present condition of the law, the number of jobs is to be divided equally among the territories.

The functions of Congress do not extend to the supervision of the educational institutions in the Territories, and the report of the Commission, giving the results of its investigations and experiments, will be printed and mailed to the legislative bodies of the country, and the report of the Commissioner, giving the results of its investigations and experiments, will be printed and mailed to the legislative bodies of the country.

At this instance, a convention of those interested in the cattle industry of the country was lately held at Chicago. The prevalence of pleuro-pneumonia and other contagious diseases of animals was one of the chief topics of discussion. A committee of the convention will invite your co-operation in investigating the causes of these diseases, and providing methods for their prevention and cure.

I trust that Congress will not fail at its present session to put Alaska under the protection of law. If people have repeatedly denounced against our neglect to afford them the adequate relief because the law is expressly guaranteed by the terms of the treaty whereby the Territory was ceded to the United States. For sixteen years they have been pleaded in vain for that which they should have received without the asking.

They have no law for the collection of debts, the support of education, the conveyance of property, the administration of estates, or the enforcement of contracts; none indeed for the punishment of criminals, except such as offend against certain customs, commerce, and navigation acts.

The resources of the country, especially in fur, mines, and lumber, are considerable in extent, and capable of large development, while its geographical situation is one of political and commercial importance.

The promptings of interest, therefore, as well as considerations of honor and good faith, demand the immediate establishment of civil government in that Territory.

Complaints have lately been numerous and urgent that certain corporations, controlling in whole or in part the facilities for the interstate carriage of persons and merchandise in the country, have resorted in their dealings with the public to divers measures unjust and oppressive in their character.

In some instances the State governments have attacked and suppressed these evils, but in others they have been unavailing, and have not succeeded in enacting the territorial districts as are imposed upon them by the Federal Constitution.

The question how far the national Government may lawfully interfere in the premises, and what, if any, supervisory or control it ought to exercise, is one which merits your attention and consideration.

While we can not fail to recognize the importance of the vast railway systems of the country, and their great and beneficent influence upon the development of our material wealth, we should, on the other hand, remember that no individual, and no corporation, ought to be invested with absolute power over the interests of any other citizen, or class of citizens. The right of these railway corporations to a fair and profitable return upon their investments, and to reasonable freedom in their regulations, must be recognized; but it seems only just that, so far as its constitutional authority will permit, Congress should protect the people at large in their interstate traffic against acts of injustice which the State governments are powerless to prevent.

In my last annual message, I alluded to the necessity of protecting, by suitable legislation, the forests situated upon the public domain. In many portions of the West the pursuit of general agriculture is only made practicable by resort to irrigation, while successful irrigation would itself be impossible without the aid afforded by forests, in contributing to the regularity and constancy of the supply of water.

During the past year severe suffering and great loss of property have been occasioned by profuse floods, followed by periodical drought, in many of the great rivers of the country.

These irregularities were in great measure caused...
In the American West, the Bureau of Animal Industry reported on the valuation and management of federal lands.

At the time when the President temporarily assumed his duties, he had declared for the adoption of the organic law providing for the inauguration of the President, who must himself, under like circumstances, give place to such officer as Congress may be lawfully appointed to act as President.

In the interest of withdrawing from public sale this public domain, and establishing there a re-territorial division which has been held in the interior of the United States during the present year, as much as possible toward the south, and in the mountainous regions, to the north, and in the most isolated parts of the country, I am inclined to think that the President, who must himself, under like circumstances, give place to such officer as Congress may be lawfully appointed to act as President, is the subject of frequent deliberations in that body.

It is not yet certain that the numerous and interesting inquiries which are suggested by these words of the Constitution. They were fully stated in my first communication to Congress, and have since been the subject of frequent deliberations in that body.

For the reasons fully stated in my last annual message, I repeat my recommendation that Congress propose an amendment to that provision of the Constitution which prescribes the formalities for the enactment of laws, whereby, in respect to bills for the appropriation of public money, the Executive may be enabled, while giving his approval to particular items, to interpose his veto as to such others as do not commend themselves to his judgment.

The fourteenth amendment of the Constitution confers the rights of citizenship upon all persons born or naturalized in the United States and subject to the jurisdiction thereof. It was the purpose of this amendment to insure to members of the colored race the full enjoyment of civil and political rights.

Certain statutory provisions intended to secure the enforcement of those rights have been recently declared unconstitutional by the Supreme Court.

Any legislation whereby Congress may lawfully supplement the guarantees which the Constitution affords for the equal enjoyment by all the citizens of the United States of every right, privilege, and immunity of citizenship will receive my unhesitating approval.

CHESTER A. ARTHUR.
WASHINGTON, December 4, 1883.

Bureau of Animal Industry — Feb. 5, 1884, a bill to establish a bureau of animal industry, to prevent the exportation of diseased cattle, and to provide means for the suppression and extermination of pleuro-pneumonia and other contagious diseases among domestic animals, came up for discussion in the House, and was the subject of long debate there, and subsequently in the Senate. The measure, as reported from the Committee on Agriculture, was as follows:

Do as enacted, etc., That the Commissioner of Agriculture shall organize in his department a bureau of animal industry, and shall appoint a chief thereof, who shall be a competent veterinary surgeon, and that the duties of the office shall be to investigate and report upon the number, value, and condition of the domestic ani-
mals of the United States, their protection and use, and also in view into and report the causes of con-
tagious and communicable diseases among them, and
the means for the prevention and cure of the same,
and to collect such information on these subjects as
shall be valuable to the agricultural and commercial
interests of the country; and the Commissioner of
Agriculture is hereby authorized to employ a force
sufficient for this purpose. The salary of the chief
of said bureau shall be $8,000 per annum; and the Com-
missioner shall appoint a clerk for said bureau, with a
salary of $1,500 per annum.

Sec. 5. That the Commissioner of Agriculture is
authorized to appoint such persons as he shall
think proper, who shall be practical stock raisers or experienced
business men, familiar with questions pertaining to commercial
trading of live-stock, and the means for the prevention of con-
tagious and communicable diseases among them, and the
means for the protection of the same; and the Commissioners
shall, under the direction of the Commissioner of Agri-
culture, and under the provisions of this act, be
authorized to employ agents, experts, and contri-
butors, to execute the provisions of this act, and to
make such rules and regulations as they may deem
necessary to carry into effect the provisions of this act,
and to enforce the execution of the law throughout
the United States, and to perform all other services as
may be necessary to enforce the provisions of this act.

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Sec. 5. That the Commissioner of Agriculture is
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CONGRESS, UNITED STATES.

Bureau of Animal Industry.

The Commissioner of Agriculture annually presented a bill to Congress, at the commencement of each session, for the suppression of diseases among domestic animals. He contended that the disease of pleuro-pneumonia not only exists in the State of Massachusetts, but in many other States, and that its spread would cause great loss to the State and the Nation. He pointed out that the bill would provide for the inspection of all incoming cattle, and that the Federal Government should have the power to quarantine and destroy any cattle found to be infected. He stated that the bill was necessary to prevent the spread of the disease, and that it would be a wise use of Federal power.

The bill was introduced in the House of Representatives, and a number of amendments were offered. Some of the amendments were accepted, and the bill was passed by both houses and sent to the President for signature. The President signed the bill, and it became law.

The law provided that all incoming cattle must be inspected and quarantined, and that any cattle found to be infected with pleuro-pneumonia must be destroyed. The Federal Government was given the power to quarantine and destroy all cattle found to be infected, and to enforce the law by any means necessary.

The law was effective, and the spread of the disease was checked. The Federal Government was able to control the disease, and the country was able to export cattle to other countries without fear of the disease spreading.

The Commissioner of Agriculture continued to present bills to Congress, and the Federal Government continued to enforce the law. The disease was eventually eradicated from the country, and the Federal Government was able to continue exporting cattle to other countries without fear of the disease spreading.
because by our legislation we will repeal all those State laws.

"We have heard delegations from all the cattle interests of the country and representatives from every State where this disease exists. The Committee on Agriculture believe that the proposition submitted by them to the House is the best that can be devised for this purpose. That is, that the Commissioner of Agriculture, with the force placed at his command, shall, by proper investigation and inspection, locate this disease, notify the State authorities of the fact that it exists, and then invite the co-operation of the State. And from that point until the disease is exterminated it is proposed that the State and the Federal Governments shall each bear one half of the expense of the destruction of private property necessary for this purpose.

"By that means we secure not only the earnest but the interested co-operation of the State in the execution of this law. We secure what is better than that, the co-operation of the State authorities for the execution of the law within the limits of the State, because, when we reach that point, the power of the Federal Government ceases without the authority of the State. It is true that the Federal authority can go into a State and purchase in the market all the cattle in the State, and destroy them after they are purchased. But the Federal Government can not go into the State of Maryland or New Jersey, for instance, and condemn private property; nor can it, under the decision of the Supreme Court to which I have referred, even put that property in quarantine or place it under police regulations. That power belongs exclusively to the State.

"I am satisfied, from the information that we have upon this subject, that there is not a single State where the disease exists to-day that will not heartily and cordially co-operate with the Federal Government in the extinguishment of this disease, paying one half of the expense of so doing, because the States are now making efforts to do it alone. Certainly, they will not object to the Federal Government paying one half of the expense."

The opponents of the measure objected to it on the ground that it was unconstitutional; that it created new officials, in whose hands enormous power was vested with great possibilities of evil; that there was no real necessity for the passage of the bill. The case of the strict constructionists was presented by Mr. Eaton of Connecticut, who said:

"Mr. Chairman, this bill has a taking title. We all of us say we would be very glad and very happy to do anything that we can constitutionally to regulate this matter. Sir, I find myself with regard to this cattle question in the same difficulty that I found myself years ago with regard to a bill affecting the health of human beings. I did not believe that anybody to be appointed by Congress would have half the knowledge upon a matter of that kind that would be possessed by the people in the State of New York who for a hundred or two hundred years has taken care of the health of that community. So I say, sir, that the title of this bill, before it is passed, ought to be changed. It should be declared to be a bill to abrogate and annul the Constitution of the United States, and deprive the States of the rights which belong to them.

"Why, sir, for one moment, and it can be for but a moment, look at the power this bill undertakes to give the President of the United States. Power to establish what some on calls a horse-doctor, and very well calls, too, to do what? Why, to declare the State of Connecticut in quarantine, and to send the horse-doctor, or somebody else, from here to Connecticut, to tell our people what to do in regard to their safety and the health of their domestic animals.

"Why, sir, this whole bill, although frame with the best intentions, is like many other things which are full of good intentions. It is a bad bill, a bill which ought to receive the attention of this House, a bill which strikes directly at the root of the rights of the State, a bill which undertakes to make the President of the United States a master of the people of the United States, a master of the people of this great confederation of States.

"Sir, the State of Connecticut is sovereign, the State of Texas is sovereign, the State of Missouri is sovereign, in everything regarding the health of her people and the welfare and the property of her people. It is not within the power of Congress. Within the limits of the Constitution Congress can not undertake to arrogate to itself this great power.

"Mr. Chairman, I cannot characterize this bill in ten minutes. But I ask gentlemen to examine it with care. This is one of the wedge which we have driven into the constitution rights of the States. Beware of those wedges. They have been plenty in the past. Let us see to it there will be fewer of them in the future for the safety of this great people rests on their sovereignty and the rights of the States. With those rights—I say rights, not assumed rights but rights older than the Constitution, God given rights—with those rights protected, care for, and adhered to, this Government will go on until it will number hundreds of millions of people and hundreds of free and independent States. But, sir, it can not be done, and will never be done, if you undertake to take from the States their rights and give those rights to the confederated Government."

After a thorough discussion, the bill was amended by inserting in the first section the word "infected," and inserting the clause, "not to exceed twenty persons at any one time" after


* bill then passed the House, Feb. 28, by the following vote:

Yas—Aldrich, Call, Cameron of Wisconsin, Cock- roil, Conger, Cullon, Dawes, Dolph, Edmunds, Fife, Garland, George, Halsey, Hayes, Hoar, Ken-
One of the Senate amendments struck the words "number" and "value" out of the first section; another reduced the appropriation for carrying out the provisions of the measure from $350,000 to $250,000: a third provided "that the so-called splenitic or Texas fever shall not be considered a contagious, infectious, or communicable disease within the meaning of sections 4, 5, 6, and 7 of this act, as to cattle being transported by rail to market for slaughter when the same are unloaded only to be fed and watered in lots on the way thereto"; a fourth added "when absent from their usual place of business or residence as such agents" to the second section; a fifth struck out the proviso at the close of the third section, and the close of the section was made to read: "The Commissioner of Agriculture is hereby authorized to expend so much of the money appropriated by this act as may be necessary in such investigations and in such disinfection and quarantine measures as may be necessary to prevent the spread of the disease." A sixth inserted the word "dangerous" before the word contagious in the bill. The Senate amendments, after reference to a conference committee, were accepted by the House, May 24, and the measure was approved by the President, May 29.

During the progress of the bill through the Senate, Mr. Miller, of California, under instructions from the Committee on Foreign Affairs, offered the following amendment, which was laid upon the table:

Section 13. That the importation of nest-cattle, sheep, and swine, which are diseased, or infected with any disease, or which shall have been exposed to such infection within sixty days next before their exportation, is hereby prohibited; and any person who shall knowingly violate the foregoing provision shall be deemed guilty of a misdemeanor, and, shall, on conviction, be punished by a fine not exceeding $500, or by imprisonment not exceeding three years; and any vessel or vehicle used in such unlawful importation shall be forfeited to the United States.

Sec. 14. That the Secretary of the Treasury be and is hereby authorized, at the expense of the owner, to place and retain in quarantine all nest-cattle, sheep, and other ruminants, and all swine imported into the United States, at such ports as he may designate, for such purpose, and under such conditions as he may by regulation prescribe, respectively, for the inspection of animals above described; and for this purpose he may have and maintain possession of all lands, buildings, animals, tools, fixtures, and apparatus, now in use for the quarantine of nest-cattle, and hereafter purchase, construct, or rent such as may be necessary, and he may appoint veterinary surgeons, inspectors, officers, and employés by deemed necessary to maintain such quarantine, provide for the execution of the other provisions of this act.

Sec. 17. That the Secretary of the Treasury cause to be made the quarantine of all salted and bacon intended for exportation, with a view to ascertain and determine whether the same is

BUREAU OF ANIMAL INDUSTRY.
CONGRESS, UNITED STATES.

(BUREAU OF ANIMAL INDUSTRY.)

some ad sound for human food, and may authorize the officer of the United States to give an official certificate duly stating the condition in which such pork and bacon is found; and no clearance shall be given to any vessel having on board salted pork or bacon found, or such inspection, to be unwholesome for human food; but any pork or bacon may be exported to any foreign country without such inspection when it is proved to the satisfaction of the collector of customs that the same has been properly salted and packed more than sixty days prior to the date of the application for inspection or manifest for exportation; and such relief will in that case certify to the fact that such meat was properly salted and packed more than sixty days before the date of such entry. One copy of any certificate issued by such collector or inspector shall be filed in the customs-house where such inspection is made, another copy shall be attached to the invoice of each separate shipment of such meat, and a third copy shall be delivered to the consignee or shipper of such meat; and as evidence that pork and bacon have been inspected in accordance with the provisions of this act, and found to be wholesome and sound for human food, and for the identification of the same as such meat, stamps, or other devices as the Secretary of the Treasury may by regulation prescribe shall be affixed to each of such packages.

Sec. 18. That it shall be unlawful to import into the United States any adulterated or unwholesome food, drink, or article of animal or vegetable origin, or meat, or egg, or fish, or mutton, or any other substance which may be injurious to health. Any person importing into the United States any such adulterated food or drink, knowing or having reasonable cause to believe the same to be adulterated, being the owner thereof, or the agent of the owner, the consignee of the owner, or in privy with them, or the superior, shall be deemed guilty of an offense, and liable to prosecution therefor in the District Court of the United States for the district into which such property is imported; and, on conviction, shall be fined a sum not exceeding $1,000 for each separate shipment, and may be imprisoned by the court for a term not exceeding five years, at the discretion of the court.

Sec. 19. That any article designed for consumption in human food or drink, and any other article of the nature or description mentioned in this act, which shall be imported into the United States contrary to the provisions of this act, shall be forfeited to the United States, and shall be proceeded against under the provisions of chapter 18 of title 13 of the Revised Statutes of the United States; and such importation properly so described shall be destroyed or returned to the importer or owner, and shall be subject to the penalties prescribed by law. Any such article to be inspected or examined in order to determine whether the same have been so unlawful imported.

Sec. 20. That whenever the President is satisfied that there is good reason to believe that any importation is being made, or is about to be made, into the United States of any article described in this act or for human food or drink that is adulterated or is not suitable for, or is not dangerous to the health or welfare of the public, he may, in his discretion, by proclamation suspending the importation of such articles from such country for such period of time as he shall think necessary to prevent such importation; and during such period it shall be unlawful to import into the United States from the countries designated in the proclamation of the President any of the articles the importation of which is so suspended.

Sec. 21. That whenever the President shall be satisfied that any discrimination against the importation to or sale in such foreign state of any product of the United States, he may direct that such product of such foreign state be discriminated against any product of the United States as he may deem proper, and such shall be excluded from exportation to the United States; and in such case he shall make proclamation of his direction in the premises, and therein name the time when such direction against importation shall take effect, and after such date the importation of the articles named in such proclamation shall be unlawful. The President may at any time revoke, modify, terminate, or renew any such direction as, in his opinion, the public interest may require. The foregoing provisions of this section shall expire on the 4th day of March, A.D. 1887, and shall no longer be in force.

In explanation of this amendment Mr. Miller said: "If there is a very great objection to this amendment the Committee on Foreign Relations—and I certainly share in that opinion—are not particular about its being incorporated on this bill. We regard this as a measure of great importance, even greater than the bill under consideration, and that it is destined to do very much more good to the cattle interest of this country than the bill that it proposes to amend, and we hesitated for some time whether we would desire to incorporate a measure like this, which has been so carefully drawn and carefully considered as this has been, upon such a bill as has been brought here from the House of Representatives. But, believing that this measure ought to pass and that it is now very difficult for the House to reach any bill which the Senate may pass at this session, we thought it best to suggest at any rate to the friends of the bill under consideration that we would incorporate this as an amendment, believing that it supplements and improves and rounds out the measure and makes it of some value.

"The other branch of it which relates to the inspection of meats intended for exportation, the Senate has had ample opportunity to read and digest and understand, because it has been reported some time ago and attracted a great deal of attention when it was reported. I think every Senator is perfectly familiar with the provisions, and I think every Senator will agree that some such law as this ought to be enacted.

"We have come to the conclusion that the discrimination made against American meats in foreign countries is unwarranted, perhaps based upon a false assumption of facts; at all events that there is no reason for the prohibition of American meats in England and France and the other countries which have prohibited them. The investigation which we have been enabled to give the subject convinced us that the American meats are not infectious, that not a single case of trichina has ever occurred in any part of Europe from the use of American salted meats, that the curing process entirely destroys the parasites. The evidence upon that subject is overwhelming. It is contained in a report which was made by the Committee on Foreign Relations and has been printed. It is voluminous, and contains all
the evidence and facts which are necessary to bring any one to that conclusion. "I do not desire to take up the time of the Senate in a discussion of this measure. The Senator from Kentucky asked me in regard to the twenty-first section as to what was meant by that. We mean precisely this: that the President of the United States shall have the power, as the head of this nation, to issue a proclamation, whenever he thinks the public interest requires it, excluding from importation into the United States any article of commerce from a foreign state which has discriminated against any product of the United States. We believe that although the time may not have come just now for the exercise of such a power, the power ought to be lodged somewhere, to be exercised as occasion may require, so that where willful discriminations are made against the products of the United States without reason, without cause, as we believe they have been and are being made to-day, the only way to deal with that subject is to place it in the power of the Executive of this nation to adopt similar measures in respect to those nations which discriminate against our products. That is all there is of that." Against the consideration of the amendment Mr. Beck, of Kentucky, said: "The reason why I asked that question of the Senator from California was to have an opportunity to say to him that this matter is entirely too important and too comprehensive, without discussing the merits of it, to be tackled on as an amendment to a bill of this sort. The twenty-first section, of course, brings up all the questions of our foreign relations with France, Germany, England, and all the other nations of Europe. The Committee on Foreign Relations published a volume, which I have read with a great deal of care and with much interest. It has also published another volume for the use of that committee, a copy of which was furnished to me by the kindness of the chairman—perhaps all Senators have not seen it—giving all the tariff laws of the nations of Europe and of all the world, I believe. When the question comes up to be discussed it is going, of course, to involve a very careful consideration, and it was for that reason I suggested to him to explain the amendment so that the Senate might see that this was too great a question altogether to attach to a bill that, as I understand it, is simply giving power to the officers of the United States to manage our internal affairs so as to prevent the spread of contagious diseases of animals." Bureau of Labor Statistics.—April 19, 1884, the Committee on Labor, of the House, reported with amendments a bill to establish and maintain a Bureau of Labor Statistics. It provided for the creation of "a department of labor statistics at the seat of government," with a commissioner to be appointed by the President, by and with the advice and consent of the Senate. It gave minute directions as to the subjects into which the commissioner should push his investigations, authorized him to issue circulars inquiring, fixed his salary and term of office provided for the appointment of a chief clerk and set a limit to the expenditures of the department. In a brief speech, Mr. Foran, Ohio, made a statement of the necessity of the passage of such a measure. He said: "Mr. Chairman, I doubt if there has ever been before the American Congress a question of greater importance, or one that more directly concerns the welfare of humanity, than that which is being now considered by this House. It will be impossible, in the few brief moments I am permitted to speak, to do more than call your attention to the general scope and posture of the measure now under discussion. It is a generally accepted axiom that bad laws and evil legislation originate in and spring from that cupidity and selfishness that has been a predominant characteristic in man nature. This proposition is only partially true. A very considerable portion of the perfect and vices of legislation of which people justly complain, may be traced to lack of reliable data and accurate knowledge upon the part of the average law-maker, or true conception or comprehensive understanding of the science of society, or that science which M. Comte more compactly and distinctly designates sociology—a science which concerns itself with all the various phenomena incident to man in society, and resulting from the multiform actions and peculiar and changing conditions of collective masses of the man species existing in social life. The great error and mistake of the average statesman is the assumption that society shall be conformed to statute law—that every enactment of our legislative bodies, whether based upon correct principles or not, should be the means of compulsion, of which we are to be violently, inevitably, and absolutely compelled to adapt itself to the conditions of law. Following this false and erroneous theory of legislation, our law-makers frequently enact laws in blind ignorance of the conditions of society or even even elementary principles of sociology. Laws are enacted simply to meet necessities and exigencies as they arise, without reference to the causes which occasioned them. In the empirical physician, the law-maker too frequently attempts to cure a diseased body by the enactment of laws based upon systematic manifestations. The true theory of legislation, however, as I understand it, is based upon the idea that laws should be acted in accordance with and suited to the phenomenal conditions of the social state the people to be governed by them; that instead of endeavoring to control and manage events after their occurrence, the province of statesmanship is to prevent future mistakes by legislation based on a thorough comprehension of existing social conditions—that to determine by statistical and speculative
Congress, United States.


Nate--Aiken, Bellmont, Bennet, Bland, Blount, Buchanan, Candler, Candles, Crip, Dibrell, Dunn, J. H. Ervin, Hemphill, J. H. Rogers, Scala, Shaw, Tillman, H. G. Turner, Oscar Turner--19.


The bill came up for discussion in the Senate May 14, and was severely criticised, especially by Mr. Morgan, of Alabama, and Mr. Ingalls, of Kansas, both of whom ridiculed its provisions. The serious objections made by them were summarized in the former gentleman's opening speech:

"I fail to see in the legislation of the United States in all of its past history any real discrimination against the laboring classes of this country, as laboring men, or as citizens. We have upon our statute-books a tariff which I think operates very unjustly against the operatives, those men who are employed as laborers by the manufacturers. At the same time it must be admitted that the laborers themselves are the men who sustain that tariff. Misguided in respect to its effects upon their own prosperity, they are used by the manufacturers constantly at the ballot-box, for the purpose of sustaining the burdens under which they rest. Whether they want to be better informed on that question or not, I do not know. I think
they should be, and I should be glad of an opportunity of giving them more full and accurate information as to the operation of that solitary law upon our statute-book which has any injurious effect on the laboring classes of this country. In the further debate of this question, I think I might well require of every Senator who will participate in it, to point out any statute of the United States under which the laboring classes are either wronged or neglected, unless it may be this tariff legislation. I am not aware of any other.

"There may be a want of information on the part of representatives in both houses as to the condition of the laboring classes in the United States, and if so, it is the fault of the representatives themselves. Our representative system is divided up so that each 150,000 people, or about that number, is represented by a separate representative in the House, chosen by the people, and if they and the Senators in this body are really not informed as to the condition of their respective constituencies the fault is that of the representative and not of the law. I do not believe that there is any gross ignorance in either branch of Congress as to the actual condition and wants and necessities of the people of this country. It may not be information collected and tabulated in form so that it can be read by every man; but when you take the aggregate information of the two bodies upon the condition of the people they represent, I believe that it is as extensive and as accurate as the information that is possessed by legislators in any country in the world. It would be a convenience to political economists, and to social economists, and to writers and speculators upon economic questions, to have this all collected and tabulated. It is also for the interest and honor of the country that the exact condition of all classes in the country should be known. I therefore am not opposed to collecting these statistics. On the contrary, during the time I have had the honor to serve upon the Committee on the Census, which is since its first organization, it has been a part of my duty that I have most willingly and cheerfully performed, to try and assist in the collection of statistics touching every economic question in the United States, and the census of 1880, although not entirely accurate, still more accurate than any that ever preceded it, is a full and complete narrative of the condition of almost every industry of any importance in the United States, and of a good many that are not of any importance, at least, not of any great importance.

"Now, we have a Bureau of Statistics in the Treasury Department, presided over by an eminent, able statistician, Mr. Nimmo, to whom the Senate is constantly in the habit of applying for the purpose of getting information upon almost every statistical subject that concerns legislation in this body. The main value of a bureau of statistics rests in the capacity of the man who has its direction, and in his integrity. If you have a really statistician at the head of that bureau, and it is furnished with a sufficiency of clerical means enough to get information, he will inquire, digest, and put before the country authentic and proper form all the necessary facts to guide us in legislation, and to the country in its investigation of the social, and economical conditions in every respect. We have such a bureau, and we such a man. I do not perceive the necessity of organizing another bureau to conduct this business, and I think it would be good policy to place this subject under the control of that bureau, as is proposed to be done by amendment of the Senator from Arkansas (Garland).

"Some pathetic appeals are made to the Senate in reference to the wants and den of what are called the laboring classes, that the Senators upon the Committee on Education and Labor, in their investigate this subject through the country, have been informed generally by black and white people of all classes, South, North, East, and West, wherever they were in the course of their investigations, that they desire a bureau for the purpose of increasing their hap and prosperity, and for the purpose of giving more emphasis to the facts relating to their condition, whether it be good or whether it be bad. I should like to gratify any one of the people of the United States in any way that they have under a question of this kind indeed upon any question. At the same time it is the duty of the Senate of the United States to consult a sound and wise policy in respect of this as in respect of everything else."

"May 23d, Mr. Garland, of Arkansas, to reconsider the bill, but the motion was by the following vote:

Yea—Bayard, Butler, Camden, Coke, Cole Fair, Garland, Harris, Jackson, Jones, Jones of Indiana, Lapham, Mann, Morgan, Pendleton, Walker, Williams—18.

Nay—Altphich, Allison, Blair, Cull, Cameron Wisconsin, Cooper, Culkin, Dolph, Edmonds, G Harrison, Hawley, Hill, Hear, Jones of New Jersey, Logan, McMillan, Merrill, Palmer, Platt, Pugh, Sawyer, Van Wyck, Vest, Voor Wilson—25.


Mr. Garland also moved to strike or after the enacting clause, and insert the following as a substitute for the House bill:

That section 342, chapter 10, of the Revised statutes be amended by adding thereto the following words, namely:

"The Chief of the Bureau of Statistics shall, such regulations as the Secretary of the Treasury prescribes, annually collect and report to Congress statistics of and relating to marriage and divorces."

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CONGRESS, UNITED STATES. (CHINESE IMMIGRATION.)

States and Territories and the District of Columbia, and pertinent information relating to all matters of labor and production in the United States touching the pecuniary, industrial, national, and sanitary condition of the laborers, and to the permanent prosperity of the industry of the whole country; and the chief of such bureau shall be $5,000.

The following was tabled by the following:


Bayard, Butler, Camden, Cockrell, Coke, Joiph, Fair, Garland, Gorman, Harris, Jones of Florida, Keuna, Maxwell, Pendleton, Ransom, Slater, Van Whyck, and Williams—34.


Idrich, of Rhode Island, offered, by amendment, the following substitute for the bill:

That there shall be established in the Interior a bureau of labor, to be under the charge of a commissioner as shall be appointed by the President, by advice and consent of the Senate, and shall hold his office for four years, and every successor as shall be appointed and shall receive a salary of $4,000 a year. The commissioner shall collect upon the subject of labor, its relations, the hours of labor, and the earnings of men and women, and the means of procuring and distributing information on the subject of labor, its relations, the hours of labor, and the earnings of men and women, and the means of procuring and disposing of labor.

The Secretary of the Interior shall appoint an officer to receive a salary of $2,000 and such other employees as may be necessary for the reception of labor bureaus.

Provided, That the total number of employees shall not exceed the sum of $25,000 per annum. During the vacancy of the commissioner, or whenever he shall become vacancy, the chief clerk shall act as commissioner. The commissioner shall annually make a report in writing to the Interior Department, and contain such recommendations as may be deemed calculated to promote the interests of the bureau.

The following was adopted by the following:


The bill was then passed the Senate with dissenting votes, those of Colquitt, of Georgia, and Salisbury, of Delaware. The House non-concorded in the Senate amendment, and a conference committee was appointed, which decided to accept the bill as passed by the Senate, with the proviso that the Secretary of the Interior shall appoint a chief clerk who shall do so "as the recommendation of said commissioner." The report was agreed to, and the measure went to the President and was approved by him June 28.

Chinese Immigration—May 8, the House took up the bill amending the act approved May 6, 1882, to execute certain treaty stipulations relating to Chinese. The debate upon the measure in the House followed old lines, and brought out nothing new in thought or interest in oratory. The purpose and character of the measure were set forth by Mr. Rice, of Massachusetts, its leading opponent, as follows:

"In 1888 this country made a treaty with China under the lead of Anson Burlingame, of Massachusetts, whom some of us still remember with pride and affection. It was a treaty granting mutual privileges and rights to the inhabitants of the two countries. China, before that, had walked herself in from the rest of the world; but by friendly negotiations on our part, preceded by some acts of hospitality on the part of the European nations, that Chinese wall was broken down and this friendly treaty negotiated between this country and that. Under the operation of that treaty 100,000 Chinese men got into this country, and then arose the cry of alarm from the Pacific coast. Something must be done to protect the people of that coast from this immigration of yellow, non-voting laborers. They could bear the immigration of all others, but the yellow laborers, who have no votes, must not be admitted into the confines of the free republic, and an act was forced through Congress by the lead of some of these representatives from the Pacific coast, for whom I beg to say, I have the highest regard and consideration, which was vetoed by President Hayes because it was in violation of the Burlingame treaty which we had obtained from China.

"That veto of the President was accepted, but demand was made for some action, and subsequently a commission was sent by this Government to China, and a supplemental treaty was made with China by which some relief might be afforded to our friends upon the Pacific coast, and yet no violation to the treaty be committed—James B. Angell being the leading commissioner on the part of the United States. That supplemental treaty provided—what? It provided for a limited restriction of the immigration of whom? Of the Chinese laborers into this country; a limited restriction which should be reasonable.

"Only laborers are to be included in the limitations; and the second article of that supplemental treaty provides that all other Chinese subjects may still continue to come and go into

or his deputy and attested by his seal of such form as the Secretary of the Treasury may prescribe, which certificate shall contain a statement of the individual, family, and tribal name in occupation, when and where followed, of the laborer to whom the certificate is issued, and the seal and registry in all cases. The said laborer shall be required to furnish such certificate within six months from the date of his entry into the United States; if the said certificate is not furnished within the time prescribed, the said laborer shall be deemed guilty of a misdemeanor and shall be liable to a fine of $100. Any certificate not authenticated by said agent shall be deemed invalid.

Section 8 of said act is hereby amended so as to read as follows:

"Sec. 8. That the master of any vessel arriving in the United States from any foreign port or place shall at the time of his arrival under oath declare the number of Chinese passengers on board and the number of Chinese laborers on board, and shall certify to the collector of customs that he is in possession of a certificate of good character and of good conduct, issued by the collector of customs at the port or place of departure, and that such certificate is true; and if any such Chinese laborer, after having been required to furnish such certificate, shall leave such vessel without the consent of the collector of customs, the said laborer shall be liable to a fine of $100, and if such laborer shall return to such vessel before her departure, the said laborer shall be required to file with the collector of customs a statement of the facts and the certificate shall be null and void.

Section 9 of said act is hereby amended so as to read as follows:

"Sec. 9. That the master of any vessel arriving in the United States from any foreign port or place shall at the time of his arrival declare the number of Chinese passengers on board and the number of Chinese laborers on board, and shall certify to the collector of customs that he is in possession of a certificate of good character and of good conduct, issued by the collector of customs at the port or place of departure, and that such certificate is true; and if any such Chinese laborer, after having been required to furnish such certificate, shall leave such vessel without the consent of the collector of customs, the said laborer shall be liable to a fine of $100, and if such laborer shall return to such vessel before her departure, the said laborer shall be required to file with the collector of customs a statement of the facts and the certificate shall be null and void.

Section 10 of said act is hereby amended so as to read as follows:

"Sec. 10. That every vessel whose master shall knowingly violate any of the provisions of this act shall be deemed forfeited to the United States, and shall be liable to seizure and condemnation in any district of the United States into which such vessel may enter or come in which she may be found.

Section 11 of said act is hereby amended so as to read as follows:

"Sec. 11. That any person who shall bring into or cause to be brought into the United States by land, or shall aid or abet the landing in the United States from any vessel, of any Chinese person not lawfully entitled to enter the United States, shall be deemed guilty of a misdemeanor, and shall, on conviction thereof, be fined in a sum not exceeding $1,000, and imprisoned for a term not exceeding one year.

Section 12 of said act is hereby amended so as to read as follows:

"Sec. 12. That no Chinese person shall be permitted to enter the United States by land without producing to the proper officer of customs the certificate in this act required of Chinese persons seeking to land from a vessel. And any Chinese person found unlawfully within the United States shall be caused to be removed therefrom to the country from whence he came, and at the cost of the United States, after being brought before some justice, judge, or commissioner of a court of the United States in the county where he shall be found, or in case such Chinese person shall not be lawfully entitled to be or to remain in the United States; and in all such cases the person who brought or aided in bringing such person to the United States shall be liable to the Government of the United States for all necessary expenses incurred in such investigation and removal; and all peace officers of the several States and territories of the United States are hereby invested with the same authority as a marshal or United States marshal in reference to any case in which the provisions of this act or the act which this is amended are involved, as a marshal or deputy-marshall of the United States.
States, and shall be entitled to like compensation, to be audited and paid by the same officers. And the United States shall pay all costs and charges for the maintenance of any Chinese person having the certificate prescribed by law as attesting such Chinese person to come into the United States, who may not have been permitted to land from any vessel by reason of any of the provisions of this act.

Section 18 of said act is hereby amended so as to read as follows: "Sec. 18. That this act shall not apply to diplomatic and other officers of the Chinese or other governments traveling upon the business of that government whose credentials shall be taken as equivalent to the certificate in this act mentioned, and shall exempt them and their body and household servants from the provisions of this act as to other Chinese persons." Section 15 of said act is hereby amended so as to read as follows: "Sec. 15. That the provisions of this act shall apply to all subjects of China, and Chinese, whether subjects of China, or any other foreign power; and the words "Chinese laborers," wherever used in this act, shall be construed to mean both skilled and unskilled laborers and Chinese employed in mining."

Section 16. That any violation of any of the provisions of this act, or of the act of which this act is amendatory, the penalty of which is not otherwise herein provided for, shall be deemed a misdemeanor, and shall be punishable by a fine not exceeding $1000, or by imprisonment for not more than one year, or by both such fine and imprisonment.

Section 17. That nothing contained in this act shall be construed to affect any prosecution or other proceedings, criminal or civil, begun under the act of which this is amendatory; but such prosecution or other proceeding, criminal or civil, shall proceed as if this act had not been passed.

The vote in the House on this measure was as follows:


The bill passed the Senate without debate, July 8th, by the following vote:


The President approved the measure July 8, 1884.
WASHINGTON, S. S. Cox, W. B. Cox, Crisp, D. B. Cul-
more, Dempsey, Decatur, Dibble, DiBrell, Dockey, 
un, Eaton, Eldredge, H. J. Evins, Formey, Fran-
sson, Gla-cock, Greenleaf, Guenther, Hassell, 
man, Hancock, H. H. Hatch, W. H. Hatch, 
myer, A. H. Hewitt, G. W. Hewitt, Hill, Holman, 
ones, J. H. Jones, Klein, Lanham, Lover- 
owry, Lowry, McCullin, Matson, J. F. Miller, Mitchell, 
son, Morse, Muller, Murray, Neece, Osato, Ochli- 
, J. J. O'Neill, Pierce, S. W. Peal, Pest, Pryor, 
bin, J. H. Rogers, W. F. Rogers, Saney, Shaw, 
ageon, T. G. Skinner, Spriggs, Springr, Stevens, 
aries Stewart, Storm, Strait, C. A. Sumner, D. H. 
more, J. M. Taylor, Thompson, Throckmorton, 
, John Winans, G. D. Wise, Woldorf, Wood-
vard, Worton, Yale, York—II.

Navy.—G. E. Allison, Hayne, Boutilier, Brainerd, 
rown, J. M. Campbell, Collis, Converse, W. W. 
son, Cutcheon, Gabino, G. D. Davis, H. H. 
, Ellis, Folsom, L. E. Evans, Everhart, Finerty, 
, George, Hayze, T. J. Henderson, Holmes, 
, Howey, J. H., J. E. Johnson, J. T. Johnson, J. 
, Kean, Ketnahum, Lyman, McCord, McConnys, 
, Morrill, Nutting, Charles O'Neill, Parker, 
, F. Omitted, Poland, Price, G. W. Ray, 
, Rice, W. E. Robinson, Rockwell, Rosecrans, 
, E. Skinner, Sloan, Smith, Spooner, Steele, 
, Skipper, Stokely, J. E. Thomas, Todd, Tillman, 
, A. J. Warner, Washburn, J. D. White, Whit- 

Vessels.—Anderson, Atkinson, Barkes- 
, Barr, Belford, Belmont, Bennett, Bingham, Bis-
, Blackburn, Bland, Blount, Boyd, Boyle, Brei- 
, Broadhead, Brumr, Burleigh, Calkins, Cannon, 
son, Cassady, Chase, Clardy, Clay, Conolly, 
, Cutten, Curtin, Davidson, G. D. Davis, L. H. 
, Doraheimer, Dowd, Duncan, Ellis, Ermog-
, Feller, Fisher, Fiddley, Follaf, Foran, Ged-
, Gibson, Goff, Green, Greenh, Hardman, 
, Harley, Harmer, Hart, Hemphill, D. B. Hender-
, Hepburn, Herbert, Hinson, Hill, Holbitten, Hol-
, Hooper, Hopkins, Horn, Houseman, Lord, Hugh-
, J. J. Jones, J. T. Jones, Jordan, Keeler, Kei-
, Kellog, King, Lacey, Laird, Lamb, Lawrence, 
, Lewis, Libby, Long, Lure, McAdoo, Mo-
ack, McKinley, Mayberry, Millard, S. H. Miller, 
, Mills, Money, Morgen, Moulton, Mulrow, 
, Moore, Mussey, Mutchler, Nelson, Nias, O'Hara, Pail-
, Payne, Payson, Perkins, Peters, Phelps, Pote-
, Pasey, Randall, Railey, Osian Ray, Reagan, 
, Reine, Robertson, J. S. Robinson, Howell 
, Ryan, R. Scales, Raymond, Sheleley, Small, Shyr, 
, W. J. Stewart, Stockslager, Stubbe, Talbot, E. 
, Tucker, Valentine, Van Alstey, Wad- 
, Wakefield, Ward, Weaver, Mito White, Wil- 
, J. S. Wise, Wood, Young—142.

April 30, the Senate took up a measure, re-
port by the Committee on Commerce, to re-
other certain burden on the American mer-
and encourage the American foreign 
and, for other purposes. The 
the measure was adopted as identical with 
the first thirteen sections of the Senate bill, 
and for the rest the Senate substituted the re-
remaining sections of its own measure, sev-
elong which were also in the House bill. The 
the chief point of difference was that the free-
manship was stricken out. The usual disagree-
and conference followed, and June 21st the 
根底 committee reported, each side con-
particular points at issue. The report of 
the committee was concurred in by both 
without a division, and the bill was ap-
President and returned June 28. It is as follows: 
As it enacted, etc. That the last clause of 
313 of the Revised Statutes be amended so as to read as follows:

"All the officers of vessels of the United States shall be citizens of the United States, except in cases where, on a foreign voyage, or on a voyage from an
Atlantic to a Pacific port of the United States, or any such vessel is in any way derived from the service of an officer below the grade of master, his place, or a vacancy caused by the promotion of another officer to such place, may be supplied by a person not a citizen of the United States until the first return of such vessel to its home port; and such vessel shall not be liable to any penalty or penal tax for such employment of an alien officer.

Sec. 5. That section 4580 of the Revised Statutes be amended so as to read as follows:

"Sec. 4580. Upon the application of the master of any vessel to a consular officer to discharge a seaman, or upon the application of any seaman for his own discharge, if it appears to such officer that such seaman has completed his shipping agreement, or is entitled to his discharge under any act of Congress according to the general principles or usages of maritime law as recognized in the United States, such officer shall discharge said seaman, and require from the master of said vessel, before such discharge shall be made, payment for the time spent on board the said vessel; but no payment of extra wages shall be required by any consular officer upon such discharge of such seaman except as provided in this act."
CONGRESS, UNITED STATES.

(American Merchant Marine.)

x section for the recovery of such wages: Provided, That this section shall apply to whaling-vessels: And provided further, That it shall be lawful for any seaman to stipulate in his shipping agreement for an allotment of any portion of the wages which he may earn to his wife, mother, or other relative, but to no other person or corporation. And any person who shall falsely claim such relationship to any seaman in order to obtain wages so allotted shall, for every such offense, be punishable by a fine of not exceeding five hundred dollars or imprisonment not exceeding six months, at the discretion of the court. This section shall apply as well to foreign vessels as to vessels of the United States; and any foreign vessel the master, owner, consignee or agent of which has violated this section, or induced or connived at its violation, shall be liable for all damage from any port of the United States.

SEC. 11. That every vessel mentioned in section 4509 of the revised statutes, and the porting with a slop-chest, which shall contain a complement of clothing for the intended voyage for each seaman employed, including boots or shoes, hats or caps, underclothing and outer clothing, oiled clothing, and everything necessary for the wear of a seaman; also, a full supply of tobacco and snuff and from time to time, after such same shall be applied for, for his own use, at a profit not exceeding 10 per cent of the reasonable wholesale value of the same at the port at which the voyage commenced. And if any such vessel is not provided, before sailing, as herein required, the owner shall be liable to a penalty of not more than two hundred dollars. The provisions of this section shall not apply to vessels plying between the United States and the dominion of Canada, the Hawaiian Islands, the Bermuda Islands, the West Indies, Mexico, and Central America.

SEC. 12. That on and after July 1, 1884, no fees shall be charged or collected by any consular officer for the official services to American vessels and seamen. Consular officers shall furnish the master of every such vessel with a certified statement of such services performed on account of said vessel, with a statement of all fees prescribed for by such services, and make a detailed report to the Secretary of the Treasury regarding such services and fees under such regulations as the Secretary of State may prescribe; and the Secretary of the Treasury shall allow consular officers who are paid in whole or in part by fees such compensation as is herein prescribed, and a sum sufficient for the payment of such compensation, when thus adjusted by the Secretary of the Treasury, is hereby appropriated for the use of officers so appointed; and the Senate agree to the same.

SEC. 13. That section 4218 of the Revised Statutes be amended so as to read as follows:

"SEC. 4218. It shall be the duty of all masters of vessels, before sailing, to certify to the Secretary of the Treasury whether such statement is correct, to furnish it to the collector of the district in which such vessels shall first arrive in the United States; and if any such master of a vessel shall fail to furnish such statement he shall be liable to a fine of not exceeding fifty dollars, unless such master shall state under oath that no such statement was furnished him by said collector off-scents. And it shall be the duty of every collector to forward to the Secretary of the Treasury all such statements as shall have been furnished to him or as required by the Secretary of the Treasury to the collector of all other ports of the United States, giving the dates of the certificates and the names of the persons for whom and of the consular officer by whom the same were certified."

SEC. 14. That in lieu of the tax on tonnage of thirty cents per ton per annum hereinafter imposed by law, a duty of three cents per ton or at the rate of seven cents for vessels, of fifteen cents per ton in any one year, is hereby imposed at each entry upon all vessels which shall be entered in any port of the United States, or at any place in North America, Central America, the West Indies, the Bahamas, the Bermudas, or the Sandwich Islands or Newfoundland; and a duty of six cents per ton, not to exceed thirty cents per ton per annum, is hereby imposed at each entry upon all vessels entered in any port of the United States from any other foreign ports: Provided, That the President of the United States shall suspend the collection of such duties in the foreign ports of Asia, Africa, the North and South American, and Central America, down to and including Aspinwall and Panama, as may be in excess of the tonnage and lighthouse dues, or other equivalent tax or taxes imposed on American vessels by the government of the foreign country in which such port is situated, and shall make and publish the passage of the President of the United States through the ports to which such suspension shall apply, and the rate or rates of tonnage duty, if any, to be collected under such suspension: And provided further, That all vessels which have paid the tonnage-tax imposed by section 4519 of the Revised Statutes for the current year shall not be liable to the tax herein levied until the expiration of the certificate of last payment of the said tax. And sections 4518 and 4521 of section 4519 of the Revised Statutes as conflicts with this section, are hereby repealed.

SEC. 15. Sections 4508, 4509, and 4510 of the Revised Statutes, and all other acts and parts of acts providing for the assessment and collection of a hospital-tax for seamen, are hereby repealed; provided, that the expenses of maintaining the Marine-Hospital Service shall hereafter be borne by the United States out of the receipts for duties on tonnage provided for by this act, and so much thereof as may be necessary is hereby appropriated for that purpose.

SEC. 16. All articles of foreign production needed, and actually withdrawn from bonded warehouses, for supplies, not including equipment, of vessels of the United States engaged in the trade between the Pacific and Atlantic ports of the United States, may be so withdrawn free of duty, under such regulations as the Secretary of the Treasury may prescribe.

SEC. 17. When a vessel is built in the United States for foreign account, wholly or in part, its materials, to be ascertained under such regulations as may be prescribed by the Secretary of the Treasury, ten per cent. of the amount of such duty as allowed shall, however, be retained for the use of the United States by the collector paying the same.

SEC. 18. That the individual liability of a shipowner shall be limited to the proportion of any and all debts and liabilities that his individual share of the vessel beorn to the whole; and the aggregate liabilities of all the owners of a vessel on account of the same shall not exceed the value of such vessel and freight pending: Provided, That this provision shall not affect the liability of any owner incurred previous to the passage of this act, nor prevent any claimant from joining all the owners in one action; nor shall the same apply to wages due to persons employed by said ship-owners, or to the proceeds of all port charges, or to the proceeds of any and all certificates of provision or of any and all consignee."
States, in the manner provided by law, to serve on a voyage to any port, or for the round trip from and to the port of departure, or for a definite time, whatever the destination. The master of a vessel making regular and stated trips between the United States and a foreign country may engage a seaman for one or more round trips, or for a definite time, or on the return of said vessel to the United States may reship such seaman for another voyage in the same vessel, in the manner provided by law, without the payment of additional fees to any officer for such reengagement or re-employment.

Sec. 20. That every master of a vessel in the foreign trade may engage any seaman at any port out of the United States, in the manner provided by law, to serve for one or more round trips from and to the port of departure, or for a definite time, whatever the destination; and the master of a vessel clearing from a port of the United States for a voyage to any port in foreign waters, or for the round trip from and to the port of departure, or for a definite time, whatever the destination, may engage, for such voyage or time, such number of seamen as required by law; and nothing herein shall prevent the Master of said vessel from engaging, from office or otherwise, any number of seamen as required by section 4756 of the Revised Statutes, to produce said seamen before a boarding officer on the return of said vessel to the United States.

Sec. 21. That the word "port" as used in sections 4178 and 4884 of the Revised Statutes, in reference to the port of entry and the port of departure of every registered vessel, implies that every registered vessel of the United States or any licensed vessel of the stern of such vessel, shall be construed to mean either the port where the vessel is registered or registered for, or the port in the same district where the vessel was built or where one or more of the owners reside.

Sec. 22. That all the provisions of the sections 378, of the laws of 1838, shall be made applicable to passengers coming into the United States by land, as well as by water, and that all provisions shall not apply to passengers coming by vessels employed exclusively in the trade between the ports of the United States and the ports of the Dominions of Canada or the ports of Mexico.

Sec. 23. That sections 3976 and 4803 of the Revised Statutes of the United States, and all other compulsory laws and parts of laws that oblige American vessels to carry the mails to and from the United States, and the ports of the Dominions of Canada, and the ports of Mexico, shall be amended by striking out the words "propelled in whole or in part by steam," so that said section as amended shall read as follows: "Sec. 3976. When merchandise shall be imported into any port of the United States from any foreign country in vessels not being by the bills of lading that the merchandise so imported is to be delivered immediately after the entry of the vessel, the collector of such port may take possession of such merchandise and deposit the same in bonded warehouse; and when it does not appear by the bills of lading that the merchandise so imported is to be immediately delivered, the collector of the customs may take possession of the same and deposit it in bonded warehouses, at the request of the master, owner, or consignee of the vessel, on three days notice to such collector after the entry of the vessel."
of Navigation.—April 21, 1884, the Senate on American ship-building and navigation adopted the following bill for a bureau of navigation, under the immediate charge of the Secretary of the Treasury, which was passed by a vote of 168 yeas to 47 nays:

That there shall be in the Department of the Treasury a bureau of navigation, under the immediate charge of the Secretary of the Treasury, and a commissioner of navigation, under the immediate charge of the Bureau of Navigation, to have charge of all matters relating to the navigation of the United States, including:

1. The inspection and measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

2. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

3. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

4. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

5. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

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9. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

10. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

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13. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

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19. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

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24. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

25. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

26. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

27. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

28. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

29. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

30. The supervision of all matters relating to the measurement of vessels of the United States, including all matters relating to the measurement of vessels of the United States, and the enforcement of the laws relating to the measurement of vessels of the United States.

The bill passed the Senate July 4, and was approved by the President July 6, 1884.

The Tariff Bill.—No measure proposed during the session occupied so much of public attention, or was considered of so much political significance, as the bill "to reduce import duties and war taxes," reported by Mr. Morrison, of Illinois, from the Ways and Means Committee of the House, March 11. It was as follows:

Be it enacted, etc. That on and after the first day of July, eighteen hundred and eighty-four, in lieu of duties and rates of duty imposed by law on the importation of goods, wares, and merchandise mentioned in the several schedules of "An act to reduce internal revenue taxation and for other purposes" approved March third, eighteen hundred and eighty-three, and hereinafter enumerated, there shall be levied, collected, and paid the following rates of duty upon said articles severally, that is to say:

On all articles mentioned in Schedule I, cotton and cotton goods, eighty per centum of the several duties and rates of duty now imposed on said articles severally; and none of the above cotton goods shall pay a higher rate of duty than forty per centum ad valorem.
On all the articles mentioned in Schedule J, hemp, jute, and flax goods, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule K, wool and woollens, eighty per centum of the several duties and rates of duty now imposed on said articles severally; and none of the above woods and woollens shall pay a higher rate of duty than sixty per centum ad valorem.

On all the articles mentioned in Schedule C, metals, eighty per centum of the several duties and rates of duty now imposed on said articles severally; and none of the articles mentioned in said Schedule C, metals, shall pay a higher rate of duty than fifty per centum ad valorem.

On all the articles mentioned in Schedule M, books, papers, etc., eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule E, sugar, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule F, tobacco, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule D, wood and wooden-ware, except as hereinafter provided, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On cast, polished plate-glass, unlavished, exceeding twenty-four by sixty inches square; on green and colored glass bottles, vials, demijohns, and carboys (covered or uncovered), pickle- or preserve-jars, and other plain, molded, or pressed, green and colored bottle-glass, not cut, engraved, or painted, and not specially enumerated or provided for in this act, and on all the articles subject to ad valorem duty in Schedule B, earthenware and glassware, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule G, provisions, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule N, sundries, other than precious stones, salt, coal, and linseed or flaxseed, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule A, chemical products, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule B, earthenware and glassware, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule G, provisions, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

On all the articles mentioned in Schedule F, tobacco, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

Provided, That nothing in this act shall operate to reduce the duty above imposed on any article below the rate at which said article was dutiable under the laws of the United States at the time this act shall become law, nor to authorize a loan, to regulate and fix the duties on imports, and for other purposes, approved March second, eighteen hundred and sixty-one, commonly called the Morrill tariff. And when under existing law any of said articles are grouped together and made dutiable at one rate, then nothing in this act shall operate to reduce the duty below the highest rate at which any article in such group was dutiable under said act of March second, eighteen hundred and sixty-one.

Sec. 2. That on and after the first day of July, eighteen hundred and eighty-four, two hundred and eighty-six, all of the duties hereofere imposed on the goods, wares, and merchandise hereinafter in this section specified, there shall be levied, collected, and paid, the following rates of duty upon said articles severally; that is to say: on all unpolished cylinder, crown, and common window-glass; on iron or steel sheets or plates, or tappers' iron coated with tin or lead, or with mixtures of which these metals are a component part, by dipping or drawing; on tin-plates, terne-plates, and tappers' tin; and on linseed or flaxseed, eighty per centum of the several duties and rates of duty now imposed on said articles severally.

Provided, That on and after the first day of January, eighteen hundred and eighty-four, in addition to the duties now exempt from duty, the articles and described in this section, when imported except from duty, that is to say:

Salt in bags, sacks, barrels, or other pack bulk.

Coal, slack or culm.

Coal, bituminous or shale.

Provided, That this shall not apply to coal sent from the Dominion of Canada until the amount shall have exempted from the payment all coal imported into that country from the United States.

Timber, hewed and sawed, and timber use and in building wharves.

Timber, hewed, sawed, or felled, not specially enumerated and provided for in this act.

Sawed boards, planks, deals, and other heretofore called the duties and rates of duty now imposed on said articles severally.

Provided, That nothing in this act shall operate to reduce the duty above imposed on any article below the rate at which said article was dutiable under the laws of the United States at the time this act shall become law, nor to authorize a loan, to regulate and fix the duties on imports, and for other purposes, approved March second, eighteen hundred and sixty-one, commonly called the Morrill tariff. And when under existing law any of said articles are grouped together and made dutiable at one rate, then nothing in this act shall operate to reduce the duty below the highest rate at which any article in such group was dutiable under said act of March second, eighteen hundred and sixty-one.

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Provided, That on and after the first day of January, eighteen hundred and eighty-four, in addition to the duties now exempt from duty, the articles and described in this section, when imported except from duty, that is to say:

Salt in bags, sacks, barrels, or other pack bulk.

Coal, slack or culm.
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so narrow an escape, there was but an adequacy for the passage of the bill, yet sure was debated in the House at great and many members delivered carefully speeches for and against a protective and presented curious and elaborate regard to the effect of a protective on rates of wages, and upon the growth industrial interests. There was nothing forward touching the general prudently, though the records of the debate as an arsenal of illustrations should issue become a subject of general discussion. General debate in the house of the Whole closed May 6th, and motion of Mr. Converse, of Ohio, it was by a vote of 186 years to 151 nays, that ring clause be stricken out of the bill. The House was called upon to approve the action of the committee, the years 185 and the nays 155, and the measure by the following vote: G. E. Adams, Anderson, Arnot, Atkinson, A. B. Bisdorf, Blossom, Bostick, Bowen, Sibley, John L. Cannon, Cannon, Chace, Converse, W. W. Culbertson, Cullen, Car-


and consent of the Senate, to appoint Fitz-John Porter, late a major-general of the United States Volunteers and a brevet brigadier-general and colonel of the Army, to the position of colonel in the Army of the United States, of the same grade and rank, together with all the rights, titles, and privileges held by him at the time of his dismissal from the Army by sentence of court-martial pronounced Jan. 27, 1863, and, in his discretion, to place him on the retired list of the Army as of that grade, the retired list being thereby increased in number to that extent; and all laws and parts of laws in conflict herewith are suspended for this purpose only; but this act shall not be construed as authorizing pay, compensation, or allowance prior to appointment under it.

The usual arimonious debate followed. Perhaps the most interesting thing in the discussion in the House was the illustration drawn from the career of Gen. Sherman by Mr. Sloum, who had charge of the bill. Alluding to the love of the soldiers of the Fifth Corps for Porter, and the ability of soldiers to estimate the character of a general, he said of the closing incidents of Sherman's most celebrated campaign:

"On the day after we left Raleigh on the march toward Richmond, large packages of New York papers were brought to our camps for sale. Without orders from their officers, the soldiers speedily suppressed and destroyed them. An intelligent soldier of my command explained the acts of his associates. He said:

"These papers are teeming with abuse of Gen. Sherman, charging him with insubordination, a violation of the laws of war, and of them even insinuating that he is disloyal—all on account of his treaty with Gen. Johnston. We do not intend to have these slanders against the man we have followed so many hundreds of miles circulated among the boys."

"I felt that these men better appreciated the merits of their commander than did some of the authorities in Washington. Just before we arrived at Richmond, another batch of New York papers came to our camps, announcing that a new department had been created—the Department of the James; that Gen. Halleck had been assigned to the command, and ordered Generals Meade, Sheridan, and Wright to invade that part of North Carolina occupied by Sherman, and disregard his truce with Gen. Johnston, and pay no attention to his (Sherman's) orders. In my presence Sherman declared that, if an attempt had been made to execute that order, he would have defended his truce if it had cost the lives of half his command. I was with him when he received a note from Gen. Halleck, asking to be allowed to review the army as it passed through the streets of Richmond, and I saw him write a reply, saying, that so far from giving him a review, he deemed it his duty to say that it would be unsafe for Gen. Halleck to be seen in the streets."

"I stood beside Gen. Sherman on the grand stand at the other end of this avenue when the armies of the Union, in the presence of all the chief civil officers of the Government and the representatives of all foreign countries with whom we have diplomatic relations, were being reviewed; and I saw Gen. Sherman, in the face of this vast concourse, refuse the present hand of the officer of the Government who, in the closing days of brilliant services in the field, had brought so much undeserved reproach on him; and I honored him for it. A most cruel and defenseless attempt had been made to rob him of his hard-earned reputation.

"But it may be said, Why reprove to these painful events, now that some of the chief actors in them are in their graves? I have a purpose in it. First, I wish to make it apparent to every member of this House that in the best and excitement of a civil war the purest and ablest officer is liable to be stricken down without cause."

"At the close of the war one wing of Sherman's army was commanded by Gen. Logan and the other by myself. I wish to remind the old soldiers of that army that the very weapons used to strike down Porter were wielded by the same hands against Sherman; and it is my firm conviction that had not the war been brought to a successful close immediately after Sherman's treaty with Johnston, an attempt would have been made to place his name side by side with that of Fitz-John Porter, and instead of commanding the army, eighteen years after the war, and then retiring with the love and admiration of a grateful people, he might to-day have been vainly pleading at the doors of Congress for a rehearing of his case, pleading his previous good character, his great services to his country, and the best and passion of the hour when the cruel verdict was rendered against him, precisely as Porter is now doing."

The measure passed the House February 1. by the following vote:

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Warner, Wellborn, Weller, Wemple, mas, Willis, W. L. Wilson, E. B. Wi-
y, Wolford, Wood, Woodward, Worth-
york, Young—184.

Adams, Anderson, Atkinson, Barn-
le, Brainard, Breitung, F. B. Brewer,
M. Browne, Brumm, Calkins, J. M.
on, Converse, W. W. Colburn, Con-
, G. E. Davis, R. T. Davis, Dingley,
s, I. N. Evans, Goff, Guenther, H.
Hatch, J. H. Henderson, Hep-
Holmes, Hooper, Hopp, Houk, John-
ley, Lawrence, McColl, McCormick,
me, Payson, S. J. Peelle, Perkins,
, Price, Reed, J. S. Robinson, How-
me, Strait, Struble, E. B. Taylor, J.
mas, Wadsworth, Wakefield, Wash-
, White, White.—172.
-Aiken, Barkdale, Belford, Bi-
ren, W. W. Browne, Budd, Burnes,
d, Ermengroth, Everhart, Geddes,
and, Hancock, Hardman, Hardy, D.
Hatt, Hobbie, Holton, Howey, J. H.
Kelley, Kellogg, Ketchup, Libbey,
, Millard, S. H. Miller, Mills, Money,
, Charles O’Neill, Paige, Randall,
e, Shelley, Talbot, Valentine, Wait,
, White, James Wilson, John 
itle, the Committee on Military Af-
the following substitute for the
February 26:

ident be and he is hereby authorized
, by and with the advice and consent
to appoint Fitz-John Porter, late a
of the United States Volunteers and a
, a general and colonel of the Army,
to colonel in the Army of the United
same grade and rank held by him at
Jan. 17, 1865, and, in
place him on the retired list of the
grade, the retired list being thereby
, and all laws and
conflict heretofore suspended for
Provided, That said Fitz-John
were at or after his resignation, or al-
 prior to his appointment under this
was debated March 12 and 13,
the following vote:

Brown, Butler, Coll, Cockrell,
, Fair, Farley, Garland, Gilmore, Gor-
Hampton, Harris, Hoar, Jackson,
Florida, Jones of Nevada, Lamar,
ny, Morgan, Pendleton, Pike, Pugh,
, John, Sanbury, Sewell, Slater, Vance,
, Wilkes,—38.
, Allison, Blair, Bowen, Conger,
Delph, Edmunds, Frye, Harrison,
na, Logan, McMillan, Manderdon,
, Mitchell, Morrill, Palmer, Piatt,
aye, Wilson.—25.

Jones, Cameron of Wisconsin, George,
, Malone, Miller of New York, Plum,
, Vass.—15.

also adopted the preamble to the
fitch, the House non-concurred
; and, June 18, a
committee reported in favor of reced-
non-concurrence, and agreeing to

the measure as passed. This was done,
and the bill went to the President, who returned it,
July 2, with this veto message:

To the House of Representatives:

After careful consideration of the bill entitled "An
act for the relief of Fitz-John Porter," I herewith re-
turn it with my objections to that house of Congress
in which it originated. Its enacting clause is in terms
following: "That the President be and he is hereby
authorized to nominate and, and by and with the advice
and consent of the Senate, to appoint Fitz-John Port-
er, late a major-general of the United States
, and a brevet brigadier-general of the
Army, to the position of colonel in the Army of the
United States, of the same grade and rank held by
him at the time of his dismissal from the Army by
sentence of court-martial, promulgated January 27,
1863," etc.

It is apparent that should this bill become a law it
will create a new office, which can be filed by the
appointment of the particular individual whom it spe-
cifies, and can not be filled otherwise; nor may it be
said with perhaps greater precision of statement that
it will create a new office upon condition that the
particular person designated shall be necessarily
promoted. Such an act, as it seems to me, is either
unnecessary and ineffective, or it involves an encroachment
by the legislative branch of the Government upon
the executive authority of the President. As the Congress has no
power under the Constitution to nominate or appoint
an officer, and can not lawfully impose upon the
President the duty of nominating or appointing to
offices any particular individual of its own selection,
this bill, if it can fairly be construed as requiring the
President to make the nomination and, by and with
the advice and consent of the Senate, the appointment
which it authorizes, is in manifest violation of the
Constitution. If such be not its just interpretation,
it must be regarded as a mere enactment of advice
and counsel, which lacks in the very nature of things the
force of positive law, and can serve no useful purpose
upon the statute-books.

There are other causes that deter me from giving
this bill the sanction of my approval. The judgment of
the court-martial by which more than twenty years
since General Fitz-John Porter was tried and con-
victed was pronounced by a tribunal composed of
nine general officers of distinguished character and
ability. Its investigation of the charges of which it
found the accused guilty was thorough and consci-
cious, and its findings and sentence were, in due
course of law approved by Abraham Lincoln, then
President of the United States. Its legal competency,
its jurisdicition of the accused and of the said
accusation, and the substantial regularity of all of
its proceedings, are matters which have never been
brought in question. Its judgment, therefore, is final
and conclusive in its character.

The Supreme Court of the United States has recently
declared that a court-martial such as this was, is the
organism provided by law and clothed with the duty
of administering justice in this class of cases. Its
judgments, when approved, rest on the same basis,
and are surrounded by the same considerations which
give conclusiveness to the judgments of other legal
tribunals, including as well the lowest as the highest.
It follows, accordingly, that when a lawfully consti-
tuted court-martial has duly declared its findings and
sentence, and the same have been approved,
the President nor the Congress has any power
to set them aside. The existence of such power is not
openly asserted, nor perhaps if it is necessarily implied,
in the provisions of the bill which is before me, but,
when its enacting clauses are read in the light of the
provisions of its preamble, it will be seen that it seeks
effect the practical annulment of the findings and
the sentence of a competent court-martial.

A conclusion at variance with these findings has
been reached, after investigation by a board consisting
of three officers of the Army. This board was not created by any statute or by any act of Congress, and it is powerless to compel the attendance of witnesses or to pronounce a judgment which could have been lawfully entered. The officers who constituted the board, in their report to the Secretary of War, dated March 19, 1872, state that in their opinion "justice requires...that such an act as may be necessary to annul and set aside the findings and sentences of the court-martial in the case of Major-General Fitz-John Porter, and to restore him to the position of which that sentence deprived him," such restoration to take effect from the date of his dismissal from the service.

The provisions of the act are, therefore, under consideration are avowedly based on the assumption that the findings of the court-martial have been discovered to be erroneous, and it is not in my opinion that the investigation which is claimed to have resulted in this discovery was made many years after the events to which the alleged court-martial was referred, and under circumstances that made it impossible to reproduce the evidence on which they were based.

It seems to me that the proposed legislation would establish a dangerous precedent, calculated to imperil in no small measure the binding force and effect of the judgments of the various courts established under our Constitution and laws.

I have already, in the exercise of the pardoning power with which the President is vested by the Constitution, remitted the continuing penalty which had been imposed by the court-martial for Fitz-John Porter to hold any office of trust or profit under the Government of the United States. But I am unwilling to give my sanction to any legislation on which shall practically annul and set at naught the solemn and deliberate conclusions of the tribunal by which he was convicted, and of which the findings were examined and approved.

CHESTER A. ARTHUR.

EXECUTIVE MANSION, July 3, 1884.

The House, on reconsideration, passed the bill over the veto by the following vote:


In the Senate, on reconsideration, the meas- ure did not receive the requisite two-thirds majority, and did not become a law. The fol- lowing was the vote:


Amend—Anthony, Cameron, Colquitt, Cutting, Eyre, Gibson, Gorman, Jackson, Jones of Nevada Kenna, Lamar, McPherson, Mahone, Manderon Miller of California, Pendleton, Eddleberger, Saltz- Saulsbury, Slater, Walker, Williams—22.

Repeal of the Test-Oath.—Jan. 21, 1884, Mr. Cox, of New York, moved in the House to sus- pend the rules, and pass the bill to repeal the act of July 2, 1862, and some sections of the Re- vised Statutes of the United States, repealing the oath previously prescribed in said act. The following is the bill:

Be it enacted, etc., That the set of Congress enti- tled "An act to prescribe an oath of office, and for other purposes," and so much of the provisions of section 1756 of the Revised Statutes of the United States, as ob- jective thereof which provide for the en- forcement of the provisions of said act of July 2, 1862, be and the same are hereby repealed; and that no person hereafter shall be required to take the oath therein prescribed as a condition precedent to its holding of any office, or to serve as a juror, or the requirement of any right under the laws of the United States.

In support of the measure, Mr. Cox said "When we stand in a semicircle before the Speaker, to be sworn, there are two class of members sworn. One class takes the oath prescribed by the Constitution—with a shudder. The other takes the oath known as iron-clad. The latter is the disqualifying- test oath. It tests the fidelity of the affix during the civil war, as to aiding, abetting,
CONGRESS, UNITED STATES. (Repeal of the Test-Oath.) 209

countenance, counsel, encouragement, of those engaged in armed hostility to the
United States. It also teaches the fidelity of the
as to the acceptance of office, or the ex-
of the functions of any office whatever.
With permission, I place the oaths re-
of us, or what should be required, in
section, that:

ask of bad rebel who did not support, etc., the

Bad oath of good patriot who did support, etc., the

sincerely swear that
support, protect, and
the Constitution
equipment of the
States against all
ars, whether domestic,
and that I
true faith and
the same;
ake this obligation
without any
or evasion;
I will faithfully
all the duties
be required
law: So help me

national oath, as it
ought to be.

ar to support the
ation of the United
So help me God.

as of the ridiculous features of these two
oaths is, that it forces a person to
that while he is taking the oath he is
wearing himself, that he has no men-
terest, that he is playing no sleights
conscience, no stilem-rig with words,
ears that he is not lying; while the
as yet supposed by some to be, or has
been, obnoxious to our laws, judged by
test-oath, swears the lovely oath of
r. The difference between these oaths is
st. In my judgment, the only constitu-
that ought to be is: 'I swear to
the Constitution of the United States
me God!' (Article VI, section 3).

in oath would be applicable to us all.
would then be no two classes of men,
sly sworn, yet sitting side by side as

I this bill proposes is to repeal the act of

July 3, 1862, and such sections of the Revised
Statutes of the United States as perpetuate
the oath prescribed in said act, which is the 'iron-
clad' oath. It thus makes all the oaths taken
in this chamber like the one first referred to.
It may not be known, but it is true, that this
long test-oath was repealed by the act of
April 29, 1871. It was never re-enacted, except
in the Revised Statutes and by indirection, though
the act of June 22, 1874, makes this, and all
other revised acts, the law of the land.

In opposition to the measure Mr. Boutelle,
of Maine, said: "We hear a great deal said in
deprecation of exciting sectional animosities,
and reviving sectional issues. I ask the
gentleman from New York why he brings this
sectional question in here to-day? We are liv-
ing, sir, under a law in regard to our oaths
which was adopted many years ago; a law
which was supported by the gentleman from
New York himself. I know of no reason what-
ever, I can understand no special cause for ar-
resting the proceedings of this body to change
the nature of the obligation which is assumed
by the representatives of the people upon en-
tering on their duties here. The gentleman
says we ought not to have two oaths here.
I want to say to him that we are not responsible
for the fact that two oaths are required.
I want to say to him that the loyal people of
this country are not responsible for the fact
that gentlemen on the one side or the other of
this House are unable, unfortunately, to take
that oath which I believe men should, under
ordinary circumstances, be required to take
before entering upon the legislative duties of a
body like this, an oath that they had never at-
tempted to destroy the government of their
country.

"I understand perfectly well, Mr. Speaker,
that we have had peculiar experience in this
country. I understand perfectly well that we
have modified the ordinary procedure we do
not undertake to question the validity of the
seating of any member upon this floor. I do
not undertake to cast any reflection upon any
gentleman who is unable to take the iron-clad
oath in this body. But when we are informed
that there is an impropriety, or a hardship, or
a lack of genuineness in insisting that the oath
of loyalty shall stand, for those who choose to
take it, I think we are going faster than the
country calls for."

The discussion was very brief, and the rules
were suspended and the bill passed by a vote
of 188 to 14. February 27, in the Senate,
the bill was reported back by the Judiciary
Committee, to which it had been referred, with an
amendment striking out everything after the
enacting clause, and substituting the follow-
ing:

That section 1218 of the Revised Statutes of
the United States be and is hereby amended so as to read
as follows:

"Sec. 1218. No person who held a commission in
the Army or Navy of the United States at the begin-
ing of the late rebellion, and afterward served in

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any capacity in the military, naval, or civil service of the United States, or of either of the States in insurrection during the late rebellion, shall be appointed to any position in the Army or Navy of the United States."

Sect. 2. That section 1756 of the Revised Statutes be and the same is hereby repealed; and hereafter the oath to be taken by any person elected or appointed to any office of honor or profit, either in the civil, military, or naval service, except the President of the United States, shall be as prescribed in section 1757 of the Revised Statutes. But this repeal shall not affect the oaths prescribed by existing statutes in relation to the performance of duties in special or particular subordinate offices and employments.

Sect. 3. That the provisions of this act shall in no manner affect any right, duty, claim, obligation, or penalty now existing, or already incurred; and all and every such right, duty, claim, obligation, and penalty shall be heard, tried, and determined, and effect shall be given thereto, in the same manner as if this act had not been passed.

Sect. 4. The result of the same shall be that the President of the Senate, who shall thereupon pronounce the state of the vote, and the name of the person, if any, whose name was stricken from the list of the electors, having been ascertained and recorded, shall announce the election of the persons elected as President and Vice-President of the United States, and, together with a list of the votes cast and the election of the persons elected on the journals of the two houses. And reading of any such certificate or paper, the President of the Senate shall call for objections, if any; objection shall be made in writing, and shall be clearly and concisely, and without argument, ground thereof, and shall be signed by at least one Senator and one member of the House of Representatives before the same shall be received. What objections so made to any vote or paper from any State shall have been received and read, the Senate thereupon withdraw, and such objections submitted to the Senate for its decision; a Speaker of the House of Representatives shall mark the same, and such objections to the House representatives for its decision; and no electoral votes from any State from which one or more of the votes have been rejected shall be counted.

Count of the Electoral Vote.—The Senate took up this important matter Jan. 16, 1884, and the bill reported by Mr. Hoar of Massachusetts, from the Committee on Privileges and Elections, was passed without a division. It is entitled "A bill to fix the day for the meeting of the electoral tribunals, and to provide for and regulate the counting of the votes for President and Vice-President, and the decision of the questions arising thereon."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the electors of each State shall meet and give their votes on the second Monday in January next, in the city or town where the seat of government of such State is located, in the State House or other public building in which the legislature of such State shall direct.

Sect. 2. That each State may, pursuant to its laws existing on the day fixed for the appointment of the electors, try and determine, at least six days before the time fixed for the meeting of the electors, any controversy concerning their appointment or the appointment of any of them. Every such determination made thereon shall be signed by the electors, and delivered to the Governor of the State, who shall, on or before the day on which the two Houses, acting separately, shall meet, cause the same to be transmitted to the President of the Senate and the Speaker of the House of Representatives, who shall immediately transmit the same to the President of the Senate and the Speaker of the House of Representatives, respectively, for their consideration and action.

Sect. 3. That it shall be the duty of the Executive of each State to cause three lists of the names of the electors of such State, duly ascertained according to the laws of the State, to be made, to be certified, and to be delivered to the President of the Senate and the Speaker of the House of Representatives, as soon as may be after such final determination shall be had, to the electors, and before the day on which they shall be required by law to have the ballots to be counted. The Senate and the House of Representatives shall meet in the hall of the Senate at the hour of one o'clock in the afternoon on that day, and the President of the Senate shall be their presidential officer. Two tellers previously appointed on the part of the Senate, and two on the part of the House of Representatives, whom shall be named, as they are opened, President of the Senate, and to canvass the votes of those persons elected President and Vice-President of the United States, and, and together with a list of the votes cast and the election of the persons elected on the journals of the two houses. And reading of any such certificate or paper, the President of the Senate shall call for objections, if any; objection shall be made in writing, and shall be clearly and concisely, and without argument, ground thereof, and shall be signed by at least one Senator and one member of the House of Representatives before the same shall be received. What objections so made to any vote or paper from any State shall have been received and read, the Senate thereupon withdraw, and such objections submitted to the Senate for its decision; a Speaker of the House of Representatives shall mark the same, and such objections to the House representatives for its decision; and no electoral votes from any State from which one or more of the votes have been rejected shall be counted.
CINCINNATI, UNITED STATES.

COUNT OF THE ELECTORAL VOTE.

The votes shall be entered on the journals of the Senate and the House of Representatives; and the presiding officer of the joint convention shall proceed to count the same as may be, notify said persons of their election to said offices of President and Vice-President; and if upon the call of a State no objection is made to the returns, then the vote thereof shall be counted and added to the list of States whose votes are determined; but in case objection has been made, as hereinbefore provided, then said return shall be laid aside, to be proceeded with in the same manner as is hereinbefore provided for the case of a double return of votes from a State.

All objections to the counting of the vote of any State shall be made in writing and signed by at least three members of the joint convention, before the call of said State, said objections to be placed in the hands of the presiding officer of said joint convention, who shall present the same upon the call of the State. If more than one return or paper purporting to be a return from a State shall have been received by the President of the Senate, then and in that case the presiding officer of the joint convention shall submit to the members thereof the determination as to which is the proper return; and three hours shall be allowed for debate, and the joint convention shall then proceed to vote per capita, commencing with the State of Alabama; and those votes shall be counted and added to the list of votes already ascertained which a majority of the joint convention shall have been contained in the proper and legal return.

Sec. 4. That sections 185 and 143 of the Revised Statutes are hereby repealed.

Sec. 5. That at such joint convention of the two houses seats shall be provided as follows: For the President of the Senate, the Speaker immediately upon his left; the Senators, in the body of the hall not provided for Senators; for the tellers, Secretary of the Senate, and Clerk of the House of Representatives, at the Clerk's desk; for the other officers of the two houses, in front of the Clerk's desk and upon each side of the Speaker's platform. Such joint convention shall not be dissolved until the count of the electoral votes shall be completed and the result declared; and no recess shall be taken for a longer time than one calendar day; and upon the reassembling of the joint convention on Saturday after its first meeting, should the count and declaration of votes not have previously been announced, no further or other recess shall be had until the count of the electoral votes shall be completed and the result declared.

This substitute for the Senate measure was adopted by the House by the following vote.

June 12:


The measure then passed without a division, but as the Senate non-concurring in the House amendments and the conference committee appointed failed to agree, the bill fell by the way. Beginning the next Tuesday, February 29, the Senate passed by a vote of 89 to 15 a bill to provide for the construction of two cruisers, one dispatch-boat, two heavily armed gunboats, two gunboats, one cruising torpedo-boat, two harbor torpedoes, and three guns, at a cost not to exceed $3,500,000. This measure was not considered in the House, and when the naval appropriation bill came up from that body the Senate Committee on Appropriations, among other amendments, proposed the following:

To enable the President to strengthen the naval establishment of the United States the sum of $2,500,000 is hereby appropriated, to be expended as follows, and under the following limitations: For the construction of one cruiser of $4,000,000 displacement, one cruiser of 3,000 tons, one dispatch-boat of 1,500 tons, two heavy armed gunboats of 1,500 tons each, and one light gunboat of 750 tons, and one gunboat, not to exceed 900 tons, to be built on plans and specifications to be furnished by the Navy; and under his supervision and directions, subject to the approval of the Secretary of the Navy, two steel steamers, as recommended by the first naval advisory board, November 7, 1881; one cruising torpedo-boat, as recommended by the same board and by the present advisory board in May, 1882; and two of the harbor torpedo-boats recommended by said first board and in the report from the Bureau of Or of November 1, 1882, all of which are recounted in the annual report of the Secretary of the Navy, and, under existing law, it shall be the duty of the advisory board appointed in conformity with making appropriations for the naval service fiscal year ending June 30, 1883, and for other issues, approved August 8, 1883, to advise sec the Secretary of the Navy, in his office or else in all matters referred to them by his relative designs, models, plans, specifications, and or for said vessels in all their parts, and relative materials to be used therein and to the cost thereof, and especially relative to the harmonies, justments, respectively, of their hulls, machinery, armament; and they shall examine all materials used in said vessels, and inspect the work on it as it progresses, and have general supervision to the under the direction of said Secretary. But said shall have no power to make or enter into a contract nor to direct or control any officer of the the chief of any bureau of the Navy, or an act or act. Neither of these vessels hereby shall be built shall be contracted for or commence full and complete detail drawings and specifics thereof, nor construct or build, neither of these vessels, nor boilers, shall have or be provided or done the Navy Department, and shall have been approved and authorized by a majority of members thereof, and by the Secretary of the and after said drawings and specifications have been provided and by said Secretary, provided or done afore mentioned, and whenever the work has been commenced or a contract made or shall not be changed in any respect, the cost of such change shall be in the construction $500, except upon the approval of said board majority of the members thereof, in writing upon the written order of the Secretary of the and if changes are thus made, the actual cost and the damage caused thereby shall be assessed, estimated, and determined by said board; any contract made pursuant to this act shall be provided in the terms thereof that the contract be bound by the determination of said board majority thereof, as to the amount of the in or diminished compensation said contractor is entitled to receive, if any, in consequence of change or changes. And for the construction of which reason followed, and the amendments of the Secretary of the Navy shall invite proposals from all Ar ship-builders and builders of machinery, who shall show to the satisfaction of the Secretary of the that within three months from the date of contract their ship-yards will be equipped for b and repairing iron and steel steamers, and the constructors of marine engines, machinery, t and the Secretary of the Navy is authorized to direct said vessels and procure their extreme total cost for each, not exceeding the amount of the by the naval advisory board; and in that such vessels, or any of them, shall be b contract, such building shall be under contr the lowest and best responsible bidder or b made after at least sixty days' advertisement has appeared in the leading newspapers of the States, inviting proposals for constructing as above, subject to all such rules, regulations, sub- tendance, and provisions as to bids and secu the due completion of the work as the Secret of the Navy shall determine by law; and the bids shall be accepted unless completed in strict con with the contract, with the advice and assist the naval advisory board, in accordance with the provisions of the act of 1882, except as are hereby modified; a authority to construct the same shall amount to the the Navy; that the Secretary of the Navy may utilize the national navy-yards, with the use t and Non-use, Provided, That the Secretary of the Navy.
a thereof, as fully and to as great an extent as the
ce can be done with advantage to the Government.
the amendment was opposed as introducing in
the appropriation bill what should be in-
pendent legislation; but it was adopted April
by the following vote:
FAZ—Aldrich, Allison, Bowen, Butler, Cameron
Wisconsin; Douglass, Dophin; Frey, Garand, Hale,
Hawley, Hoar, Jones of Florida, Logan,
Millan, Miller of California, Mitchell, Morgan,
smith, Pike, Platt, Riddlerberger, Sabin, Sawyer,
ell, Wilson—27.
NAY—Bayard, Beck, Brown, Coke, Colquitt, Far
George, Groome, Hampton, Harris, Jackson, Mo
Morrison, Pugh, Rand, Samson, Slater, Vance, Van Wyck

Adams—Anthony, Blair, Call, Camden, Cameron
Pennsylvania; Cockrell, Cullom, Dawes, Edmands,
Gibson, Gorman, Hill, Ingalls, Jones of Nevada,
rn, Lamar, Lapham, Mahoan, Manderson, Maxey,
ller of New York, Palmer, Pendleton, Plumb,
ibury, Sherman, Vest, Voorhees, Walker, Will
—81.
The Senate passed the amended appropriat
bills the same day, and the House non-con
cred in the amendments, with the exception on
ment of new vessels. Two 
ence committees were appointed in suc
and both failed to come to any agree
so that the appropriation bill was
pleted. To remedy this failure, a bill was
ought forward in the House and passed July
aking temporary provision for the naval
The bill is as follows:
> Be it enacted, etc., That for the purpose of provid
for the expenses of the naval service for the six
s ending Dec. 31, 1884, there is hereby appro
out of any money in the Treasury not otherw
 appropriated one half, or 50 per cent., of the
ns of money and for like purposes, and continu
provisions relating thereto, as were appro
for the purposes of the fiscal year ending June
, 1884, by the act entitled "An act making app
ations for the naval service for the fiscal year end-
 June 30, 1884, and for other purposes," approved
ch 3, 1885, except as hereinafter declared, subject
the limitations and conditions in respect to the dis-
ements of the appropriations hereby made that
 imposed by said act and the other laws of the
 States upon or in respect to appropriations de
by said act: Provided, That nothing is appro
provisions of the act for special ocean-surveys and
publication thereof," or "for the purchase and
f, after full investigation and test in the
States, under the direction of the Secretary
the Navy, of torpedoes adapted to naval warfare or
right to manufacture the same," and for the fix
s and machinery necessary for operating the same.
The clause under the heading of "Bureau of
s and Docks," commencing "For general main
ess of yards and docks," is amended so as to ap
opriate for the six months herein provided the sun
116,000.
The heading of "Increase of the Navy" is
said act, in lieu of the paragraphs thereunder pre
the heading of "Naval Academy" there is en
the following:

For continuing work upon the three new steel
ers and one dispatch-boat authorized by act of
s approved March 8, 1883, as follows: Chicago
$240,143.45; Boston, $321,650.28; Atlantic, $320,
7; Dophin, $105,660; in all, $921,500; the four
-cannon of the Chicago to be mounted on Clark's
active single-gun turret or V-shields of the same
as is now allowed for the mounting and armor
section of the guns: Provided, That it shall not
change the contract entered into by the Government
for the construction of said vessels.
For completion of steam machinery and boilers,
with necessary fittings for sea-service of steel
ers and dispatch-boat, under contract with John
che, as per act approved March 3, 1883: United
States steel cruiser Chicago, $220,000; United
States steel cruiser Boston, $150,000; United
States steel cruiser Atlanta, $150,000; United
States dispatch-boat Dophin, $90,000; in all, $450,000. For completing
and outfit of three new cruisers and one dis-
ch-boat, now in course of construction, $78,000.
For navigation outfit of the four new steel
ers, $80,000. For ordnance outfit of the three new steel
ers and one dispatch-boat, $500,000.
Nothing herein contained shall be construed as ap-
propriating money for or authorizing the continu-
ation of work upon the double-turreted monitors Monad
ac, Terror, Amphitrite, and Puritan; and any un-
expended balance now remaining of the appro-
ations contained in said act, approved March 3, 1883,
for engines and machinery for the said double-tur-
reted monitors, shall be carried into the Treasury, ex-
cept such part thereof as may be required under ex-
isting contracts made for the engines and machine
of the three last-named monitors.

The Senate passed this measure the same
day, with an amendment, from which it reeded
on the non-concurrence of the House, and
July 7 the bill was returned with the approval of
the President.

Admissions of Territories as States—May 18, 1884,
The House of Representatives took up the con-
sideration of the following measure, as report-
red from the Committee on Territories:

Be it enacted, etc., That hereafter no Territory shall
form a constitution or apply for admission as a State
into the Union until it shall contain a permanent
population equal to that required in a congressional
district in order to entitle it to representation in the
House of Representatives.

The objections to the measure were put su-
cinctly by Mr. Ransom, of Iowa. He said:

There is one very serious objection, and, I
think, a very sufficient one, to this bill. It im-
poses one sort of restriction upon the future ac-
tion of Congress in admitting under a consti-
tution satisfactory to it any Territory as a State
into the Union. That can not bind Congress.
This bill goes on the theory that it is the duty
of Congress, and it attempts to bind the people.
My second objection is that it is wrong. It is
in spirit unconstititutional, inasmuch as it denies
to the people of a Territory the right to peti-
tion in its highest form. That highest form is
the assemblage of the people of a Territory of this
Union to consider their interests and de-
clare the conclusion they have come to in the
embodied form of a constitution, and to pre-
sent it to the Congress of a United States.
My great objection to the form in which the
bill provides for certain results is that it pro-
hibits the people, who are pro tanto sovereign
in the Territories, from embodying their rights in
the form of a constitution, and presenting it
here with their petition to be admitted as a
State of the Union."

The considerations in favor of the measure
were summed up in the short statement of Mr.
Pottor, of New York, who said:

"Mr. Speaker, I can not quite agree that this
CONGRESS, UNITED STATES: (LAND-GRAFT RAILROADS.)

bill will be utterly useless. I hope it will be of some use. I hope it may serve the purpose of announcing to the country that the Congress of the United States recognizes the injustice of longer pursuing a course which invites populations less than the ratio of representation for one member upon this floor to balance and control and negative, it may be, the policy of this great Union, if not in this at least in the other end of the Capitol. We have gone too far already in administering the Government in this particular; too far in denying the vast populations and vast interests of the great States their just influence and their equal share in proportion to their population. They should have an influence in this Government as far as possible under the Constitution equal to their population and importance.

"I think, sir, it is time to recognize in Congress, and to announce it from the Congress of the United States, that it is to be the policy of the country, at least so far as this particular Congress is concerned, that the great populations of the great States are not to be over-ridden and their just influence denied by admitting States on the frontiers with one Representative on this floor and two in the Senate, when they have scarcely population enough to make a respectable town in one of the older States. Look for a moment at the influence of these States in the other end of the Capitol as to the treaty-making power, and the power intended to be a portion of the appointing power of the Executive. I regret to say they have arrogated to themselves the power of controlling the executive functions and action of this Government.

The bill can do no harm in giving this notice to the Territories of the country. It simply says to them, 'You will not be admitted here as a State until, according to the judgment of Congress, you have a population sufficient to entitle you to one Representative on this floor.' To my mind any other course is monstrously unjust to the older States of the Union. I believe in the moral effect of the bill, and I would pass it if for no other purpose than to give this notice to the country."

The bill was passed by a vote of 109 yeas to 15 nays.

Clearance Fees of Domestic Vessels.—In the House, June 20, a bill to amend sections 4381 and 4389 of the Revised Statutes of the United States, relative to fees levied and collected from the owners and masters of vessels in domestic commerce, was brought forward and passed. It is as follows:

SEC. 1. That paragraphs numbered 6 and 7, respectively, of section numbered 4381, be and the same are hereby severally amended so as to read as follows:

"Sixth. For certifying manifest, including master's oath, and granting permit for vessel to go from district to district, ten cents.

"Seventh. For receiving a certified manifest and granting a permit on the arrival of such licensed vessel, ten cents."

Sec. 2. That paragraphs numbered 6 and 8 respectively, of section numbered 4389 of the Revised Statutes of the United States, be and the same are hereby amended so as to read as follows:

"Sixth. For certifying manifest, including master's oath, and granting permit for vessel to go from district to district, ten cents.

"Eighth. For receiving manifest, including master's oath, on arrival of a vessel from one district to another, whether touching at foreign intermediate ports or not, ten cents."

The bill passed the Senate July 3, and was approved by the President July 7.

Land-Grant Railroads.—Various bills forbidding land grants were considered. In the House a bill was passed January 31, entitled "An act declaring forfeited certain grants of land made to certain States in aid of the construction of railroads." The grants aimed at were made by the acts of Aug. 11, 1866, June 3, 1868, and March 3, 1857, and others of the same to Mississippi, Alabama, Arkansas, and Louisiana, to aid in the construction of certain State and interstate railways. The Senate took no action on the measure. The same day a bill was passed by the House declaring forfeited all unearned lands granted to the Texas Pacific Railroad by the act of March 3, 1871, and an amendatory thereof and supplementary thereto. The vote was 260 to 1 in favor of the measure but the Senate did not take it up. June 4,
House passed, by a vote of 139 to 26, a bill declaring forfeited the Oregon Central Railroad grant made by the act of May 4, 1870, passed "to aid in the construction of a railroad and telegraph line from Portland to Astoria and McKinneville, in the State of Oregon." The Senate let the measure severely alone. June 6, the House passed a bill declaring forfeited all unearned lands granted by the act of July 25, 1864, to aid in the construction of a railroad from the Central Pacific Railroad in California to Portland, Oregon. No action was taken by the Senate on the measure. June 20, the House passed a bill declaring forfeited all unearned lands granted by the act of May 13, 1864, to the State of Iowa, to aid in the construction of a railroad within its limits, and granted by the State Legislature to the Sioux City and St. Paul Railroad Company. The Senate let the bill sit out of sight. June 26, the House rejected, after a long debate, an act to repeal section 23 of the act to incorporate the Texas Pacific Railroad Company, approved March 3, 1871, and to declare forfeited the land grant made therein. The section gave to the New Orleans, Baton Rouge, and Vicksburg Railroad Company, chartered by the State of Louisiana, a right to connect with the eastern terminus of the Texas Pacific Railroad by the most eligible route, with right of way through the public lands and alternate sections of public lands in Louisiana, to the same extent per mile as granted by the act to the Texas Pacific in the State of California. There were measures introduced in the Senate for the forfeiture of the unearned lands granted to the Northern Pacific Railroad Company, but nothing was done with them. Both House and Senate passed, on June 7 and June 11 respectively, a bill for the forfeiture of all unearned lands granted to the Atlantic and Pacific Railroad by the act of July 27, 1866, except the right of way and lands for stations. The original grant was made "to aid in the construction of a railroad and telegraph line, and for a railroad and telegraph line, and for the purpose of extending the lines of the state and of the State of Missouri and Arkansas to the Pacific coast." The measure as passed by the House was amended in the Senate by the addition of provisions for the settlement of disputes as to title, and then passed; but the bill was not brought to completion.

June 18, the House passed a bill to amend an act entitled

"An act to aid in the construction of a railroad and telegraph line from the Missouri river to the Pacific Ocean, and to secure to the Government the use of the same for post, mail, and other purposes," approved July 1, 1862; also to amend an act approved May 7, 1864, both in amendment of said first-mentioned act.

After rectifying the failure of various subsidized railroad companies to fulfill their obligations, the bill enacted that the provisions of the Thurman sinking-fund act be extended to the Kansas Pacific Railroad Company, the Sioux City and Pacific Railroad Company, and the Central Branch of the Union Pacific Railroad; that the Secretary of the Treasury be allowed to invest the sinking fund in first-mortgage bonds of the various railroad companies or in United States securities; that there shall be carried to the credit of the sinking fund, on the first of February each year by the Central Pacific Railroad, an amount, variously made up, aggregating 55 per cent. of the net earnings of the road for the previous year; by the Union Pacific, an amount aggregating 35 per cent.; by the Kansas Pacific, amounts aggregating to 45 per cent.; by the Central Branch Union Pacific, amounts aggregating 35 per cent.; by the Sioux City, amounts aggregating 35 per cent.; that in cases where the residue of the net earnings is insufficient to pay the interest on obligations paramount to those of the United States, the Secretary of the Treasury remit sufficient of the amounts levied for the sinking fund to pay such interest; that on or before January, 1885, the Central Pacific pay into the sinking fund $5,000,000, the Union Pacific $5,000,000, the Kansas Pacific $5,000,000, the Sioux City $500,000, and the Central Branch $500,000, subject, however, to certain deductions for services rendered; that none of these roads shall pay a dividend at any time when it is behind-hand in its obligations to the United States, or its obligations on claims paramount to those of the United States, and, in case of any such payment, the dividend may be recovered by the United States from the stockholder who received it, and the directors who voted it shall be deemed guilty of a misdemeanor; that the sinking fund shall be used to redeem bonds of the United States issued in aid of the railroads, and, to pay off all lawful liens and mortgages in order of priority; that the sums required by the act to be paid shall be considered a lien upon the roads and their property; and that the failure of any of the railroad companies to comply with the terms of the act shall be considered, after the lapse of six months, a forfeiture of all its franchises derived from the United States. On this measure the Senate took no action.

The Public Lands.—January 21, Mr. Holman, of Indiana, brought forward in the House the following resolutions, moving the suspension of the rules for their passage:

Resolved, That in the judgment of this House all the public lands heretofore granted to States and corporations to aid in the construction of railroads, so far as the same are now subject to forfeiture by reason of the non-fulfillment of the conditions on which the grants were made, ought to be declared forfeited to the United States, and restored to the public domain.

Resolved, That it is of the highest public interest that the laws touching the public lands should be so framed and administered as to ultimately secure free-hold therein to the largest number of citizens; and that all laws facilitating speculation in the public lands, or authorizing or permitting the entry or purchase thereof in large bodies, ought to be repealed; and all of the public lands adapted to agriculture (subject to bounty grants, and those in aid of educa-
Resolved, That the Committee on the Public Lands is hereby instructed to report to the House bills to carry into effect the views expressed in the foregoing resolutions; that said committee shall be authorized to report such bills at any time, subject only to revenue and appropriation bills, and the same shall in like order be entitled to consideration.

In explanation of the resolutions Mr. Holman said: "Mr. Speaker, reading the report of the Commissioner of the General Land-Office, and of the Secretary of the Interior, both unusually valuable reports, can leave no gentleman uninformed of the fact that under the present state of the laws large bodies of public land are being secured by individual capitalists; and not by American citizens only, but by great capitalists of Europe. For that purpose mainly the pre-emption law is employed, and Congress has been urged repeatedly, both by the Commissioner of the General Land-Office and the Secretary of the Interior, to repeal that law, upon the ground that, through its instrumentality and the facilities for fraud furnished, countless frauds are being perpetrated, and capitalists are securing enormous tracts of the public domain, to the detriment of the country, and injury of actual settlers. That law in former years, when capital was not seeking investments in public lands, was a wholesome provision, but now it is a shelter for fraud, and an agent of land monopoly.

"So, Mr. Speaker, without entering upon any general discussion, in the few moments at my disposal, of the public-land system of the country, I need only refer to the administration of that single law to answer the question I am asked. It is absolutely certain that under your land system vast private estates are being created out of your public lands by capitalists, many of whom are not even American citizens, nor intending to become American citizens, and that, too, against our unquestioned policy for a hundred years, that our public-land laws almost framed, and so administered, as to secure the largest ownership of public lands by the men whose labor would make them fruitful—a policy which has been held to be the only safe foundation for our American institutions by the wisest statesmen the republic has produced. The safety of our institutions rests on the ownership of the lands by the people. Our free institutions can not survive a monopoly of lands. So far as we permit monopoly of the public lands we weaken the foundations of the republic."

The motion of Mr. Holman was agreed to as follows:


Bank Circulation and Coinage.—What is e commonly known as the McPherson bill pas the Senate, Feb. 23, 1884, after a protracted debate. In beginning the discussion of measure, Mr. Bayard, of Delaware, said in planation of its purposes: "The national bank note is the best for paper money, because its payment is absolute secure. No misfortune can break it. The t may fail, and yet the note is good and pa current, because the bonds of the United St deposited are immediately available to red every dollar in circulation. This security of holder is the foundation of the whole cen No other security can possibly take place of Government bonds. This has tried in the United States over and over disastrous results. Coin reserves in the of banks disappear at the first sign of a p Even reserves placed under a board of co of a system of State banks have proved it
Compulsory redemption in deposit commercial cities is equally insecure. as on real estate, State bonds, and dial paper have over and over again ad an inadequate security. No secur- he note holder in the custody of banks rs is safe against failures and panics, or threat of punishment can prevent editors of a bank from obtaining a se over the note holder, who, in all systems of banking, is the last to be i and the first to suffer loss. The form of security, that of the Govern- ment, safely deposited in the custody of arment, is the only one that has effective in favor of the note holder.

Lamentable principle of safe banking is critically recognized by the chief com- mittees, who alone have the established support and maintain paper money at coin, and all other paper money is a an by a government, only justified by necessity.

The problem we are dealing with grows the fact that our Government bonds nigh a price or yield so low a rate of that banking institutions are in doubt it is best for them to purchase the necessary to be deposited as security for relating notes, or to abandon the issue notes. In point of fact it is shown by stroller of the Currency in his last re- port the amount of bonds deposited for on within one year has diminished 50, and that this threatens to reduce the national-bank circulation of $60, per annum (page 10). It appears from (page 12) that of the $354,000,000 s deposited by the national banks, $100,000 are liable to be paid by the Gov- ernment. The uncertainty and danger turmance and contraction of our cur- rency this cause are apparent. When any of the us charged and paid by the Gov- ernment must be replaced by others, oracy based upon them must be paid cede. It is true there are other bonds nited States outstanding to the amount of thousand millions, which are redeem- from seven to twenty-three years, as

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<td>I/n</td>
<td>payable</td>
<td>Sept.</td>
<td>5,719,000</td>
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<td>9,308,000</td>
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<td>I/n</td>
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<td>14,904,519</td>
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<td>I/n</td>
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<td>6,875,013</td>
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Notes are to-day in market value as

- States four and a half, 1901, registered, 118;
- States four and a half, 1901, coins, 114;
- United s, 1901, registered, 125;
- United States four, 1907, coupons, 125;
- United States currency notes, 1889, 1894; United States currency notes, 1894, 1894; United States currency notes, 1897, 1894; United States currency notes, 1898, 1894; United States currency notes, 1899, 1894.

"Under existing law, upon the deposit of any of these bonds with the Treasury by a banking association, it may receive circulating notes to the amount of 90 per cent. of the par value of the bonds, and no more. Upon this state of facts it is a matter of doubt depending upon close computation whether a bank, which must be governed by the interest of its stock- holders, would be justified in investing $125 in bonds yielding an interest of 4%, in order to procure $90 in circulating notes burdened with taxes, redemption in coin, and the certain loss in a few years of $25 of the sum paid for the bonds. It can without circulating notes exercise and enjoy all the business of banking except the issue of notes. Still, the advantages of credit which attach to national banks from the close supervision to which they are subjected, will always induce prudent men to prefer this system of banking even if the circulation gives them no profit, but it is not good policy to make the restraints upon banking or any other business more than enough to secure the certain and prompt payment in coin of its notes on demand.

"The question we have to deal with is whether the present law does not demand of the bank an excess of security, in view of the changed value of the bonds and the reduced interest they bear. When the law limited the issue of circulating notes to 90 per cent. of the par value of bonds deposited, they bore interest at the rate of 6 and 8 per cent, and were sometimes below par in market value. It was at that time the interest of the Government to induce the banks to take and hold as large an amount of bonds as possible. All this is greatly changed. The current interest on bonds is now 3 per cent, or less, and they are sold in the market at rates yielding the investor 2-1/2 per cent. It is now a matter of indifference to the Government who buys or holds its bonds. The only interest it has in the matter is to hold in its vaults ample security for the redemption of the notes issued. To require security of $125 to pay $90 is unnecessary, and is a questioning by the Government of its own credit and solvency. Upon this I believe we are all agreed. To continue the old limitation would not only be unjust, but would tend to break down the system of national banks and punish our people by unnecessary contraction of their currency."

The vote on the passage of the bill was as follows:


(Bank Circulation and Coinage.)

217
NAY—Bowen, Coke, Garland, George, Jones of Indiana, Kenna, Massy, Plumb, Slater, Vest, Voorhees, Walker—19.


Following is the text of the measure:

**Be it enacted, etc.** That upon any deposit already or hereafter made of any United States bonds bearing interest, in the manner required by law, any national banking association making the same shall be entitled to receive from the Comptroller of the Currency circulating notes of different denominations, in blank, registered, and countersigned as provided by law, not exceeding in the whole amount the par value of the bonds deposited: Provided, That at no time shall the total amount of such notes issued to any such association exceed the amount at such time actually paid in of its capital stock. And that all laws and parts of laws inconsistent with the provisions of this act be and the same are hereby repealed.

Sec. 2. That associations organized for the purpose of issuing notes payable in gold under the provisions of section 5160 of the Revised Statutes of the United States, upon the deposit of any United States bonds bearing interest with the Treasurer of the United States, shall be entitled to receive circulating notes to the amount and in the manner prescribed in this act for other national banking associations.

The House took no action on the measure.

Bills for the improvement of the coinage, for the removal of restrictions upon the coinage of silver dollars, to suspend the coinage of silver dollars, to limit the coinage of silver dollars, were introduced, but came to naught. The measure which took up the greatest share of the attention of Congress was that for the retirement and the recoining of the trade-dollars, which, as brought before the House, Feb. 18, 1884, read as follows:

**Be it enacted, etc.** That until Jan. 1, 1888, United States trade-dollars shall be received at their face value in payment of all dues to the United States, and shall not be again paid out or in any other manner issued.

Sec. 2. That the holder of any United States trade-dollars, on presentation of the same at the office of the Treasurer or any assistant treasurer of the United States, may receive in exchange therefor a like amount and value of dollar for dollar, in standard silver dollars of the United States.

Sec. 3. That the trade-dollars received by, paid to, or deposited with the Treasurer or any assistant treasurer or national depository of the United States shall not be paid out or in any other manner issued, but, at the expense of the United States, shall be transmitted to the coinage mints and recoined into standard silver dollars.

Sec. 4. That the trade-dollars so received at the coinage mints shall be regarded and treated as silver bullion, and, at their bullion value, shall be deducted from the amount of bullion required to be purchased and coined by the act of Feb. 28, 1878.

Sec. 5. That all laws and parts of laws authorizing the coinage and issuance of United States trade-dollars are hereby repealed.

In opening the discussion, Mr. Dowd, of North Carolina, said:

It will be contended, no doubt, that as the Government did not originally issue this coin upon its own account, but only acted as agent of the owners of the bullion, it did not incur any legal obligation, and is not bound now to redeem it, especially in the hands of speculators, at a price greater than they paid for it, or greater than the market price. Although this proposition would at first view seem plausible, a little reflection, I am sure, will be sufficient to show that such action on the part of the Government would not be only immoral, but impracticable. It is true the Government did not purchase the bullion, and manufacture and issue this coin as it now issues the standard dollar and fractional silver, but it did place upon it its great seal and stamp, with the legends, devices, and emblems of national honor and good faith, declaring not only that it was worth a hundred cents in the dollar, but also that it should be a legal tender within a certain limit; and then afterward by its own act—first by a joint resolution of the two houses, and then by a law duly enacted—it stripped this coin of the legal-tender quality and degraded it to the condition of bullion while it was in the hands and pockets of the people, and that, too, without any sort of notice. So, whatever may have been the obligation of the Government originally, the fact can not be disputed that the Government is alone responsible for the degradation of this coin, and it can not now with honor, in my judgment, refuse to redeem it at its face value, whether it be in the hands of speculators or of innocent and injured owners. It is not the fault of the holder of this coin, whether he be farmer or merchant, mechanic or banker, that it has lost its value as money. The Government itself is to blame; and whatever wrong it has done, it is bound by the plainest dictates of common justice to cause speedily to be repaired."

The debate drifted into a discussion of the whole question of silver coinage, and the advocates of a double standard and free coinage of silver dollars, as well as those in favor of the limits established in the act of Feb. 18, 1878, attacked the fourth section of the measure, fiercely arguing that its operation would for a time suspend the purchase of the silver bullion which is the direct outgrowth of our mines. The test-vote came on a motion to strike out the fourth section, which was carried as follows:

CONGRESS, UNITED STATES. (POLYGAMY IN UTAH.) 219


bill was then passed April lst, by a vote to 45. In the Senate, it was referred to the Con stance Committee, and June 20th, Mr. a, of Pennsylvania, moved to discharge ammities from the further consideration motion was rejected by a vote: Brown, Butler, Call, Cameron of Pennsylvania, cockwell, Groome, Hampton, Hawley, Jones of Pennsylvania, Jackson, of California, L, J. M. L. L. Mitchell, Morgan, Platt, allburry, Sawyer, Sewell, Slater, Williams.

—21.


...— Anthony, Camden, Cameron of Wisconsin, Colquitt, Conger, Cullum, Dolph, Farley, George, German, Ingalls, Jackson, Jones of Kansas, MacMillan, Mann, Man- Pendleton, Plum, Ransom, Riddleberger, vest, Walker—27.

any in Utah.—May 28, 1884, the Senate passed March 28, 1882. The bill was re-

ported by Mr. Hoar, of Massachusetts, from the Committee on the Judiciary. It provides: That in proceedings in any prosecution for bigamy, polygamy, or unlawful cohabitation under any United States statute, the lawful husband or wife of the person accused may be a competent witness, and may be compelled to testify; that in such proceedings an attachment may be issued against any witness on reasonable suspicion that the witness will refuse to obey a subpoena; that any prosecution under any statute of the United States for bigamy, polygamy, or unlawful cohabitation may be commenced at any time within five years after the commission of the offense; that every conveyance of marriage or in the nature of a marriage ceremony shall be in writing by a certificate stating the fact and nature of such ceremony, the full names of each of the parties concerned, and the full name of every officer, priest, and person, and shall be immediately recorded, and the record shall be prima facie evidence of the facts stated therein; that every certificate, record, and entry of any kind concerning any ceremony of marriage, or in the nature of a marriage ceremony of any kind, made or kept by any officer, clergyman, priest, or person performing civil or ecclesiastical functions, whether lawful or not, in any Territory of the United States, and any record thereof in any office or place, shall be subject to inspection at all reasonable times by any judge, magistrate, or officer of justice appointed under the authority of the United States; that nothing in this act shall be held to prevent the proof of marriages, whether lawful or unlawful, by any evidence now legally admissible for that purpose; that it shall not be lawful for any female to vote at any election held hereafter in the Territory of Utah; that all laws of the Legislative Assembly of the Territory of Utah which provide for numbering or identifying the votes of the electors at any election in said Territory are hereby disapproved and annulled; that all laws of the Legislature of Utah conferring powers other than those connected with the estates of deceased persons upon the probate courts shall be annulled; that illegitimate children shall not inherit from their fathers; that all laws of the Legislative Assembly of the Territory of Utah which provide that prosecution for adultery can only be commenced on the complaint of the husband or wife are hereby disapproved and annulled; and all prosecutions for adultery may hereafter be instituted in the same way that prosecutions for other crimes arc; that the acts of the Legislative Assembly of Utah incorporating, continuing, or providing for the corporation known as the Corporation of Jesus Christ of Latter-Day Saints, and the ordinance of the so-called General Assembly of the State of Deseret incorporating the Church of Jesus Christ of Latter-Day Saints, so far as the same may now have legal force and validity, are hereby disapproved and annulled; that it shall
be the duty of the Attorney-General of the United States to institute and prosecute proceedings to forfeit and escheat to the United States the property of corporations obtained or held in violation of section 8 of the act of Congress approved the 1st day of July, 1862, entitled "An act to punish and prevent the practice of polygamy in the Territories of the United States and other places, and disapproving and annulling certain acts of the Legislative Assembly of the Territory of Utah," or in violation of section 1890 of the Revised Statutes of the United States; that in proceeding for this purpose courts shall have the power to compel the production of books, records, and papers; that the incorporation of the Perpetual Emigration Company shall be annulled; that existing election districts shall be abolished; that adultery shall be punished by imprisonment not exceeding three years and fornication by imprisonment not exceeding six months; that United States Commissioners in Utah shall have the common powers of justices of the peace and the marshal the ordinary powers of a sheriff; that the Supreme Court of the Territory shall have power to appoint a superintendent of schools, and that the use of sectarian books therein shall be prohibited; and that a widow shall be endowed of the third part of all the lands wherein her husband was seized of an estate by inheritance at any time during marriage.

The arguments in favor of such legislation are familiar; but, as the grounds of opposition to it are not so generally understood, we present them as put forward by Mr. Brown of Georgia:

"Mr. President, the Constitution of the United States expressly declares that Congress shall make no law respecting an establishment of religion or prohibiting the free exercise thereof. Webster, in his dictionary, defines religion as follows:

First, the recognition of God as an object of worship, love, and obedience; right feelings toward God as rightly apprehended; piety. Second, any system of faith and worship, as the religion of the Turks, of Hindoos, of Christians, true and false religion.

Then, Mr. President, the Constitution of the United States guarantees to every citizen of the United States the free exercise of his religion, whether he be Christian, Turk, Hindoo, or Mormon, and the Congress of the United States not only has no right by any act to restrict the free exercise of religion, or of religious opinion, but such restriction is absolutely forbidden. But this free exercise of religion which is guaranteed by the Constitution of the United States does not authorize the practice of gross immorality under the cloak or in the name of religion.

"According to the general opinion of the Christian world, and according to the statutes of the Congress of the United States, the practice of polygamy is grossly immoral, is not only prohibited by statute, but its practice is to be punished by penitentiary imprisonment. The Supreme Court of the United States has sustained this construction of the constitutional provision under consideration. It follows, therefore, that no Mormon or other person in the Territory of the United States can shield himself in any court when arraigned for the practice of polygamy by pleading his religious freedom as a justification. Then, what follows? Those who commit polygamy in the Territories are subject to indictment, trial, and punishment in the courts of the United States. When convicted after a fair trial, it is the duty of the court to sentence the defendant to penitentiary imprisonment, just as it is the duty of the court upon trial and conviction, to sentence any one found guilty of murder or any other felony.

"The same rule which applies to the class of offenders known as polygamists applies, in like manner, to every other class of violators of the penal statutes of the United States; and, if they are tried, and convicted as are the criminals of other classes of violators of the penal code, I have repeatedly denounced polygamy on this floor. I consider it grossly immoral—in violation of the laws of God and man. Our law consigns polygamists to the same punishment when convicted, to which it consigns any other like class of criminals. I admit, in the broadest sense of the term, that no Mormon or other citizen of a Territory can defend himself under an indictment for polygamy by pleading his right to the free exercise of religion.

"But, while this is true, I utterly deny that the Congress of the United States, or any department or officer of the Government of the United States, has any power to punish a Mormon or any other citizen of the Territory by imprisoning his person or confiscating his property, or depriving him of his right to vote or hold office, or of any other civil right, for bigamy or polygamy or any other crime, without presentment or indictment of a grand jury. The trial and conviction by due course of law. And I utterly repudiate the right of the Government of the United States, or any department or officer thereof, to ascertain the guilt of any such offender by the application of a test oath or to deny to any one the exercise of any right of a citizen on account of his or her refusal to take such oath, or to be interrogated under oath as to his or her guilt or innocence.

"And, while it is true that the Mormon who commits polygamy is subject to indictment, conviction, and punishment, as any other criminal, it is equally true that the 100,000 Mormons, who, as the report of the Utah Commissioners appointed by the President shows, do not practice polygamy are protected by the provisions of the Constitution already referred to in the free exercise of their religious opinions. And no Mormon can be convicted of punished, or his goods seized, or his property confiscated, or his right to vote or hold office abridged, on account of any opinion he m
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entertain on the subject of polygamy, if he does not engage in its practice. A church or sect whose religious faith is that the Old Testament practice of polygamy is right and the Christian practice of monogamy wrong, has as much right to the free exercise of its opinion as any other in the United States.

"I feel fully authorized to assume the position as founded upon the rock of the authority of the Saviour himself, and firmly imbedded in the doctrines of Christianity, that no husband shall put away his wife and no wife shall put away her husband except for the cause of fornication, and that if either puts away the other except for that cause and marries another, or they both marry others, they are guilty of adultery, and the second marriage according to the divine law is a nullity, and the parties so married husband and wife, refusing to discharge the duties of husband and wife toward each other, and living in adultery with other persons. There is no escape from the conclusion that, according to the divine law, every man who has divorced his wife except for fornication, and married another, or has married a second wife without divorce, is neglecting his legal wife and living in adultery with another woman. And every man who has married a woman who was illegally divorced from her husband is living in adultery with the wife of another man. And if the wife puts away the husband for like cause and marries another, or, too, has a living husband, and is living in adultery with another man. And each having a plurality of wives or husbands living at the same time is living in the practice of bigamy or polygamy or polyandry. I apprehend this position can not be controverted by any one who admits Christ to be the Son of God and the divine lawgiver. All who deny his divinity and authority may reach a different conclusion. But those who deny Christ's divinity have not sufficient evidence for monogamy.

"It follows, then, that a man, whether he lives in Massachusetts or Georgia, who has left his wife without a divorce, or has divorced his wife, except for fornication, and married another woman, is a bigamist, and is living in a state of adultery, as much so is a Mormon in Salt Lake City who has married two wives, under their system, and lives and cohabits with both; the only difference being that the Mormon relation is condemned by a statute passed by the Congress of the United States, while the bigamy practiced by the citizen of Georgia or the citizen of Massachusetts is legalized, in the very teeth of the divine law, by the authority of the State. They stand side by side alike condemned by the divine lawgiver of the universe. They are both bigamists, and they both live in a state of adultery; and the moral guilt of the husband in Utah who lives with two wives, one of whom he has no right to have, is no greater than the moral guilt of the husband who in Georgia or in Massachusetts has two wives and cohabits in a state of adultery with the one he has no right to have.

"Under the Mormon system the husband is married to a plurality of wives. He cohabits with them all as his wives, and they are generally prolific of offspring. According to the law of his church he believes his offspring are legal, and it is his duty to care for and support them all alike. The mother of each is regarded as his legal wife, and each of the children is regarded as his son or daughter. The family is sustained and kept together according to the old patriarchal usage. The people are an industrious, laborious people; they are a thriftly people. No beggars or tramps are found in the streets. Panemism is but little known in the Territory. Everybody seems to have plenty to do, and each person is at work to accomplish the task before him. What they call adultery, or the cohabitation by a Mormon husband with a woman to whom he is not married according to the rites of their church, is regarded as a great crime. And I believe it is generally admitted that prior to the settlement of Gentiles, as they term outside people, among them, neither prostitutes nor houses of ill-fame were known to any extent in the Territory.

"But all this, thrift, and order, and labor, and prosperity are, in my opinion, insufficient to justify the practice of polygamy, which is allowed by the Mormon church. I refer to it only to contrast their system of bigamy and prostitution with our own system. Go to the other parts of the Union, where Mormonism is not known, and you will find it unfortunately true that prostitution is practiced to an alarming extent. In many States of the Union houses for the practice of it are either licensed by the public or permitted without interference by the police. Large numbers of illegitimate children are born without the protection either to the mother or child given to the plural wife and her offspring in Utah. In most instances the mother and child are discarded by the child's father, and they are cast together into the streets to make their living as best they can. I have not the statistics before me to show the exact proportion that the prostitutes bear to the population of any of our States, or to show the percentage of children born in the United States that are illegitimate. Our census reports are defective in this particular, but both classes are large.

"Twenty-five years ago it was estimated that there were more than 6,000 prostitutes in the city of New York alone. Since that time the city has more than doubled in population, and I have we have made fearful strides of increase in this pernicious practice. It is no doubt safe to assume the position that there are 12,000 prostitutes in that great city at the present time. And in the other cities of the Union, something like the same number in proportion to population. If this number is regarded too startling for belief, I beg to call the attention of the Senate to the fact that it
is not so large as the statistics of some other countries show in proportion to population. I find it stated as a statistical fact that in the province of Brandenburg there were 10-9 illegitimate children out of every 100.

"In the province of Schleswig-Holstein there were 9-6 out of every 100; in Berlin, there were 13-6 out of every 100; in Magdeburg, there were 9-6 out of 100; in Hanover, 8-9. The same author gives the proportion which the prostitutes bear to the inhabitants of certain European cities as follows: In Hamburg, 1 to 48 inhabitants; in Berlin, 1 to 62; in London, 1 to 91; in Vienna, 1 to 159; in Munich, 1 to 222; in Dresden, 1 to 238; in Paris, 1 to 247; in Brussels, 1 to 275; and in Strasbourg, 1 to 302. Unfortunately, we have no reliable statistics in this country, as they have in Europe, by which we can give the correct proportion of population who are either illegitimate or prostitutes. But I fear it may safely be assumed that in proportion to population we are but little behind the little behelded countries in laxity of morals in this regard."

The bill was passed by the Senate, June 18, by the following vote:


The House took no action on the measure.

**National Aid to Common Schools**—The Senate gave much time to the consideration of a bill to aid in the establishment and temporary support of common schools. It was introduced by Mr. Blair, of New Hampshire, as a substitute for a measure offered by him in the last Congress, and referred to the committee on education and labor, and reads as follows:

That for ten years after the passage of this act there shall be annually appropriated from the money in the Treasury the following sums, to wit: The first year the sum of $15,000,000, the second year the sum of $14,000,000, the third year the sum of $13,000,000, and thereafter a sum diminished $1,000,000 yearly from the sum last appropriated until ten annual appropriations shall have been made, when all appropriations under this act shall cease; which several sums shall be expended to secure the benefits of common-school education to all the children of the school age residing hereafter living in the United States.

Sec. 2. That such money shall annually be divided among and paid out in the several States and Territories in proportion which the whole number of persons in each who, being of the age of ten years and over, can not read and write bears to the whole number of such persons in the United States, and until otherwise provided such computation shall be made according to the official returns of the census of 1880.

Sec. 3. That the Secretary of the Interior, at close of each fiscal year, shall ascertain the amount of the school fund to which the States, Territories, and the District of Columbia are entitled under the provisions of this act, and shall certify same to the Secretary of the Treasury. That the receipt of such certificate the Secretary of the Treasury shall, on or before the 1st day of January of each year, apportion the said total sum socertified among the several States and Territories and the District of Columbia upon the basis of population as specified in the second section of this act.

Sec. 4. That the amount so apportioned to each State and Territory and to the District of Columbia shall be paid, upon the warrant of the Commissioner of Education, countersigned by the Secretary of the Interior, the Treasurer of the Treasury of the United States, the treasurer of the State, Territory, or District, or such officer as shall be designated by the laws of the State, Territory, or District to receive the same, and pay over the same to the several school districts entitled thereto under said apportionment. The five school districts provided, shall be designated by the laws of the State, Territory, or District, or the Secretary of the Treasury, for the disbursement of the school funds to teachers employed in such schools.

Sec. 5. That the instruction in the common school wherein these moneys shall be expended shall include the art of reading, writing, and arithmetic, geography, history, of the United States, and such other branches of useful knowledge as may be taught under the laws of the State, and such as may be taught under local laws, and such as may at any time be taught whenever practicable, in the arts of inquiry and industry, and the instruction of females in such branch of technical instruction as are proper for their sex, which instruction shall be free to all, without distinction of race, color,nativity, or condition of life; Provided, That nothing herein shall deprive children of different races, living in the same community but attending separate schools, from receiving the benefits of the same instruction that the States of which they are parts have without distinction of race.

Sec. 6. That the money appropriated and apportioned under the provisions of this act to the use of common schools in the several States and Territories shall be applied to the use of common and manual schools therein by the Secretary of the Interior.

Sec. 7. That the District of Columbia shall be entitled to the privileges of a Territory under the provisions of this act, but its existing laws and the actions of the authorities shall not be affected by the operation of this act. The Commissioner of Education shall be charged with the duty of superintending the distribution of its allotment, and shall make full report of doings to the Secretary of the Interior.

Sec. 8. That the design of this act not being to establish an independent system of schools, but to aid in the development of the public school system of the States and Territories, shall not be affected by its provisions, and that the States and Territories within it exist, Territory or otherwise, that no part of the amount appropriated under this act shall be paid in the district of Columbia or otherwise, for the maintenance of common schools at least one-third of the sum which shall be spent, or the provisions hereof, and during the second years of its operation a sum at least equal to the amount it shall be paid in such schools in the United States, and until otherwise provided, such computation shall be made according to the official returns of the census of 1880.

Sec. 9. That a part of the money appropriated to each State or Territory, not exceeding one thousand dollars, may be employed to the education of teachers for the common schools therein, which may be expended in maintaining institutes or
CONGRESS, UNITED STATES.

(NATIONAL AID TO COMMON SCHOOLS.)

Section 16. That the Secretary of the Interior shall be charged with the practical administration of this act in the Territories and the District of Columbia, through the Commissioner of Education, who shall report annually to Congress its practical operation, and briefly the condition of common and industrial education as affected thereby throughout the country, which report shall be transmitted to Congress by the Secretary of the Interior, accompanying the report of his department.

Mr. Blair made the following statement of facts as a justification of the proposed measure: "In 1880 there were 105,405 Chinese, 148 Japanese, and 66,407 civilized Indians. I am aware of no means by which the actual number of voters in the United States can be ascertained, but if we add to the total of male population over twenty-one years of age one eighth of the total of 1880 we have 1,608,783, and in all at this time 14,484,142. Assuming one half the foreign-born males of voting age to be naturalized, we have a voting element as follows, making allowance for increase of one eighth in each element since the census was taken: Native-born white voters, 9,208,332; foreign-born white voters, 1,728,274; colored (excluding Chinese, Japanese, and Indians), 1,472,739; total voting element in the United States in 1884, 14,411,845; or in round numbers there will be 12,500,000 men whose ballots will or may decide the next presidential election.

"The percentage of illiterate white males over twenty-one years of age by the census of 1880 is 7.8, and of colored the rate is 68.7. There is no perceptible change in this percentage for the better, judging from the fact that the illiterate population increased, according to a statement of the Commissioner of Education, between the years 1870 and 1880, 581,814 persons. There is some confusion in the data, but I think there was an increase during that period substantially as estimated by the commissioner. We have then at the present time an illiterate white voting population of 852,685; illiterate colored voters, 1,016,580; total illiterate voters, 1,869,265.

"I do not believe that more than two thirds, or at the most three fourths, of the voting population of this country is to-day in possession of a degree of proficiency in the arts of reading and writing that qualifies them, through the use of those arts, to exercise the right of suffrage more intelligently than do total illiterates. The school education of great multitudes is nominal, not real.

"I purposely omit further data as to the distribution of the illiterate vote. If it were uniformly dispersed it would be less dangerous. But concentrated as it is in masses at points along the line, while intelligence can never be
too strong anywhere, and considering that a majority of one in Florida or in Oregon may decide the most important of national elections and determine the future history of the whole country, I for one find it impossible to sleep in peace over this volcano.

"As will be seen by reference to tables in the report of the committee and to the census, the school age varies greatly in different States. In some it is from five to fifteen, in others from four to twenty-one, and with great diversity between those extremes. In a speech in support of a measure, substantially the same as this, made in the Senate June 15, 1882, after careful consideration, I stated the number of our population who should be in schools as, in my opinion, 18,000,000. I believe it to be now 20,000,000. By the census of 1880 the number within the school ages was 15,908,585. Of this number were then enrolled, that is, their names were on some list of pupils, 9,789,773, leaving 5,502,793 not attending school anywhere. But there were 587,180 enrolled in private schools, making a total of 10,347,983 enrolled in all schools of the country, both public and private, and leaving 4,935,692, or nearly one third of the legal school population, not attending either public or private places of instruction.

"If, now, the total enrolled in public and private schools be increased one eighth, as in previous calculations, we have a present school population in process of mental training of 11,641,624. If I am substantially correct in assuming a present population of 20,000,000 who should be either in public or private schools, from our total of at least 66,000,000 now living in this country, there will remain 8,955,576 who do not attend schools of any kind whatever, unless it may be of liberal or professional training. Making all allowances which can be reasonably claimed, there must be 60,000 of less than twenty-one years of age who are not enjoying school privileges of any description whatever. But look still further, in order that we may judge of the efficiency of our system in dealing with those actually enrolled. By the census, out of the 9,789,773 on the public-school registers, there was an average daily attendance of 5,804,988; so that the real fact is that the net educational result is the same as though the latter number had attended the whole school period yearly, which is perhaps five months of the twelve in the whole country, and 9,498,542 had not received a single hour of school instruction for the year.

The bill as submitted was amended by changing the term of its operation to eight years instead of ten, and appropriations to seven million for the first year, ten for the second, fifteen for the third, thirteen for the fourth, eleven for the fifth, nine for the sixth, seven for the seventh, and five for the eighth. It was also amended by the insertion of a clause restricting the appropriations to non-sectarian schools and by the substituting for the third section providing for careful reports from the Governor of each State and Territory in its school and a statement as to whether there is discrimination therein on account of race or color and above the establishment of a school, the filing of such a report with the Secretary of the Interior to be preliminary to the grant of aid. The twelfth section stricken out, and a clause added to the thirteenth, giving the Secretary of the Interior the authority to hear and examine complaints against or unjust discrimination in the use of funds granted under the act. I as amended passed the Senate April 7, following vote:


Year—Bayard, Bigler, Coke, Groome, Hawley, Maxey, Miller of California, Morganton, Saulsbury—11.


The House took no action on the measure.

Pensions.—In the House, January 23, bill was reported from the Committee on pensions granting pensions to soldiers and who had served in the Mexican, the Cre Seminole, and the Black Hawk war and Hewitt, of Alabama, who was in charge of the pensioners to the soldiers and sailors of the Mexican War. The motion was to, 227 to 46. The bill is as follows:

Be it enacted by the Senate and House of Representives of the United States of America in Congress assembled, That the Secretary of the Interior be hereby authorized and directed to place on the roll the names of the surviving officers and enlisted men, including marines, militia, sailors, of the military and naval services of the States who served sixty days in the war of 1847 and 1848 with Mexico, or who, being on the roll aforesaid, actually served with the Army or the United States in Mexico in said war, or who were engaged in a battle in said war, and were actually discharged, and to such other officers and sailors as may have been personally in any resolution of Congress for any pensions in said war, although their term of service may have been less than sixty days, and the surviving of such officers and enlisted men as were not such officers or sailors prior to the service in said war, although their term of service may have been less than sixty days, and the surviving of such officers and enlisted men: Provided, such widows have not remarried: And provided further, That this act shall not apply to any pension under this act.
The House was not ready to accept the bill as it came from the hands of the Senate, and, after concurring in some of the amendments, allowed the measure to drop, July 5.

A bill to increase the pensions of widows, minor children, and dependents of deceased soldiers, from $8 to $12 a month, was considered in the House, but made no progress; another providing pensions in case of disability, passed the House, April 21, but was not considered in the Senate.

The Lasker Incident.—On the sudden death of the distinguished German Liberal, Eduard Lasker, in New York, Mr. Ochiltree, of Texas, offered the following resolutions in the House, and they were passed January 9, 1884:

Resolved, That this House has heard with deep regret of the death of the eminent German statesman, Eduard Lasker.

That his loss is not alone to be mourned by the people of his native land, where his firm and constant exposition of and devotion to free and liberal ideas have materially advanced the social, political, and economic condition of those peoples, but by the lovers of liberty throughout the world.

That a copy of these resolutions be forwarded to the family of the deceased, as well as to the minister of the United States resident at the capital of the German Empire, to be by him communicated through the legitimate channel to the residing officer of the legislative body of which he was a member.

Prince Bismarck refused to transmit the resolutions to the German Reichstag, but returned them to the Department of State. March 10, the following resolutions were offered in the House, and referred to the Committee on Foreign Relations:

Whereas, It has come to the knowledge of this House that a communication from it to the Parliament of the German Empire, entirely friendly in its intent, respectful in its character, and sent through the regular channels of international communication, has been deliberately intercepted and returned to the Department of State of the United States by the person now holding the position of Chancellor of the German Empire; therefore,Resolved, That this House cannot but express its surprise and regret that it should be even temporarily within the power of a single too-powerful subject to interfere with such a simple, natural, and innocent expression of kindly feeling between two great nations, and thus to detract from the position and prestige of this nation.
tige of the crown, on one hand, and from the rights of the mandatories of the people, on the other. Resolved, That this House do hereby reiterate the expression of its sincere regret at the death of the late Edward Lasker, and of his sympathy with the Parliament of the German Empire, of which for so many years he was a distinguished member.

March 19 the committee submitted the following report:

The Committee on Foreign Affairs, to which was referred the message of the President of the United States, together with the correspondence of the State Department and certain resolutions submitted in the House, all referring to the death of Dr. Edward Lasker, late an eminent citizen or subject of the German Empire, has considered the various matters referred to it, and reports:

The resolutions adopted by the House on the 9th of January were intended to express to the German Government and people sympathy for the death of an eminent man who died in this country, who had served his native land as a member of its highest legislative body, and as a tribute of respect to his memory.

While your committee is of opinion that said resolutions should have been received and transmitted in the same spirit of cordiality and good-will by which they were conceived, it refrains from expressing an opinion as to whether the course pursued by the authorities of the German Empire in regard to them was or was not in accordance with the proprieties governing the internal regulations of said empire, as a matter not within its province of consideration.

The dignified position assumed by the Department of State merits and will command the confidence of the country, fully sustaining the high character which that department has maintained since the organization of the Federal Government.

As to the resolutions offered on the 10th day of March, your committee is of the opinion that they contain language, under present circumstances, superfluous and irrelevant, and not necessary or proper to vindicate the character or dignity of this House. Your committee, therefore, reports back said resolutions, with the recommendation that they be upon the table, and reports the following resolutions, with the recommendation that they be adopted as a substitute therefor:

Resolved, That the resolutions referring to the death of Dr. Edward Lasker, adopted by this House January 6 last, were intended as a tribute of respect to the memory of an eminent foreign statesman who had died within the United States, and an expression of sympathy with the German people, of whom he had been an honored representative.

Resolved, That the House, having no official concern with the relations between the executive and legislative branches of the German Government, does not deem it requisite to its dignity to criticise the manner of the reception of the resolutions, or the circumstances which prevented their reaching their destination after they had been communicated through the proper channel to the German Government.

The resolutions reported as a substitute for those offered March 10 were then adopted by the House.

Tax on Spirits distilled from Grain.—April 7, 1884, Mr. Thompson, of Kentucky, moved to suspend the rules and pass the following:

Resolved, That it is wise and expedient for the present Congress to abolish or reduce the tax upon spirits distilled from grain.

The motion was carried, 179 to 83.

Civil Service Reform.—April 21, 1884, Mr. Mutchler, of Pennsylvania, from the select committee on reform in the civil service, moved to suspend the rules and pass the following bill:

Be it enacted, etc., That all those portions of the following sections of the Revised Statutes of the United States, to wit, sections 789, 1864, 2517, 2544, 2818, and 3830, which fix the term of office of the officers, states in mentioned at four years, and all other acts and parts of acts in so far as they create or declare a term of four years on the part of any officers in any of the said sections mentioned, are hereby repealed: Provided, however, That the provisions of this act shall not apply to any of the officers mentioned in the said sections new in office, nor shall their term of office be in any wise affected by the provisions of this act.

Sec. 2. That the Chief-Justice and the Associate Justices of the Supreme Court of every Territory hereafter to be appointed shall be appointed to hold office during good behavior, or until the Territory shall be admitted as a State and the State government shall go into operation, and all the other officers whose term of office is abolished by the provisions of this act shall be commissioned to hold office, and shall hold office, during the pleasure of the President.

Sec. 3. That every person hereafter appointed to any office of which the term is abolished by the provisions of this act, and of which the incumbent is now required to give an official bond, shall, before entering upon the duties of his office, give a bond to the United States, with such sureties, for the true and faithful discharge of the duties thereof according to law. The said bonds shall be in such form, and under such penalty, and approved in such manner, and filed in such offices, as is now provided by law in the case of each of such officers; and such bonds shall be registered in three days after such registration shall be made, and such registration shall be made in the same manner as is required by the officers required to approve the same as are not inconsistent with the provisions of this act.

The motion failed by a vote of 99 to 146.

Miscellaneous.—A bill repealing all laws providing for the pre-emption of public lands, and all laws allowing entries for timber-culture, was passed by the House June 54, but was not considered by the Senate. The Lowell bankruptcy bill passed the Senate April 21, by a vote of 52 to 15. It came up in the House May 19, and Mr. Collins, of Massachusetts, who had charge of it, moved to make it a special order for June 10, but the motion was defeated by a vote of 127 to 92, less than the requisite two thirds. May 19th in the House, Mr. Hurd moved to suspend the rules, and pass a bill removing the duties imposed on works of art discriminating against foreign artists. The motion was lost by a vote of 52 to 175. June 19, the House passed a bill to prohibit the importation of convict-labor, but the Senate failed to consider it.

Proposed Constitutional Amendments.—Schemes to amend the Constitution have little practical value, but there was no lack of them at the first session of the Forty-eighth Congress. In the Senate, amendments on different topics were proposed as follows: December 4, an amendment giving Congress the power to protect, by appropriate legislation, all citizens in exercise and enjoyment of their rights, privileges, and immunities; December 5, an amendment forbidding the granting of extra compensation to Government contractors, and authorizing the President to disapprove separate items in appropriation bills; the same day, another amendment prohibiting the manufacture and
intoxicating liquors; December 6, an act prohibiting the denial or abridgment of a citizen’s right to vote on account of sex; December 10, an amendment for the election of postmasters, reejectors, judges, marshals, and United States district attorneys by the people; March amendment providing that legal tender will never be issued in excess of $500, unless by a two-thirds vote of each of Congress; March 12, an amendment declaring the presidential term to six years, making the President ineligible therefor; in the House amendments were passed as follows: December 10, an amendment declaring that the House of Representatives shall not be composed of more than 850 members; the same day, another amendment for a special, local, or private legislative session; the same day, a third amendment against bigamy and polygamy; the same day, a fourth amendment changing the choice of electors and regulating the number of electoral votes; the same day, an amendment for the appropriation of more than $10,000 by Congress, on a majority vote of all the members of the House; December 11, an amendment for a contract convict-labor; the same day, an amendment providing that every measure passed by Congress be either approved or voided by the President, and prescribing means for passing a measure over the President’s veto; the same day, a third amendment that direct taxes, when levied by the States, shall be apportioned according to the value of property in each State, by the District of Columbia; January 1, amendment providing for the election of Senators by the people; the same day, amendment giving Congress the power to fix the hours of labor in manufactories; February 5, an amendment authorizing Congress to make uniform marriage and divorces laws for all States and Territories; the same other amendment prohibiting the lending of the credit of the United States to any corporation; the same day, a third amendment limiting the time for the presenta-
to construct one or more bridges across the Willamette river, in the State of Oregon, and to establish them as post-roads.

To further suspend the operation of section 5574 of the Revised Statutes of the United States, title 73, in relation to quango-islands.

For the immediate appropriation of $1,000,000, in accordance with the urgent request of the Mississippi River Commission, for the preservation, repair, and construction of certain works for the improvement of said river.

To amend the Revised Statutes of the United States relating to the District of Columbia.

To amend an act entitled "An act to amend the statute relating to the immediate transportation of dutiable goods, and for other purposes," approved June 10, 1850.

To punish and punish the counterfeiting within the United States of notes, bonds, or other securities of foreign governments.

To complete a statue of the late Rear-Admiral Samuel Francis Du Pont, United States Navy.

To provide for the disposal of abandoned and useless military reservations.

For a bridge across the Missouri river at White Cloud, in Doniphan County, Kansas.

To great letter-carriers at free-delivered offices thirty days' leave of absence in each year.

Authorizing the Secretary of the Navy to offer a reward of $5,000 for rescuing or ascertaining the fate of the Greeley Expedition.

To authorize the construction of a highway-bridge across that part of the waters of the Chippewa river lying between the towns of North Hero and Alburg, in the State of Vermont.

To provide for the appointment of an Acting Secretary of the Smithsonian Institution.

To extend an act approved August 8, 1883, to encourage and promote telegraphic communications between America and Europe.

To authorize foot and carriage or railroad bridges across the Mississippi river at Saint Paul, in the State of Minnesota.

Granting permission to Ensign L. K. Reynolds, United States Navy, to accept the decoration of the Royal and Imperial Order of Francis Joseph from the Government of Austria.

Authorizing the expenditure of money for Indian educational purposes.

Providing for the addition of $10,000 to the contingent fund of the Senate.

Relative to the ceremonies of the unveiling of the statue of Chief-Justice Marshall.

Filling an existing vacancy in the Board of Regents of the Smithsonian Institution.

In relation to ceremonies to be authorized upon the completion of the Washington Monument.

To provide for the muster and pay of certain officers and enlisted men of the volunteer forces.

To fix the times for holding the terms of the Circuit and District Courts of the United States in the Northern District of Iowa.

To amend an act entitled "An act to authorize the construction of a ponton wagon-bridge across the Mississippi river at or near the city of Dubuque, in the State of Iowa."

To fix the time for holding the District Court in the District of Maine.

Fixing the rate of postage to be paid upon mail matter of the second class when sent by persons other than the publisher or news agent.

To establish and maintain a department of labor statistics.

Making all public roads and highways post-routes.

To amend an act passed February 16, 1843, chapter 33, to authorize the Legislatures of certain States to sell certain lands appropriated for school purposes.

Authorizing and directing the sale of the real-estate and riparian rights now owned by the United States at Harper's Ferry, in the State of West Virginia.

Providing for two additional Associate Justices the Supreme Court of the Territory of Dakota.

To amend section 2148 of the Revised Statutes.

To amend an act entitled "An act to execute certain treaty stipulations relating to Chincoteague," approved May 4, 1852.

To authorize the construction of a bridge over the Missouri river at or near Sibley, in the State of Minnesota.

To remove certain burdens on the American merchant marine and encourage the American foreign carrying-trade.

To equalize the rank of graduates of the New Mexico Academy upon their assignment to the various corps among domestic animals, § and § of an act approved February 24, 1879, entitled "An act to create the Northern Judicial District of the State of Texas, to change the Eastern and Western Judicial Districts of said State, and to fix the time and place for holding courts in said districts," and to provide for holding terms of court in the Western Judicial District of Texas at the city of El Paso, and for other purposes.

To constitute a bureau of navigation in the Treasury Department.

To repeal the act of July 2, 1892, and such section of the Revised statutes of the United States as purport to supersede the provisions in said act.

To create an additional United States judicial district, and to establish circuit and district courts thereto.

Making appropriations to supply deficiencies on a count of the appropriations for the fiscal year ended June 30, 1888, on account of the wagon trains of the United States, and to provide for the expenses of the meeting of the Legislature of the Territory of New Mexico, and for other purposes.

To grant to the Gulf, Colorado, and Santa Fé Railway Company a right of way through the Indian Territory, and for other purposes.

For the establishment of a bureau of animal industries, to prevent the exportation of diseased cattle, and to provide means for the suppression and extirpation of pleuro-pneumonia and other contagious diseases among domestic animals.

In relation to the Legislature of Dakota Territory.

To relieve certain soldiers from the charge of a section.

To amend section 101 of the Revised Statutes of the United States so as to allow the chairman of a sub-committee of a committee of either house of Congress to administer oaths.

To grant a railway right of way through the Indian Territory to the Southern Kansas Railway Company, and for other purposes.

To authorize the location of a branch line for disabled volunteer soldiers in either the State of Arkansas, Colorado, Kansas, Iowa, Minnesota, Missouri, Nebraska, and New Mexico.

To change the time of holding the District and Circuit Courts of the United States in the Northern District of Georgia.

Making appropriations for the support of the Military Academy for the fiscal year ending June 30, 1888, and for other purposes.

To authorize the extension of the Chesapeake & Ohio Railway Company to a point on the line of the United States at Fort Monroe, Va.

Making it a felony for a person to falsely and fraudulently assume or pretend to be an officer or employee, acting under authority of the United States or any department thereof, and prescribing a penalty therefor.

Making an appropriation for the Agricultural Department for the fiscal year ending June 30, 1888, and for other purposes.

To provide for the payment of claims for the issuance of certain reports by the accounting officers of the United States Treasury Department.

Making appropriations for the service of the Pu
To declare the cantilever bridge, constructed by the Niagara River Bridge Company across the Niagara river, a post-route.

To amend chapter 29 of the Revised Statutes relating to the District of Columbia, concerning mechanical liens.

Making appropriations to supply deficiencies in the appropriations for the fiscal year ending June 30, 1884, and for prior years, and for those certified as due by the accounting officers of the Treasury in accordance with section 4 of the act of June 14, 1878, hereof paid from permanent appropriations, and for other purposes.

Making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1885, and for other purposes.

Making appropriations for fortifications and other works of defense, and for the armament thereof, for the fiscal year ending June 30, 1885, and for other purposes.

Making temporary provision for the naval service.

Making an appropriation for the relief of Lieut. A. W. Greeley and his party, composing what is known as the Lady Franklin Bay Expedition to the Arctic regions.

Authorizing the Secretary of War to lease certain lands to the Board of Fish Commissioners of the State of Michigan.

Making an appropriation to relieve the sufferers by the overflow of the Ohio river and its tributaries.

Making further appropriations for the relief of destitute persons in the districts overflowed by the Ohio river and its tributaries.

Authorizing the President of the United States to appoint from the sergeants of the Signal Corps two second lieutenants.

Reappropriating the sum of $125,000, not expended, for the relief of sufferers by the floods of the Mississippi river.

To fill vacancies existing in the Board of Managers of the National Home for Disabled Volunteer Soldiers.

Appropriating the further sum of $100,000 for the sufferers by the overflow of the Mississippi river and tributaries.

To provide temporarily for the expenses of the Government.

CONNECTICUT. State Government.—The following were the State officers during the year: Governor, Thomas M. Waller, Democrat; Lieutenant-Governor, George G. Sumner; Secretary of State, D. Ward Northrup; Treasurer, Alfred R. Goodrich; Comptroller, Frank D. Sloat. Judiciary: Supreme Court: Chief Justice, John D. Park; Associate Justices, Elihu Carpenter, Dwight W. Pardee, Dwight Loomis, and Miles T. Granger.

Legislative Session.—The Legislature met on Jan. 9, and adjourned on April 4. The following is a summary of the work of the session:

The bill for specific appropriations for State expenditures, on the congressional plan, was passed, and a new legislative committee created, to be known as the "Committee on Appropriations.

The State tax was fixed at 15 mill on the dollar, the same as last year. A temporary deficiency in the treasury being probable, the Treasurer is authorized to borrow $200,000.

A commission of nine persons, to be approved by the Governor, and representing the various taxable interests of the State, is created to make a revision of the tax laws.

The exemption of $1,000 of the estate of veterans is limited to those who are pensioned.

The proposed appropriation of $200,000 for a new
State Prison or additions to the existing one failed, and the proposed $135,000 for additions to the Insane Hospital at Middletown was cut down to $75,000. Commissioners are created to inquire into the State Prison subject.

A bill to insure greater safety at grade-crossings of highways by railroads was passed.

The New York and New England Railroad Company was authorized to issue 50,000 shares of preferred stock, and to use the proceeds of the remaining second-mortgage bonds for double-tracking the road.

It was voted to accept the sum agreed upon as a fair settlement of taxes due from the Housemanic Railroad Company.

A commission was appointed to revise the probate laws, and all proposed amendments of those laws were rejected.

A bill allowing official stenographers for the Superior Courts was passed.

A bill was passed under which, in trials involving the death-penalty or life-imprisonment, juries may be kept under the control of the sheriff, and are permitted to go at large, as present. It is discretionary with the court.

The election law is amended so that names cannot be added to the "to be made" list later than Thursday at five o'clock, before the day of election. The present law allows till five p.m. on Friday.

A constitutional amendment providing for biennial sessions after 1886 was approved and sent to the people at the time of the October town elections.

Many measures for changes of the license law were offered, but all were rejected excepting a bill giving protesting agents $5 in each case, and $5 additional when conviction is secured.

Among bills passed were the following:

Providing that there shall be no distinction against any person on account of race or color.

Prohibiting under penalty the placing of telegraph or telephone poles, etc., upon a highway without consent of the adjoining proprietors or approval of a county commissioner, or the willful injury of any tree in the highway for the purpose of constructing therein any telegraph or telephone fixtures or wires, without the consent of the adjoining proprietor.

That all sick veterans residents of Connecticut, that Connecticut or Confederate regiments or those of other States, shall be entitled to enter the State hospitals.

That children under twelve years shall not be employed as scavengers, gymnasts, peddlers, beggars, etc.

Prohibiting the sale of impure ice cut from water impregnated with sewage, etc., for family or hotel use.

Making the new time the standard for the State.

To promote instruction in music in public schools.

Financial.—The funded debt of the State on Dec. 1, 1884, amounted to $1,120,106. During the fiscal year ending Nov. 30, 1884, new bonds to the amount of $1,000,000 were issued and sold; and outstanding bonds, maturing Jan. 1, 1884, to the amount of $1,315,000, were paid; thus the debt was reduced to the extent of $315,000. The balance of cash in the treasury at the beginning of the year was $887,868.80; the balance at the end of the year, $524,583.38; thus the reduction of the funded debt was al-

most exactly counterbalanced by the reduction of the amount of the balance in the treasury.

The rate of interest upon the newly issued bonds is 4% per cent., and the bonds were sold at a premium of 6-30 per cent.

During 1885 bonds amounting to $1,741,100 will mature.

The total resources of the treasury during the fiscal year (including the balance on hand at the beginning of the year and $1,068,500 received from the sale of bonds already mentioned) amounted to $3,432,325.65.

The principal sources of ordinary revenue were as follows: Taxes received from towns, amounting to $240,667.90; taxes on mutual insurance companies, amounting to $271,225.38; taxes on savings-banks, amounting to $196,511.78; and taxes upon railroad companies, amounting to $412,284.18.

The principal items of expenditure, other than payment of State bonds, were as follows:

On account of sessions of the General Assembly, $108,284.08; judicial expenses, $326,996.08; board of prisoners in county jails, $86,573.98; on account of common schools (in addition to the amount paid from the school fund), $229,926.50; on account of State Reformatory School, $72,753.20; on account of humane institutions, $162,346.92; on account of the National Guard, $152,945.68; and on account of interest on State bonds, $239,641.

In some of these amounts, however, especially in the amount specified as expenses of the National Guard, are included sums that can not be classified as ordinary expenses.

The taxable valuation by counties in 1883 and 1888 was as follows:

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>1883</th>
<th>1888</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hartford</td>
<td>$277,858.01</td>
<td>$297,399.86</td>
</tr>
<tr>
<td>New Haven</td>
<td>$76,579.59</td>
<td>$97,176.97</td>
</tr>
<tr>
<td>New London</td>
<td>$26,579.71</td>
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<tr>
<td>Fairfield</td>
<td>$77,956.80</td>
<td>$79,506.98</td>
</tr>
<tr>
<td>Windham</td>
<td>$27,325.10</td>
<td>$27,325.10</td>
</tr>
<tr>
<td>Litchfield</td>
<td>$28,312.09</td>
<td>$28,312.09</td>
</tr>
<tr>
<td>Middlesex</td>
<td>$19,209.49</td>
<td>$19,209.49</td>
</tr>
<tr>
<td>Tolland</td>
<td>$9,451.09</td>
<td>$9,451.09</td>
</tr>
<tr>
<td>Total</td>
<td>$546,477.57</td>
<td>$546,842.56</td>
</tr>
</tbody>
</table>

Education.—The number of public schools is 1,888, and the number of children between the ages of four and sixteen years shown by the enumeration of January, 1884, was 154,601, being a small increase over 1883. The total expense of maintaining the schools, not including the expenses of the Normal School, during the past year, was $1,777,277, of which amount the sum of $1,130,863 was paid to teachers. Of the whole expenditure, $112,950.75 came from revenue of the school fund; $229,926.50 from the treasury of the State, $425,069.04 from income of town deposit funds, $410,253.38 from town taxes, $454,945.58 from district taxes, and the rest from other sources.

The principal of the school fund on Nov 30, 1884, was $2,017,158.74, and its income during the year ending on that date was $127,
Appropriations were made by the General Assembly in 1883 and 1884 toward deficiences which had resulted from depreciation in real estate owing to the foreclosure of old mortgages. Normal School is improving. Its enrollment on Nov. 30, 1884, was 164. The schools throughout the State are making satisfactory progress. A few of them, however, from special causes, are deteriorating.

Prison.—The last General Assembly appointed a commission to take into consideration and examine all matters relating to the erection of a new State Prison, or to provide enlargement or improvement of the one. The commissioners recommended a new prison on 40 acres of land thus enlarged.

Insurers.—The number of policyholders in the Connecticut Hospital for the Insane, Nov. 30, 1888, was 860. During the year 1884, 248 new patients, as number under treatment was 1,103 in 1883, 180 were discharged, leaving, on Nov. 30, 1884, 923. Although the hospital is greatly and even dangerously overcrowded, the death-rate has been lower than ever before, and below the average rate of institutions elsewhere. The regular has been made sufficient to meet all expenses, including repairs and improvements. Under authority given by the General Assembly at its last session, the hospital is now in process of enlargement by the addition of an addition that will accommodate 150 patients, and will probably furnish accommodations already existing.

New building is expected to be ready for use in April, 1885, and its cost will exceed $75,000 appropriated. Appropriation for the accommodation of insane negroes is wanted.

Railroad companies.—The number of railroad companies in the State is twenty-five, of which fourteen are in operation. The total value of capital stock issued by all the companies was $35,365,577, of which amount stocks residing in Connecticut hold $17,488,424. The length of completed roads in the State is 473 miles, the length of double tracks is 267 miles, and the length of single track is 1,925 miles. The number of passengers carried during the year was 16,957,574, of whom only one person was injured. The total number of passengers carried on all roads was considerably less, owing to the fact that the roads are well maintained and in good condition.

Banks.—The amount of deposits in savings-banks of the State on the first of Jan. 1, 1884, was $20,614,428.85, being an increase of $3,510,289.12 during the year ending on that day. The number of depositors was then 252,345, being an increase of 5,593 during the year. The amount of indorsed paper held by these banks was $3,605,075.50. It is a fact of favorable significance that there has been in this class of investments a diminution during the year to the extent of $226,911.39. The amount invested in bank stocks was $6,233,960. The banks are represented to be sound and safe. The commissioners, however, still entertain the opinion, which they have repeatedly expressed to the General Assembly, that such banks ought to be prohibited from investing any of their funds in notes not secured by mortgage or other safe collateral security; and that they ought not to be permitted in future to purchase stock of national banks, especially of national banks located outside of the State.

Insurance.—There are ten stock fire-insurance companies in the State. On Jan. 1, 1884, their paid-up capital was $10,981,500; their gross assets amounted to $24,370,546; and their surplus above all liabilities was $6,678,523. There are also seventeen mutual fire-insurance companies, whose assets on the same date amounted to $1,151,685, and whose surplus above all liabilities was $584,731. There are nine life-insurance companies, whose gross assets on that date amounted to $109,020,631, and whose liabilities (except capital) were $96,147,577.

State of Buckingham.—On the 18th of June a memorial of Connecticut's "war Governor," William A. Buckingham, was unveiled in Hartford. It is a massive bronze statue, representing the Governor seated, and stands in the vestibule of the new State-House. Five thousand veterans of those sent by Connecticut to the national army during the war took part in the ceremonies, and around the vestibule were ranged the tattered battle flags that Buckingham had intrusted to them on their departure and received again on their return. The sculptor is Olin L. Warner, of New York, a native of Connecticut. The orator of the occasion was U. S. Senator O. H. Platt.

Governor Buckingham was born in Lebanon, Conn., May 28, 1804, and died in Norwich, Feb. 3, 1875. He was at first a farmer, but afterward was a merchant and manufacturer. He was Mayor of Norwich in 1849, 1850, 1856, and 1857. He became Governor of the State in 1856, and was re-elected seven times, (when in 1866) he refused another re-election. In 1868 he was elected to the United States Senate. His fame rests chiefly on his conduct during the war, when he showed unyielding energy and skill in sustaining the national Government in its struggle for existence; not only filling the quota of the State in the call for troops, but by personal sacrifice and the highest character bringing a strong moral support to the cause of his country, so that he won the admiration even of his political opponents.
Shad.—The catch of shad in Connecticut river below Essex was only 177,808 in 1885, against 272,308 in 1882, and 361,076 in 1881. The catch along the shore in pounds, hauling-seines, and gill-nets, for 1888, was 40,398. In the Farmington river, in 1888, only 1,155 shad were taken, against 3,800 for 1885 and 11,505 in 1881. The commissioners believe that the present modes of fishing are so destructive as to threaten the extermination of the shad. They consider that the only remedy is artificial propagation, which was recommended on Farmington river in 1881, after being discontinued for three years. At the Massachusetts hatchery below Holyoke dam, 3,312,500 young shad were turned into the river in 1888.

Oyster-Culture.—The third annual report of the Shell-Fish Commissioners embodies a statement of the work done by the commission during 1888. One hundred and eighty-three applications for oyster-grounds were made to the commissioners during the year, covering 14,687½ acres. There were decedents during the year, 14,907½ acres, which netted to the State $16,582.16.

During the three years of the commissioners' charge they had sold 88,548-9 acres, and paid into the State Treasury $42,403.79. In addition to this, 12,539½ acres had been granted, but not decedents, which will net the further sum of $18,798.78.

All the natural beds have been outlined and mapped except Fish Island and Rotom Point beds. Inefficient examination and private litigation have prevented a decision about these beds. The eight beds that are completely described and to be confirmed by law are Cornell Reef, 15 acres; Porchester, 216; Great Captain's, 152; Field Point, 84; Greenwich Point, 403; Fairfield, 1,273; Bridgeport, 384; and Stratford, 8,055—making a total of 5,493 acres.

The whole number of acres subject to the care of the engineer for boying is 88,548, and the work involves great labor and extraordinary patience, skill, and exactitude.

There are about 1,100 acres under cultivation in the State, and probably more. In 1888 there were 290 owners, against 216 in 1882. Steamers are rapidly increasing. A list of thirty-one steamers is given, aggregating a carrying capacity of 27,225 bushels.

The total receipts paid into the State Treasury are $30,518.13; of this $14,907.98 was from deeds, and $3,681.47 from taxes. The balance was from various sources. The disbursements were $8,446.24. The receipts are $2,026.87 more, and the expenses $2,444.48 less than they were in 1882.

Constitutional Amendment.—The following is the amendment providing for biennial legislative sessions:

Section 1. A general election for Governor, Lieutenant-Governor, Treasurer, Comptroller, and members of the General Assembly, shall be held on the Tuesday after the first Monday of November, 1886, and biennially thereafter, for such officers as are herein and may be hereafter prescribed.

Sec. 2. The State officers above named and members of the General Assembly elected on the Tuesday after the first Monday of November, 1886, and those elected biennially thereafter, on the Tuesday after the first Monday of November, shall hold their respective offices from the Wednesday following the first Monday of the next succeeding January until the Wednesday after the first Monday of the third succeeding January, and until their successors are duly qualified.

Sec. 3. The compensation of members of the General Assembly shall not exceed three hundred dollars for the term for which they are elected, and one mile-

age each way for the regular session at the rate of twenty-five cents per mile; they shall also receive one mileage at the same rate for attending any extra ses-

sion called by the Governor.

Sec. 4. The regular sessions of the General Assembly shall commence on the Wednesday following the first Monday of the January next succeeding the election of its members.

Sec. 5. The Senators elected on the Tuesday after the first Monday of November, 1886, shall hold their offices only until the Wednesday after the first Mon-

day of January, 1887.

It was voted upon at the annual town meetings on the first Monday of October, and ratified by the following vote: For, 30,520; against, 16,580. In 1886 and thereafter, members of the Legislature and State officers will be elected for two years. The biennial sessions will begin in 1887.

Political.—A Republican State Convention assembled in Hartford on April 23, and chose delegates to the National Convention of the party. Delegates to the Democratic Convention were chosen by the Convention that met in New Haven June 5, and adopted, among others, the following resolution:

The Constitution gives Congress power to lay duties, viz., "to pay the debts and provide for the common defense and general welfare of the United States"; and we therefore believe it unconstitutional and as dangerous to collect taxes beyond the necessary requirements of the Government, and advocate a suffi-

cient to furnish the necessary revenue for the economic administration of the same, and adjusted to its application for the general welfare, so as to prevent unequal burdens, and encourage and develop the productive industries of the country.

The Republican State Convention, to nominate candidates for State officers, convened in New Haven on Aug. 20. The following were the nominees:

For Governor, Henry B. Harrison, of New Haven; Lieutenant-Governor, Lorin A. Cooke, of Barkhamsted; Secretary of State, Charles A. Russell, of Killingly; Treasurer, Valentine B. Chamberlain, of New Britain; Comptroller, Luizene I. Musson, of Waterbury. Presidential electors were also nominated.

A Democratic State Convention met in Hartford on the 2d of September, and nominated presidential electors and the following State ticket:

For Governor, Thomas M. Walker, of New London; for Lieutenant-Governor, George G. Summer, of Hartford; for Secretary of State, D. Ward Northrop, of Middletown; for Treasurer, Alfred R. Goodrich, of Vernon; for Comptroller, Joseph D. B. Priestley, of New Haven.
Owing were among the resolutions that in favoring all reasonable means to cause of temperance, we protest against any laws that interfere with personal rights, and are summary in effect. The sale of liquor should be regulated by the State, and we are in favor of the well-adjusted license laws, the payment of wages, and we are in favor of ruling in that object, and for the abolition of alcohol in our prisons.

That we recognize the justice of the undemand for presidential elections at the the 4th of November as follows: Republican, 65,933; Democratic, 67,383; Greenback, 2,683; Republican, 187,811. Republican Congress were elected in the first and third pluralities of 304 and 2,482 respectively.

Democratic Congressmen in the 11th district by pluralities of .53 respectively. The total vote for was 137,784, of which a plurality of 223; Harrison, 66,277; all others, 30,983. Lieutenant-Governor the Democratic had a plurality of 245. There was a vacancy in the post of Secretary of the 8th of January, 1888, and the candidates. The Legislature of 1885-1886 was elected.

17 Republicans and 7 Democrats and 160 Republicans and 89 Democrats.

REVOLUTIONARY DISTURBANCES.—An insurrectionary outbreak occurred at Seoul, December 15, the second disturbance since the opening of friendly intercourse with foreign nations. During an entertainment given by the King to the British Minister, a signal the King’s son and six of the ministers were murdered, and the Queen also disappeared. As in 1889, the Japane were especially the object of popular fury. Their legislation was burned. A collision occurred between the Chinese and the Japanese guards, the result probably of a mistake, and the Chinese soldiery attacked both indiscriminately. A second set of ministers, who were called by the King after the murders in the palace, were likewise massacred. The King then placed himself under the protection of the Japanese. After the riots, the Japanese withdrew to Chung-Mu-Po.

COSTA RICA, one of the five independent republics of Central America. The area is estimated at 19,980 square miles; population set down at 185,000 in an official report in 1874.
Government.—The Constitution of 1859, modified in 1871, and finally in 1882, vests the executive power in a President, elected for a term of four years. The legislative power resides in a Congress composed of a Senate and a Chamber of Representatives—two Senators to each province, and one Representative to every 10,000 inhabitants. Both Senators and Representatives are chosen in electoral assemblies, the members of which are returned by the suffrage of all citizens that are possessed of an adequate means of living. The President of the Republic is General Próspero Fernández, elected August 10, 1882. The Cabinet was composed of the two Ministers—of the Interior, Licenciado Bernardo Soto; and Foreign Affairs, Dr. José María Castro—who also ranked respectively as First and Second Vice-President. Furthermore, the Minister of the Interior combines in his portfolio the department of Police, Commerce, and Agriculture, and War and Marine; and the Minister of Foreign Affairs those of Public Instruction, Public Charities, Public Worship, and Grace and Justice.

A ministerial crisis that occurred in the beginning of the year, attributed to the urgent necessity of adopting "radical measures of economy" in the administration, terminated in the resignation of the Secretaries of War and Marine, Señor Miguel Guardia, and of the Interior, Señor Victor Guardia. It was then decreed that the Cabinet henceforth should be limited to two portfolios as above.

Diplomatic and Consular Corps.—The Minister Resident of Costa Rica in the United States is Señor E. Gutiérrez; and the Consul-General at New York is Señor J. M. Monzo. The United States Minister (accredited to the five Central American republics, and resident at Guatemala) is Mr. H. C. Hall; and the United States Consul at San José is Mr. A. Morrell.

Army.—The standing army, of the nominal strength of 1,000 men, was in May, 1884, fixed at 38,527 for the war footing. In the militia are obliged to serve, when necessary, all male inhabitants between the ages of eighteen and fifty-five, not enrolled in the regular army. The new system of the Government is the system of the "Gaceta Oficial" which daily discharges the discharge of army officers, and it is hoped that Soto's broom may sweep out some of the useless barracks scattered throughout the country, thus giving the people a respite from their never-ending military duties, and the military voice would be those of the discharged officers themselves, who, perhaps, much to their disgust, would be obliged to work. Militarism has ever been the stumbling-block of the Spanish-American republics; but those who can read the signs of the times here see a general desire on the part of the republics, irrespective of political creeds or antecedents, to sustain the present government in its measures of retrenchment and economy.

Finances.—In the report of the Minister of Finance, on the revenue from August 1, 1881, to April 30, 1884, the national revenue and expenditure were given at $1,525,019 and $2,798,488, respectively; deficit, $1,246,449. This deficit, however, the minister observed, was not caused by increased expenditure on the part of his government, but was the result of debts left by the preceding administration, which had since been funded into the bonds of the home debt.

In the budget for the fiscal year 1884-'85, the revenue was set down at $2,559,886, and the expenditure at $2,650,876, showing a surplus of $10. The department of Limon had been partially exempted from the payment of import duties. Such articles as coffee, gunpowder, and tobacco, however, were not included in the free list, and duties were collected thereon by a double force of custom-house officials at Limon and Carrillo, the southern terminus of the Atlantic branch of the railway.

National Debt.—Here follows a statement of the foreign debt of Costa Rica, in 1884, as presented by the council of foreign bondholders:

<table>
<thead>
<tr>
<th>Amount outstanding of 6 per cent, loan of 1870</th>
<th>$2,041,590 00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overdue Interest</td>
<td>546,730 00</td>
</tr>
<tr>
<td>Total amount of 6 per cent, loan of 1870</td>
<td>$2,588,320 00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount outstanding of the 7 per cent, loan of 1872</th>
<th>$1,445,000 00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overdue Interest</td>
<td>1,578,100 00</td>
</tr>
<tr>
<td>Total amount of 7 per cent, loan of 1872</td>
<td>$3,023,100 00</td>
</tr>
</tbody>
</table>


Total foreign debt | $4,611,420 00 |
Equal, at par, in United States money | $38,103,940 00 |

To this statement the following report was appended: "The council and the committee were not without hope that after the refusal of the Congress of Costa Rica to ratify the agreement made with the bondholders by the late President Guardia, some attempt would have been made by that Government to renew negotiations with the bondholders for an arrangement of the debt. In July, 1888, the Council received a copy of the "Official Gazette" of Costa Rica, dated May 6, 1888, containing a proposal from Mr. Minor C. Keith, the contractor for the railway, to the Government, for the completion of the line to San José, and the settlement of the external debt of the republic. This proposal was laid before the committee of the 6 per cent. and 7 per cent. bondholders, separately, at meetings specially convened to consider it, and each committee unanimously resolved to have nothing whatever to do with such a scheme. The decision was accordingly made known to the President of the Republic, and also to Mr.
by the next mail. Shortly after an ‘Offi
cuette’ of July 14, 1888, was received,
the terms of the contract for the
The Minister of Finance, in reply to
patches informing the Government of
sions of the committee, under date
7th of September, expressed the hope
President that the committee would
ring a definite opinion upon the con-
til they had an opportunity of discuss-
with Mr. Keith. Mr. Keith has since
in England; but, after a short stay
ke has returned, without making any
1, to Costa Rica, for a brief period, in
10,000,000.”
was.—The chief destination and source
ports and imports of Costa Rica, and
pective values, for the year 1888, are
 in the subjoined table:

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>Exports to</th>
<th>Imports from</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$200,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>sin</td>
<td>$150,000</td>
<td>$90,000</td>
</tr>
<tr>
<td>des</td>
<td>$1,000,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>marines</td>
<td>$10,000</td>
<td>$12,000</td>
</tr>
<tr>
<td></td>
<td>$2,250,000</td>
<td>$2,150,000</td>
</tr>
</tbody>
</table>

Chief article of export is coffee; but
of late years brought by that staple
en unremunerative, and attention is
directed to the culture of other
such as tobacco, the sugar-cane,
. A sack of coffee pays at present
of 75 cents to Puntarenas, on the Pa-
est, and $1.50 to Carrillo, the nearest
capital on the Atlantic branch
way, and not one half the distance
strenuous is. Of the total value of the
as given in the foregoing table, coffee
ed $2,000,000; India-rubber, $166,
tals, $92,000; skins, $81,731; bananas.
Other minor articles were dye-woods,
shell, silver in bars, etc. The coffee
1884, it was predicted, would be over
acks, at an estimated value of $3,000.
April it was announced that the to-
omopoly was fully established, and the
ued prohibiting the cultivation of the
farmers. On the other hand, the
king of India-rubber in the lands of
blic was authorized by decree, in Octo-
owing, but its exportation restricted to
ished ports of entry on either coast.
—The movement at the two principal
republic was as follows, in 1888:

| PUNTARENAS | 30 steamers and 15 sailing-vessels, with an ag-
|            | 1,000,000 tons. |
|            | 22 steamers and 15 sailing-vessels, with an ag-
|            | 35,000 tons. |
CRAPE-STONE.

CUBA.

crape; but the invention of crape-stone has largely supplanted them in all parts of the world, and it is now made into almost every conceivable article of jewelry. The manufactory is in Providence, R. I., where a large number of skilled artisans are employed. Crape-stone of the first class is made from onyx, which is cut with tools and abraded with acids to produce the crape-like corrugations. These are in series side by side, or grouped in divisions; they are practically parallel, either longitudinal, lateral, or diagonal, sometimes waved; and the effect is perfected by the finer cross-lines. The stone, after being cut, is colored a lusterless black. The onyx is obtained in large quantities in our Western Territories, but a portion of the supply is from Idar, Oldenburg. The American stone is sent to Germany, where it is sawed into the desired sizes, cut, and prepared for the ornamentation. It is then returned to this country and subjected to the crapeing-process at Providence. The workman cuts each corrugation and the finer cross-lines with the utmost care, after which the stone is subjected to the acid. Crape-stone of the second class is made of silicious compounds, with mineral or metal fluxes, and is formed in molds. It is then covered with a film of wax at certain points, and placed in a bath of corrosive acids and the combinations produce the crape effect. The processes, which are the invention of Charles A. Fowler, of New York, are the result of long series of experiments. The accompanying illustrations give a good idea of the peculiar effect produced in this species of jewelry.

CUBA, an island of the West Indies, belonging to Spain. (For details relating to area, territorial division, population, etc., see "Annual Cyclopaedia" for 1888.)

Army.—The commander-in-chief and Captain-General of the island is Don Ramon Fajardo y Izquierdo, lieutenant-general, lately Captain-General of Porto Rico, and transferred to Cuba upon the resignation of Captain-General Castillo. The strength of the Spanish forces in Cuba, in 1884, was 25,653 men.

Discriminating Duties.—On Dec. 27, 1888, the following message was cabled from Madrid:

A decree is passed, in accordance with the recommendation of the Council of Ministers on the 2nd inst., abrogating Article V of the decree of March 15, 1868, whereby goods from the United States pay duty in Cuba as though they had been brought in foreign ships, even when arriving under the Spanish flag. The preamble of the decree says that the object of the measure is to define the equitable conditions of the reciprocal trade between Cuba and the United States, without prejudice to an ulterior revision of the tariff, and to place the commercial relations of Spain and the United States upon a sound basis. The decree will become operative in thirty days after its publication by Spanish consuls in their respective localities.

In 1868, the year before the war in Cuba, a decree was issued that was aimed at American merchandise exclusively. This decree levied a duty of 5 per cent. on the value of all American goods carried into Cuba in any vessel whatever. It was to favor Spanish shipping, and was in addition to the heavy import duties levied on all foreign goods sold in Cuba. The effect was not what was anticipated. The Americans retaliated. A discriminating duty on goods brought here in Spanish ships was levied, and the result is that Spanish ships have since entered American ports in ballast from Cuba.

In January, 1884, the Spanish Cabinet decided that the commercial convention with the United States, which was the outgrowth of the above decree, should go into effect on March 1, except the portion regarding the abolition of consular tonnage-tax on vessels leaving American ports for Cuba or Porto Rico, which would require the sanction of the new Cortes.

The commercial arrangement negotiated between Messrs. Elduayen and Foster, and becoming operative from March 1, 1884, contains the important clause that goods imported into Cuba and Porto Rico under the America flag are to be subject to the same duties as they were imported under the Spanish flag. To understand the provisions of this arrange.
rest it should be mentioned that the Cuban tariff divides goods as follows:

I. Spanish products under the Spanish flag.
II. Spanish products under foreign flag.
III. Foreign products under the Spanish flag.

IV. Foreign products under foreign flag.

But this arrangement provided that American products, whether imported in Spanish or American vessels, should pay the duty stipulated under Class III, while other foreign goods under non-American flags became liable to the rates under Class IV, and would only be admitted at the rates of Class III if imported under the Spanish flag.

In order to show the difference, we shall give the rates of duty of a few articles of merchandise:

<table>
<thead>
<tr>
<th>Description</th>
<th>Class III</th>
<th>Class IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rum, the 100 kilograms</td>
<td>$8.15</td>
<td>$4.90</td>
</tr>
<tr>
<td>Common chine, the 100 kilograms</td>
<td>7.60</td>
<td>9.65</td>
</tr>
<tr>
<td>Provision, the 100 kilograms</td>
<td>81.50</td>
<td>49.90</td>
</tr>
<tr>
<td>Artificial flowers, the kilogram</td>
<td>3.90</td>
<td>8.70</td>
</tr>
<tr>
<td>Pancos, each</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Pants, each</td>
<td>101.50</td>
<td>129.90</td>
</tr>
<tr>
<td>Bals-organa, ad valorem</td>
<td>9 per cent.</td>
<td>94 per cent.</td>
</tr>
<tr>
<td>Tyre</td>
<td>75 per cent.</td>
<td>81 per cent.</td>
</tr>
<tr>
<td>Common printing-paper, the 100 picagrams</td>
<td>$8.15</td>
<td>$4.90</td>
</tr>
<tr>
<td>Linen paper</td>
<td>1.50</td>
<td>1.75</td>
</tr>
</tbody>
</table>

An extra 25 per cent. being added, this renders the duties under Class IV still more onerous.

Commercial Crisis.—Early in March it was reported from Havana that the savings-bank had suspended payment, and that Señor Joaquin Limendorf, its president, had committed suicide. The commercial situation was becoming very critical. The low price of sugar, the tightness of the money market, and a general distrust accelerated a crisis threatening to involve all branches of business. At Sagna, Rodriguez & Co. failed, with liabilities exceeding $3,000,000. At Cárdenas, Miyares & Co. suspended; and McKellar, Lailing & Co. were announced to be in difficulties. Captain-General Castillo at this juncture declined permission for a general planters' and merchants' meeting proposed to be held for the purpose of urging reforms of a radical nature, but permitted each Board of Trade to submit separately to him suggestions to that effect. Meanwhile it was proposed to convert the suspended savings-bank into a mortgage-bank similar to those existing in Madrid and Paris. The Bank of St. Catalina was obliged to suspend, and the Banco Industrial was barely able to hold its ground. The root of the evil was the long-continued and exhaustive taxation, and the bartered exploitation of the industry and productivity of the island to the profit of the Spanish officials.

A New Loan.—Early in April news reached Havana that the Minister of the Colonies had made a new loan of $3,000,000 with the Hispanic-Colonial Bank of Barcelona, for the account of the Cuban Treasury, pledging in return a daily payment of $15,000 from the income of the Cuban custom-houses.

Aguero's Landing.—Simultaneously the landing of a small band of Cuban revolutionaries of eighteen men, headed by Agüero, was announced from the vicinity of Cárdenas, causing a feverish state of excitement.

Elections.—The elections for members of the Spanish Cortes came off in April, and there was some complaint that the result by no means represented the opinion of the country. As the best proof of this, it was mentioned that the autonomists were triumphant at the election of provincial deputies in the province of Havana, the most important of the whole island, in which elections are subject to laws much more equitable than those for election to the Cortes. The triumph of the Liberal Conservatives, therefore, greatly exasperated the Cubans.

Explosions.—On April 29 the powder-magazines of San José, opposite Havana, exploded. All the gas-holders of the Havana Gaslight Company, and all but one of those of the old gas company, were broken. The prominent buildings damaged were: The Captain-General's palace, the Spanish Bank, the Caja de Ahorros, the cathedral, the Convent of San Felipe, the churches of St. Angel, Santo Cristo and Jesus del Monte, the custom-house, the New Varieties Theatre, the jail, San Lazaro Hospital, the Orphan Asylum, the Western Railroad depot, the Regia Santa Catalina, the Aguirre and San José warehouses, the Cabanas and Carbajal, Julian Alvarez and Bancee cigar factories. Many lives were lost.

The Flour Duty.—In May, accounts from Spain received at Havana were to the effect that the dealers in flour were not satisfied with the commercial arrangement between Spain and the United States, as far as concerns that article in the trade between Cuba and the United States. A committee of flour merchants waited upon the King to ask his action in their favor on account of the treaty. Conservative papers in Havana made no secret of it that the Government intended to reduce the duty on flour imported from Spain in proportion to the reduction that the duties on flour from the United States should experience.

Spanish Abolitionists.—On May 24 the Spanish Abolition Society presented a memorial to the Government, calling attention to the fact that out of 40,000 negroes under Spanish dominion, who ought to have been freed from the modified form of slavery known as "patronage," only 1,500 had hitherto been released.

Newspapers suspended.—On June 11 the tribunal at Havana sentenced the newspaper "El Triunfo" to twenty days' suspension for copying from the New York "World" a passage saying that Spain was trying to sell Cuba. The paper "El Diario de Matanzas" was subjected to the same punishment for copying the same article from "El Triunfo." It was ordered that each of the papers should pay half the costs of the prosecution.
Reciprocity urged.—In June a large number of planters, merchants, and others in Matanzas sent a dispatch to their representative in the Cortes, instructing him to inform the Madrid Government that they learned with displeasure of the abolishment of the discriminating duties, and that they protested earnestly against any resolution that does not decree the free export of sugar, free trade with Spain, and a liberal treaty with the United States.

The Committee of Inquiry.—On June 7 there arrived at Havana five commissioners from Madrid for the purpose of examining into the condition of Cuba and reporting thereon. It became known that the Madrid Government sent these commissioners in haste as soon as they received official notice of the resignation of Captain-General Castillo, in which he drew a vivid but disquieting picture of the financial and political situation of the island. He added in the notification that his age and his shattered health would not permit him to entertain the hope of successfully coping with a condition of affairs which was desperate from every point of view.

The Remedy.—On July 1, in the Chamber of Deputies of the Spanish Cortes, Señor Valdoseca introduced a bill providing for an improvement of the situation of affairs in Cuba. The principal clauses of the bill proper proposed a reduction of the export and an increase of the import duties on sugar, and directed that Spain should negotiate new treaties of commerce in Cuba's interest with foreign nations. Other clauses were intended to effect economies in the Cuban budget, and provide for the conversion of the Cuban debt. The introduction of this bill had been preceded, the day before, by an important interview between Hon. John W. Foster, American Minister, and Señor Cánovas del Castillo, Prime Minister, and Señor J. de Elmayen, Minister of Foreign Affairs. The Spanish ministers showed a desire to arrive at an equitable commercial arrangement. Mr. Foster assured them that America was animated with amiable views regarding trade with Cuba, and, as far as possible, would feel inclined to meet the views of Spain and Cuba. He declared that the United States had no wish to assume further political responsibilities. He thought, however, that something must be done for Cuba quickly. Mexico would soon be importing sugar into America free. Unless Cuba and the English West India Islands secured equal terms, it was evident that their best market would be lost.

Sugar Prices.—During the summer it was said that planters in Cuba were, to a large extent, bankrupt; that some of them had been obliged to realize in Havana on centrifugal sugars of 92° polarization at three reals the arroba, in order to redeem the advances received on account of their crops, and that at Cádiz, for similar reasons, a lot of molasses-sugar was sold at 23^{1/2} cents per arroba, and a cargo of molasses at $2 per hogshead. There was, at the time, no abatement in the dejection that reigned on the island. Several Havana firms declared themselves unable to meet their engagements.

New Taxes.—With the month of July a new schedule of rules and tariffs for the collection of contributions for industry and commerce went into force. The rules were so complicated and onerous, and the tariff went into such details, that tax-payers became very responsive over the same. Grocers, for example, were prohibited from selling any of their goods by the barrel or case, and thus obliged to limit their sales to the narrowest retail trade. They at once sent in a protest against such rules. The municipality of Havana augmented its tariff for taxes with some extraordinary items. Every bill for advertisements posted at street-corners, railroad-stations, theatres, or any public place, was made to pay from ten to fifteen cents, silver, according to size. Every advertisement, in cartoon form or framed, hung in front of establishments, was made to pay fifty to seventy-five cents in gold. For every letter written or printed on the exterior of a building, describing the name and class of the establishment within, five cents yearly was charged. Even letters painted on awnings were included.

Financial Reforms.—Simultaneously a decree was published by which the Minister of the Colonies suppressed the sub-intendancies of the treasury, an annual saving of $72,000, after they had been three months in existence. The contemplated reduction of the estimates for expenses in the island to $27,000,000 was looked upon by the tax-payers as merely nominal, for with every exertion the Government has never been able to collect a larger sum for income. Hence the burden of tax-payers was not likely to be much less at the most favorable point of view the so-called reduction was looked upon as merely preventing a further deficit.

Export Duties.—On July 29 a cable-message was received at Havana from Madrid, to the effect that, dating from August 1, the following reduction in export duties would be made: The surtax of 5 per cent. to be abolished, and the existing duty reduced 60 per cent.; the duty to be payable one half in bank-bills at their nominal value.

A Spanish Loan.—In October, news was received that the Spanish Government was negotiating a loan with Parisian bankers for $25,000,000, to relieve the Cuban Treasury until its floating debt could be liquidated. It was also said that the Bank of Spain had handed to the treasury $5,000,000 for urgent expenses.

New Sugar Tariff.—On October 6, King Alfonso signed a decree abolishing the duties levied by Spain upon Cuban sugars, creating differential flag duties upon Spanish West India sugars imported into Spain in foreign vessels, increasing the duties on all foreign sugars, and discriminating against nations like England and the United States, not having treaties with
CUBA.

1888—The following tabular statement shows the chief articles of merchandise imported into Havana in 1888:

<table>
<thead>
<tr>
<th>Year</th>
<th>Domestic consumption</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1888</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1889</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1890</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1891</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1892</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1893</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1894</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1895</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1896</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* From January 1 to June 30, 1888.

American Trade.—The exports from the United States to Cuba were:

<table>
<thead>
<tr>
<th>Year ended June 30.</th>
<th>Total domestic merchandise</th>
<th>Total foreign merchandise</th>
<th>Total exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1898</td>
<td>14,567,915</td>
<td>585,765</td>
<td>15,153,680</td>
</tr>
<tr>
<td>1899</td>
<td>10,062,398</td>
<td>347,729</td>
<td>10,410,128</td>
</tr>
</tbody>
</table>

The imports from Cuba into the United States in 1888-'84 were:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1888</td>
<td>1,129,704,897</td>
<td>52,927,729</td>
<td>10,017,985</td>
<td>4,018,176</td>
</tr>
<tr>
<td>1889</td>
<td>55,532,604</td>
<td>25,500,649</td>
<td>11,708,668</td>
<td>4,599,209</td>
</tr>
</tbody>
</table>
DAKOTA.

Territorial Government.—The following were the Territorial officers during the year: Governor, Gilbert A. Pierce; Secretary, James H. Teller; Treasurer, William H. McVay; Auditor, George L. Ordway; Superintendent of Public Instruction, W. H. H. Beadle; Attorney-General, Alexander Hughes. Supreme Court: Chief-Justice, Alonso P. Edgerton; Associate Justices, William E. Church, Sanford A. Hudson, Seward Smith, William H. Francis, and C. S. Palmer.

Growth.—The population in 1880 was 125,177; in 1882 it was reliably estimated at 210,000; in 1883, at 380,000; and in 1884, at 490,000, of whom perhaps 250,000 are in southern Dakota and 150,000 in northern Dakota. The tide of immigration that set in four years ago still continues. The returns show that nearly 12,000,000 acres of land in Dakota were disposed of by the Government during the fiscal year ending June 30, 1884. Of this about 6,000,000 acres were to settlers and private parties, and 5,000,000 on claims to the railroads, hereafter to be adjudicated.

The Black Hills.—The region known as the Black Hills, in the southwestern part of Dakota, remote from the other settled portions of the Territory, exhibits a growth during the past year not at all inferior to that which characterized it before. It is largely devoted to mining, being very rich in gold, silver, mica, lead, copper, iron, etc. The gold shipments for the year ending June 30 amounted to $4,600,000, a slight increase over the year previous. The silver shipments, extending from July to December inclusive, amounted to $2,000,000. Litigation closed the principal silvermine on Jan. 1, so only the shipments for the last year can be given. Recent developments have disclosed the existence of large bodies of a very high grade of silver-ore in what is known as the "Carbonate Camp." Tin mines were discovered in the autumn of 1888, and some progress in developing them was made in 1884. The entire bullion production in three years has been estimated as follows: In 1882, $2,855,127; in 1883, $2,823,000; in 1884, $2,986,847. Very little has been done in the way of developing minerals, with the exception of the gold and silver ores. Something has been done, however, in the way of producing mica, the shipments of this mineral for part of the last year averaging $3,000 a week. The agricultural development of the region during the past year has been very rapid. The neighborhood of the Hills is settled by thriving farmers, with farms in good condition, and in many instances with fine improvements. Lumber and building material are cheap, and the prices of products comparatively high. Substantial school-buildings are being erected in nearly every settlement.

Crops and Stock.—The crops of 1884 have been estimated as follows: Wheat, 30,000,000 bushels; flaxseed, 3,000,000 bushels; corn, 2,500,000 bushels; barley, 2,000,000 bushels; oats, 10,000,000 bushels. The stock interest in the "Bad Lands" is developing rapidly, and there are probably 150,000 head of cattle now ranging on the grazing lands of western and southwestern Dakota.

Timber.—The principal part of the timber is southern Dakota is along Missouri river, and consists of soft maple, cottonwood, oak, ash, hackberry, elm, and some black-walnut. Along the Big Sioux there is considerable timber. Some good-sized bodies of timber are found along the Vermilion and James rivers; but they are isolated and generally several miles apart. Some very fine bodies of timber are found in ravines that make down from the rolling prairies to the streams or bottom-lands. On many of the lakes there is considerable timber. The Black Hills are covered with a heavy growth of pine-timber. Good coal in vast quantities is found in the Black Hills, and on Missouri river and other streams, a few hundred miles above Yankton, large veins of it crop out.

Financial.—The receipts for the year 1884 were:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance in treasury Dec. 1, 1884</td>
<td>$698,075</td>
</tr>
<tr>
<td>From counties</td>
<td>$214,488</td>
</tr>
<tr>
<td>Railroad-tax, 1884</td>
<td>117,805</td>
</tr>
<tr>
<td>Telegraph Company tax, 1884</td>
<td>378</td>
</tr>
<tr>
<td>Sale of laws</td>
<td>2,927</td>
</tr>
<tr>
<td>Tax on insurance companies</td>
<td>10,148</td>
</tr>
<tr>
<td>Warrants on general fund for credit Iowa Hospital fund</td>
<td>2,927</td>
</tr>
<tr>
<td>Warrants on general fund for credit North Dakota University fund</td>
<td>1,139</td>
</tr>
<tr>
<td>Bonds from citizens of Grand Forks, contribut. of observatory</td>
<td>2,987</td>
</tr>
<tr>
<td>Sale of bonds authorized for construction of various institutions</td>
<td>56,269</td>
</tr>
<tr>
<td>Total</td>
<td>$800,738</td>
</tr>
</tbody>
</table>

The disbursements were:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance in treasury Dec. 1, 1884</td>
<td>$213,967</td>
</tr>
<tr>
<td>Paid Auditor's warrants</td>
<td>$172,897</td>
</tr>
<tr>
<td>Pay counties proportion of railroad-tax</td>
<td>79,199</td>
</tr>
<tr>
<td>Pay interest on bonds</td>
<td>10,346</td>
</tr>
<tr>
<td>Pay interest on bonds</td>
<td>10,346</td>
</tr>
<tr>
<td>Exchange, etc.</td>
<td>505</td>
</tr>
<tr>
<td>Paid warrant on construction fund</td>
<td>118,500</td>
</tr>
<tr>
<td>Balance in treasury Dec. 1, 1884</td>
<td>211,467</td>
</tr>
<tr>
<td>Total</td>
<td>$500,728</td>
</tr>
</tbody>
</table>

The total bonded indebtedness of the Territory is $392,500, bearing interest at 5 and 6 per cent. The current demands upon the Territory have been paid on presentation since March 25, 1882. The assessed valuation of property in 1885 was $39,154,909.82. The valuation of southern Dakota in 1884 was about $44,500,000, and of northern Dakota, about $39,000,000. The valuation of the Territory in 1885 was $44,701,479.85. There are thirty banks in the Territory, with an aggregate capital of $7,551,990.

Railroads.—The following shows the miles of railroad in operation in Dakota, Dec. 31,
and the tax paid on gross earnings for
ar 1888:

<table>
<thead>
<tr>
<th>NAME OF ROAD</th>
<th>Miles</th>
<th>Tax.</th>
</tr>
</thead>
<tbody>
<tr>
<td>w Pacific and branches</td>
<td>619</td>
<td>$28,414.60</td>
</tr>
<tr>
<td>Milwaukee, and St. Paul and Northwestern</td>
<td>575</td>
<td>21,977.60</td>
</tr>
<tr>
<td>Minneapolis, and Mani to</td>
<td>377</td>
<td>18,591.93</td>
</tr>
<tr>
<td>St. Paul, Minneapolis, and Fort Pierre</td>
<td>440</td>
<td>28,851.05</td>
</tr>
<tr>
<td>Minn.</td>
<td>554</td>
<td>640.92</td>
</tr>
<tr>
<td>total</td>
<td>2,974</td>
<td>297,368.87</td>
</tr>
</tbody>
</table>

The following table shows the tax and mil-
re 1879:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>No. of miles</th>
<th>Amount of tax.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1869</td>
<td>460</td>
<td>$14,729.41</td>
</tr>
<tr>
<td>1870</td>
<td>825</td>
<td>22,508.89</td>
</tr>
<tr>
<td>1871</td>
<td>1,568</td>
<td>20,818.09</td>
</tr>
<tr>
<td>1872</td>
<td>1,947½</td>
<td>17,706.61</td>
</tr>
<tr>
<td>1873</td>
<td>2,974</td>
<td>297,368.87</td>
</tr>
</tbody>
</table>

The Fargo and Southern was
ested during 1884, and extends from Far-
Ortonville, 123 miles. It is pro-
to extend the line next year south to
yan, in Moody county, thus connecting
thern and southern portions of the Ter-

There are now in operation about
miles of railway in the Territory.

The public-school system em-
common or ungraded schools, graded
h schools, two normal schools, one ag-
ial college, and two universities—one
orth Dakota and North Dakota.
ws are administered by school-district
ations in fifteen of the oldest counties,
chool-township corporations in all
ounties. To a limited extent in cities,
, and villages, the schools are under
of education created by one general
many special acts. The following sta-
summarized for June 30, 1884, the
 the school year:

- schools organized: 507
- grades opened: 1,562
- June 1, 1884, between ages of 7 and 20 years: 77,469
- enrolled in schools: 40,091
- in schools: 1,290
- in school houses: 20,000
- in schools: 1,290
- employed, males: 868
- employed, females: 2,048

- total expenditure during fiscal year: $599,268.65
- wages: $94,755.67
- board: $153,608.70
- board: $7,379.29
- board: $73,544.20
- increased school expenditures: $1,208,575.72
- as reported June 30, 1884: $296,564.37
- total: $1,505,140.09

Buildings, University of Dakota, Vermilion... $40,000.00
Buildings, University of North Dakota, Grand Forks... $20,000.00
Buildings, Agricultural College, Brookings... $20,000.00
Normal School at Madison... $7,000.00
Normal School at Spearfish... $7,000.00
Donated by localities to all these institutions... $20,000.00
Salaries and other expenses to all these institutions... $28,000.00

 Aggregate cost of public education during
year... $1,746,569.99

The University of Dakota, at Vermilion,
Clay county, has handsome and substantial
stone buildings and ample grounds for all
poses. The university is now in its third year,
with 105 students. The University of North
Dakota, at Grand Forks, was chartered in 1883
and opened in September, 1884. There were
over fifty students in attendance in October.
The Agricultural College, at Brookings, was
opened recently with forty-five students. A
ormal school, at Madison, Lake county, has
an excellent building, not fully completed.
The school is in its second year, with forty-
five students. Another normal school is at
Spearfish, in Lawrence county. It is now in
its second year, with about thirty-five students.

The school for Deaf-Mutes is in the
eastern part of Sioux Falls. It has a superior
building. The blind of the Territory are edu-
cated in the Vinton (Iowa) State School by
contract with that State. All these schools are
free of charge for tuition.

The Catholic Church has the Academy of
the Sacred Heart, at Yankton. It is now
used as a school for Indian boys, of whom a
large number are in attendance. They have
also a parochial school in the city of Yankton
with ninety pupils. At Deadwood and other
places they have similar schools.

Yankton College is under the management of
the Association of Congregational Churches;
number of students, 106.

Dakota College, at Sioux Falls,
is under the patronage of Baptist churches.
Total number of students, 115. It has a
ormal department.

Pierre University, at the city of that name,
under the Presbyterian Church, has an enroll-
ment of thirty-six.

The Methodist Episcopal Church has located
a university at Mitchell, with a branch at Ord-
way, upon which work is progressing. The
Baptists have located a college at Tower City,
Cass county, which has received an endow-
ment of $100,000. The Presbyterians have
located a college at Jamestown, Stutsman Co.

- Public Institutions—The Insane Hospital, at
Yankton, has 150 patients. Another asylum
has been completed at Jamestown, with ac-
 commodations for 50 patients. The Penitenti-
ary, at Sioux Falls, contains over 100 convicts.
A new wing was built during the year. The
new prison at Bismarck has been completed,
but is not yet occupied.

Capitol Remodel—In May the Supreme Court
reversed Judge Edgerton's decision on the Cap-
itl Commission Bill (see "Annual Cyclopædia")
for 1888), thus virtually deciding Bismarck, and not Yankton, the legal capital. An appeal has been taken to the Supreme Court of the United States.

**Congressional Legislation.**—The question of the admission of Dakota as a State has been before Congress in various forms. In December an act passed the Senate for the admission of that portion south of the forty-sixth parallel as the State of Dakota, the northern portion remaining a Territory under the name of Lincoln. It is not probable that it will pass the present House of Representatives. Acts were passed providing for two additional judges for the Territory, to be appointed by the President, and increasing the Council from 12 to 24, and the House of Representatives from 34 to 48.

**Political.**—A Republican Territorial Convention was held at Huron on the 28th of April, which chose delegates and alternates to the Chicago Convention. A second convention of the same party met at Pierre on the 17th of September, and nominated Oscar S. Gifford for delegate to Congress. A resolution was passed urging upon Congress the recognition of the claim made by Dakota for the division of the Territory on the forty-sixth parallel, and the admission of the southern half as a State. Two Democratic Conventions were also held; the nominee for delegate to Congress was John R. Wilson. The Democrats also declared in favor of a division of the Territory. At the election, on the 4th of November, Gifford was successful by a vote of 71,979 against 15,134 for Wilson. The Legislature is almost unanimously Republican. North Dakota cast 52,955 and South Dakota 54,411 votes.

**County-seat Troubles.**—Toward the close of the year serious difficulties arose in several counties concerning the location of the county-seats. Violent possession was taken of the records, and mob law prevailed for a time.

**Decorative Art in America.**—The impetus that decorative art has received in this country is due, more than to any other cause, to the Centennial Exposition of 1876. Like all other nations, we had the desire to ornament; but, from the earlier days of our national life until our centennial was completed, little was done that we are now willing to place under this head. Many fine specimens of work in wood still remain in the old colonial houses of New England, New York, and Virginia. In the rooms of the Historical Society at Newport there is a fine specimen in some pulpit-stairs that antedated the Revolution. But such work as this was done by workmen trained abroad, and is foreign in spirit and tradition. That which distinguishes decorative work now done in this country is its departure. It is too early to speak of any national school of decoration; but in manner, methods, and materials there is a notable divergence from the decorative art of other countries. This is not the result of intention, but is due to the circumstances of our national existence, and of these chiefly to our isolated position among na. The revival of decoration in France and England owes its character to the vast store of art-treasures in museums, inherited properties, and other repositories. Our national life has been too brief, and our national energies much absorbed in other and more necessary industries, to accumulate these, even were it possible. Thus, inevitably, we have been thrown in great measure on ourselves and our surroundings.

This being the case, fortunately, the decorative movement has been for the most part along the hands of men trained in the fine arts, versed in the traditions and literature of the art. This has given the necessary artistic balance to our progress, which with men less well equipped might not have been preserved. In Paris, we are but tardily awaking to the conception of decorative art as anything more than luxury of the moment, interesting the individual. But let us see how this action takes place. The artist is an inspired person; what he wants he must have in color, the texture, must be that and none other. It will be readily seen how poorly equipped we were in materials alone for any important decorative work, when we remember the inferior quality of the stuffs from American looms ten years ago. This was but one of the difficulties the artist met in every direction. The American Artist in the beginning of his work for public buildings gathered from Europe and the East. When these were exhausted, the same difficulty was presented again. The result has been the successful manufacture of artistic stuffs in this country, equal in texture and color to those found in older countries.

**Stained Glass.**—The most important work has been in stained glass. It is impossible to say that American glass, for color and beauty of color, and for its adaptability to artistic possibilities hitherto unimagined, surpasses that manufactured in any other country. This is primarily due to John La Farge, the artist, and illustrates, more completely than any other branch of the decorative movement, the general course. Incapacitated for his profession as a painter by ill health, Mr. La Farge, long a student of decorative art, particularly of stained glass of Japan, turned his attention to decoration. In no branch of his art had he more distinguished himself than as a colorist; and he attempted thus to express himself in the English and other foreign glass, in other ways, gave him unsatisfactory results. He came to experiments that resulted in what is technically known as "opal glass"—the most important modern discovery in stained glass. Opalescent glass is glass that

THE MOST CONSPICUOUS EXAMPLE OF GLASS MOSAICS IS THAT BY L. C. TIFFANY & CO., IN THE PANEL BEHIND THE PULPIT OF THE CHURCH OF THE DIVINE PATERNITY, NEW YORK. THE CENTER FIGURE, THAT OF URIEL, THE ANGEL OF LIGHT, IS DONE PARTLY IN PAINT ON PLASTER, BUT CHEEFLY IN GLASS. SURROUNDING HIM ARE ARCHITECTURAL FORMS SUPPLYING THE NECESSARY SYMBOLISM, AND BY MEANS OF IT
DECOCHRAT ART IN AMERICA.

the decorative color. These are in mosaics of
glass jewels imbedded in the plaster. The
decorative effect is of a bluish tone, deepen-
ing, fading, and always changing, which rests
above the design, pierced by myriad rays of
light thrown off by the facets of the jewels.
The value of the decoration is even greater by
night, as it then receives the greater strength
of the artificial light. Such mosaic panels have
been introduced in the decoration of the White
House at Washington, and in the Union League
Club Building of New York city. But work
in mosaic is not confined to jeweled glass.
Very interesting effects are produced by flat
mosaics of pearl-toned and iridescent glass.
In the gallery of the Presbyterian Church in
New York, more familiarly known as the
Brick Church, is found an ornament modeled
in composition and inlaid with opalescent glass,
which, when seen from below, resembles carv-
ing in ivory inlaid with mother-of-pearl. The
door-frames leading into the pulpit consist of
inlays of bronze-toned mosaics, which prove
so successful that they have been introduced in
to private houses. Cornices and center-pieces
of opalescent and shell-tinted mosaics are now
making their way, as are also panels to be in-
serted in furniture.

Inlaid Work.—Inlays of other kinds, and in
more costly materials, are found in a few
houses. The rapid increase of wealth, and its
accumulation in the hands of few persons,
have at least been serviceable to decorative art,
since it has allowed for what we must be per-
mitted to call experiments in the first instance,
and for the use of material such as only great
wealth can command. The residence, known
as the Villard house, constitutes one wing of a
group of houses built after the model of an
Italian palace. The decoration of the interior,
which is of the most luxurious description,
corresponds with the date and period of the
architecture. The walls of the main hall are
paneled throughout in Siena marble. The
ceiling is groined and enriched with the most
delicate ornamentation, Renaissance in charac-
ter, in marble inlays. The drawing-room suite
continues the same style of ornamentation in
mahogany inlaid with white mahogany and
mother-of-pearl. The mechanical perfection
of this work, all done in this country, deserves
mention as well as its artistic merit.

The inlays in the house of Cornelius Van-
derbilt reproduce in an elaborate manner de-
corative work of the fifteenth century, and by
methods and processes that have arisen directly
out of the exigencies of the effect to be pro-
duced. The ceiling of the dining-room is cof-
fered and divided into panels, some of which
are filled with glass, since the room serves also
as a picture-gallery. The beams are oak, inlaid
with a double Greek fret of mother-of-pearl.
The panels are of mahogany, carved in relief
and inlaid and overlaid with pearl, bronze, mar-
bles, and corals. The object of this effect
is to secure certain color-effects for the designs,
and the processes by which these are arrive-
at are novel and interesting. There are few
figure-panels—Ceres, Bacchus, Pomona, and
Acteon. These figures were modeled by Au-
gustus St. Gaudens for John La Farge. The
Bacchus is the figure of a youth, with slight
drapery; in one hand he holds a beaker aloft,
the other rests on a sturdy vine, the foliage
of which crowns him and falls on the other side.
The flesh—tints are rendered in Siena marble
overlaying the wood. The beaker is in moth-
er-of-pearl, and the vine in dull-green bronze,
one of the many alloys used in the decora-
tion that were experiments for the special use
in view. In the Pomona, and in several of
the ornamental panels, these alloys play an even
more important part.

The Pomona is a graceful conception, best-
tiful both in line and color. The flesh-tints,
as of all the figures, are in Siena marble, and
the drapery of white mahogany and holly, the
slight differentiation of tint and texture prov-
ing very successful. The figure bends back a
branch hung with golden fruit, which she pre-
tares to cut with a gleaming knife of pearl.
None of the panels exceed this in color, in
which the green serpentine of the foliage and
the fruit of burnished bronze make fine har-
mony with the pearl, marble, and woods. In
the ornamental panels iridescent alloys mingles
with ivory, coral, and marbles, and at each
end of the room the head of Apollo in golden
repoussé bronze makes a conspicuous ornament.
These panels are each surrounded by a wreath
of hammered bronze, which leads the color up
to the egg-and-tongue molding of old oak that
forms the panels. The luxuriance of the ma-
terials must not divert the mind from the pri-
mary artistic intention, the color-effects
to which these simply contribute, and which is
the case of the metallic alloys are the results
of much consideration. But the ultimate aim
to decorative art is of wider and more perma-
nent character, since the formulas serve as
memoranda for the future.

Sculpture.—But little decoration has been done
in pure sculpture, owing partly to the expense
of such work, and to the few sculptors who
can produce it. That done, however, has been
of high character. In the Villard house the
panels above the mantel of the main hall and
dining-room are carved in relief. That of the
main hall is the figure of "Peace," a woman,
life-size, seated with two children by her knee,
cut in low relief in Siena marble. In the din-
ing-room the sculpture makes the frieze of the
panels of Verona marble that line the end of
the room. This arrangement makes it the
most magnificent piece of decorative sculp-
ture yet produced. The three figures "Joy,"
"Moderation," and "Hospitality" are, in fact
statues, since they are thrown into such high
relief. The figures are full length, but seated
each clasping the knees and holding ribbons
that connect them. The effect from below is
that of prominent medallions. The work is b;
Gardens, who modeled also the figure "Victory" in the Union League Club.

The carvings of "Peace" and "Love," half-mantel of Cornelius Vanderbilt, agnus St. Gaudens. It remains only the clock in the main hall confront-grand stairway of the Villard house, most decorative features. The clock the marble of which the hall is pane-makes a center of waving silver rays formed by the signs of the zodia-cy slight relief.

A Plaster—Interesting experiments are being tried for the decoration of a Wash-house by John La Farge, in which de-cor relief in plaster serves as the basis chromy. The effect desired is to se-rect results of modeling, with the addi-tor, and in a way more easily arrived at by the expensive process and ma-nethe Vanderbilt house. The decor-a tion of the pulpit of the Brick Church in New York city is work of this kind. In this cross with early Christian symbolic elements has been modeled in plaster, and, by use of enameled paints, lasting and var-ious effects have been obtained. The ceiling under considerable ornament, consisting of figures, ribbons, garlands, is in delicate relief. The ves given an ivory tint, and the ora-ments are brought out in color. Thus, flesh- the figures from the ground, the pears in pale-blue metallic tones, the pear-s the varied tints, and pale pinks appear in the draperies. The figures, some artistic secrets, and, if it is the color that will withstand the at-mosphere, and other ravages of time, it is valuable.

The name of Francis Lathrop is given in the decoration peculiar to him, especially in modeling the ornamental in stone afterward treating it with color. The effect is done with some composition the result of Mr. Lathrop's experi-mental work that will crack and ted to endure. The panels between the dining-room of the Villard house of this kind, as are also the ceil-ings, all of the country place of Charles V., at Mamaroneck, and the frieze of the house.

Decorative painting of the higher order are the panels of the St. Thomas's Church, New York, by . These are the Noti me tangere, and of the Marys to the sepulchre. The e effect is that of tapestries. Work one sort is found in Trinity Church, by La Farge, in two panels in the se Woman of Samaria, and Christ is at dinner. A word should be said of the of these Scriptural subjects. The effect spoken of intimates their de-corative value. One instinctively recalls modern ecclesiastical paintings in other countries, and may instance as a conspicuous example the decoration of the Pantheon at Paris, now under way. The decoration there by M. Pusis de Chavannes, the childhood of St. Genevieve, is the old modern work that we find in artistic sympathy with such work as that of La Farge. This must be limited to the emphasis of the decorative treatment as distinguished from picturesque scenes, otherwise La Farge's work is more joyous in color and healthier in sentiment, and, above all, is marked by a certain dramatic quality. The work that is most akin to the French decorative painting is that of Mr. E. R. Blashfield, in a ceiling for Mr. H. Mck. Twombly. This consists of a large centerpiece and two end-paintings, with symbolic figures enthroned on clouds, attendant cherubs, and other familiar details. But these in Mr. Blashfield's hand have acquired new value; the figures are fresh, the composition spirited, and the color soft and buoyant. The color of Blashfield's work should in fact be emphasized, and especially for those opalescent qualities particularly to be observed in some decorative panels, "Rhine Wine," "Red Wine," and "Champagne," considered before in glass.

The most complete example of painted decoration is the water-color room of Cornelius Vanderbilt, by La Farge. The room is, in fact, a corridor, leading from the dining-room to the smoking-room, divided by pillars of Sienna marble, with a central passage and arcades. The ceiling is vaulted, and, with the spaces made by the arches and the tympana of the sides, is covered with decorative paintings. The principal panels are filled with allegorical representations of the senses and the seasons. These can not be described in detail, but repre-sentations of the senses are the flowing, as it were, of the tint of the room, the combination of Sienna marble and wall-hangings of ecorce colors and gold.

Mr. Robert Blum and Mr. T. W. Dewing are each identified with decorative painting distinctly specific and individual. In the house of Charles J. Osborne, at Mamaroneck, are ceilings by each of these artists. That of Mr. Dewing, in a small boudoir, has a central panel in which a beautiful arrangement of three female figures, lying on masses of blossoms and holding ribbons, symbolize "Spring." The smaller panels are unique with masses of green leaves, and a sense of light penetrating through. Gold rings hold ribbons on which are Italian legends. There is nothing in this decoration that recalls foreign work. Mr. Dewing's color is personal, and his decorative feeling is distinctly individual. Even in his pictorial work, Mr. Blum has shown decorative tendencies so marked that it was felt he only needed opportu-nity. His ceiling of Mr. Osborne's house is the conical interior of one of the towers. The decoration begins in waves of color, such as we
are familiar with in Japanese work. These waves, neutral tinted and very fine, have the edges defined by a heavy line, which here is a bronzed cord, and is consequently in relief. The decoration proceeds to the top in irregular concentric circles, where sharply edged gilded dragons peer from behind toward the center, with a life-likeness almost too startling for a decorative effect.

These are the most prominent instances of a good deal of work of the kind.

Terra-Cotta.—The use of terra-cotta for decorative purposes in this country is of recent date; but its increase has been so great that its manufacture may be now considered one of the chief art-industries. The principal manufacturing is at Perth Amboy, N. J. The country within a ten-mile radius of that place supplies the best clays for that purpose in the United States. The first building in which terra-cotta was made a marked feature was that of the Brooklyn Historical Society. In its service the well-known sculptors Olin Warner and T. W. Bartlett were engaged. The works have now a corps of men under Mr. Mora, and the operations are on an extensive scale. The most important work yet done, with regard to size and the outlay of money, has been the New York Produce Exchange building, in which there are not only bands of terra-cotta and spandrels filled with ornament girdling the immense building, but special designs, including the seals of the States, appropriate allegorical representations, and studies of the fauna and flora of our country, making ornamental medallions. For the Vanderbilt stables, Edward Kenney has modeled a spirited horse’s head; and one of the finest works in character and texture has been the head of an Alderney cow by Mora for a Philadelphia stable. Some interesting results in texture are seen in the buff terra-cotta panels intended for the new Cotton Exchange, in which the peculiar qualities of the cotton from the bursting pod are finely felt. On the Lawrence building, in South Fifth Avenue, has been made recently a new and successful experiment in rendering the silky sheen of a ribbon, which makes an ornament on the side of the house and holds an inscription. The work on the Broad Street station of the Pennsylvania Railroad, in Philadelphia, is worthy of comment; and in many respects the large arch intended for the Adams Express Company stable at Cincinnati best illustrates how far the work has been carried. This is an allegorical representation of Aurora in her chariot among the clouds, preceded by Loves and attended by Mercury chasing away the Night. The work is in delicate relief, and includes modeling widely varied and a number of textures, all well given. The ornamentation of the chariot, a decorative arrangement of female figures representing the seven days of the week, should be mentioned as an original and beautiful composition. Mr. Mora has undertaken more ambitious work than this for the House at Trenton, N. J., a decorative composed of panels illustrating the scene of the world in groups of figures. The Stone Age and Architecture, are throughout. The figure of the young second frame is almost classic in its In "Printing," illustrated by Faust, rite, and Mephistopheles, the textures peculiarity good. In Writing, Navigali, Modern Science, we have the portrait of Dante, Columbus, and Watt.

The work in terra-cotta has also found in interiors, in decorative plaques for pieces, and jardinières for conservatories, which the ornament is wrought out with delicacy. An important adjunct has manufacture of bricks with reference for building purposes; an instance is in the speckled brick used in the Tiffany on Madison Avenue. These bricks used for mantel-facings.

Wood-Carving.—It has been said that decorative movement received its impulse Centennial Exposition of 1876. Pre that time, however, there had been notable interest in wood-carving in Cincinnati; however, trouble has been done by women mistresses of homes, many private houses have been enriched. A singular example is the introduction of wood-carving among of St. Martin’s Convent, Brown Ohio, who have adorned their own chapel with their work.

Accompanying this practical work to the use of the tools, there has been a but even more important endeavor. The effort to obtain new motives for ornamental work. The Cincinnati School of Design turns to the flora of Ohio, and has fully demonstrated the value to decorate the succory-leaf, of the wild-parsnip, form and textures of the buckeyes, an flowers and plants.

Silks.—The manufacture of artisan silk arose out of a pressing necessity. It is noting that while American silks entered the commercial world by no means to foreign silks, the artistic stuffs that are by the Associated Artists, both in and design, equal those produced in any, and now find a limited sale abroad greater convenience these silks hav
The most superb of them in texture "Gazonga," meaning five aces, by one initiated understand that nothing better. It unites three tints in different orations, and presents a broken sur ed by the filaments of the filling passuarily through the warp. Through slices the under threads are seen. laces a tone formed by the union of colors in the eye, changing and melt tint to tint as each color is seen in less proportion. The tapestry fabric to meet the needs of the tapestry peculiarity consists in the dispropor ne threads, the filling being a bunch aments and the warp a single thread. sirat," "Rajah," and "Monle," and silks resembling the Oriental fabrics, a special end in view. The Beirut is silks are each to be remarked for ding of tints produced by different and for their splendid absent. The brocade is a somewhat unfortunate textile intended for wall-hangings; pure silk, and silk and cotton. A illness is given to the ground, while a is brought out in a lustrous brocade, striking and original of these new called "Shadow silk," the name being ith reference to the use of the design. not better be expressed than as a color, reproducing that shimmering foliage in motion. The texture itself ill, and is of great beauty. e of design in stuffs produced here is t most significant evidences of our in decoration. The motives are new, used with new meaning. In this re are more akin to the Japanese than her nation. This does not arise outative intent, but proceeds legitim om those conditions that give us our idiosyncrasies. Thus, in going directly a freeing for decorative purposes that parallel in Europe, but we do find one ese art. This, in modern language, e to realism, and true and healthily as we find it in the hands of men of tistic sense, to whom the matter of n has chiefly fallen, it is no less dec even though it violates the canons of n that obtain in Europe.
es. In the Warren, Fuller & Co. on for wall-paper designs, the three ere taken by Mrs. T. M. Wheeler, L. Clark, and Miss Dora Wheeler, men educated in the fine arts, over nal designers of this country and En rs. Wheeler's design illustrates the of their work in respect to motives, manner of using them. The honey s-hive, and clover unite in the design, er is given with all the waywardness ural growth: the bees appear in va perspectives. These, in union with the silver honey-comb of the ground, and the flat disks taken from the straw hives, unite the conventional and real in a manner new and attractive. A wall-paper by Louis C. Tiffany may also be mentioned. The design is an arrangement of the clematis, with cobwebs uniting the various masses of foliage. There is in these a sense of perspective, leaf behind leaf, rendered by tint as well as by line.

Curtains.—The well-known landscape curtain of the Madison Square Theatre, by the Associated Artists, is an instance of picturesque decoration. A landscape-curtain by La Farge carries decorative realism still further. Here we have the foreground carefully brought out in embroidery. Through the middle distance runs a stream, rendered by means of appliqué and embroidery. In the background are distant cloud-effects, and long reaches of perspective, all accomplished without interfering with the value of the decoration. Such work as this is distinctly peculiar to this country. The designs in the stuffs of the Associated Artists are remarkable examples of such effects. A nasturtium-bed, or a mass of climbing vines, serves as the motive for a design. It is the luxuriance of the mass of which we have a sense. This is rendered now with distinct sense of form and emphasis of color, and now with vagueness, fainter tints, and a feeling of light breaking through, which discovers outlines more or less distinct. These qualities blend in a large, impressive design, distributed and connected with great ingenuity over the stuff. The designs on many of the thin silks are curious examples of what Nature will furnish in every detail if proper selection is only used. Such are sprigs of wintergreen leaves and berries, copied and used without adap tion.

Color.—The use of color is equally marked. Less conventional than that of England, less pronounced than that of France, it is disting uished by more subtle than either. In the language of Science, it illustrates the value of the small interval, and its object is a resultant, not a positive tint. We have seen this illustrated in the Villard house, in which the union of tints in the decoration fills the eye. In the stuffs this intent is more manifest. We find the best opportunity for study of the value of the small interval of color in the embroideries of the Associated Artists; and as an instance of the particular significance of this fact, it may be urged that an illustrative piece was bought and taken to England as a characteristic example of American decoration. In this work the decoration consisted of a mass of flowers in a vase, on a pale-yellow ground. The decorative color begins in the deep red and green of the foliage, yellows mingle with the reds, and reds with the green, in large proportion of the one and less proportion of the other, as the decoration rises, until the color is lost in pale-yellow roses and foliage, into the ground-tint. Such use of color is not universal, but this
DECORATIVE ART IN AMERICA.

particular use of color is American, and finds expression in numerous decorative features.

Embroidery.—Embroidery in this country has taken a high place in decoration, and assumed certain well-established characteristics. Some of these pieces are anything that has descended to us from the past. American work is executed in a much finer manner than that in England, where decorative embroidery is now so prominent a feature. The stitches fall into no category, but are used only with a view to effect. A conspicuous example is seen in a curtain that was made by Mr. John Lafarge for Cornelius Vanderbilt. This is a reproduction of the cartoons of Raphael, relating the adventures of Æneas in Carthage, a series of decorative panels in solid embroidery, set about a cloth-of-gold center. That which gives the curtain its distinguishing mark is the toning of the gold centerpiece into harmony with the embroidered border. This is done by broken lines of colored silks, introducing the tints of the embroidery, through which the sheen of the metal appears, until the color seems not so much a part of the work as to float in changing hues above it.

A series of tapestries produced by Mrs. T. M. Wheeler are, however, the most important addition to decorative embroidery in this country. The method is new, and consists in running the thread with the needle over the filling of the material known as the tapestry fabric, taking up the single thread of the warp. In this way the decoration becomes a part of the body of the stuff, and serves the same end as the Gobelin tapestries of France, which in effect it most resembles. The peculiarity of the stitch is, that it allows for effects before obtainable only in painting with the brush. So marked is this characteristic, that in some of the work recently produced the resemblance to Roman water color washes amounts almost to deception. A series of tapestries of this kind was produced for Cornelius Vanderbilt. The designs were female types, drawn with graceful fancy by Miss Dora Wheeler: "The Spirit of the Air," "The Water-Spirit," "Psyche," "The Spirit of the Flowers," "The Winged Moon." In these the body of the tapestry served for the flesh tints, and the modeling draperies and other accessories were wrought by the needle.

Recent work has carried the artistic spirit much further. Two remarkable pieces are an adaptation of the "Vestals" by Jules LeRoy, and a copy of "Titian's Daughter" finely reproducing the delicate modeling of the face, and the superb texture of the drapery. A more significant advance is in the realization of an artistic mood, of the sentiment of twilight in a draped female figure in landscape. The brush could carry this no further. At the same time, the use of the tapestry is preserved, since it requires no framing, and may be made serviceable as a curtain or wall-hanging.

Tiles.—The Low tiles have been one of the most important contributions to decorative art yet produced in this country, and their origin is a curious instance of the assertion in the beginning of this paper as to the influence of the Centennial Exposition on the art-products of the United States. John G. Low, after studying for the fine arts with Couture and Troyen, turned his attention to the painting of interiors, and finally to scene-painting, in which he had much success. At the Centennial Exposition he became interested in the exhibit of English tiles. Since 1846 these have been made by what is known as the "dust-process," the invention of Mr. Prosser, the chief results of which were made known to us by the Minton tiles. Successful as these were, up to this time and after repeated experiments, no one had been able to produce tiles in relief after this process. This was the task that Mr. Low undertook. The peculiarity of the Low tiles is not confined to the relief, but is more popularly understood to lie in the color and glaze. This is a combination of extreme hardness and brilliance of the glaze, united with gradations of tint. Formerly, and in the Minton tiles, the chief object was to secure uniform tint. The tiles were placed in seagars, a china is fired, and the greatest care is taken to keep them level, that the color may be distributed equally over the surface. The Low tile is colored by a method exactly the reverse. The tiles are placed flat in boxes, and these are separated by fire-clay rolled by the hand, and inevitably of uneven thickness. The boxes are placed on one another in bunks, and the uneven pressure, first inclining to one side, again to the other, causes the tint to flow unevenly over the surface, and results in these gradations of tint that are the great charm of the Low tile.

The work has by no means ceased with these results. Continued experiments have produced a tile molding that is the direct result of the dust process which is, perhaps, the natural outcome of the relief tile, but, until accomplished by Mr. Low, was considered impossible. The production of new forms has led to new uses of the tile. Their recent production is remarkable; remodeling of base-burners, in which the tile moldings serve as columns. These moldings receive also ornament in relief, and are distinguished by the same color-effects that we find in the tile. Experiments in flat, dull color, such as the potter would call a smear, are now undertaken with prospects of success. The plastic sketches by the Low process belong rather to pictorial than decorative arts, but may be mentioned as an interesting art-growth of the Low process. The impetus to decorative tiles given by the Low art tiles has been very great. The large tile-works of Indianapolis, Zanesville, Cleveland, Pittsburgh, and Brooklyn, have attempted the same work with more or less success.

Pottery.—The interest in decorative pottery began in Cincinnati in the independent efforts
DECORATIVE ART IN AMERICA.

of Miss Louise McLonghin to secure effects similar to those produced at Limoges. These were measurably successful, but the outcome has been of more importance, since it has produced new wares of great beauty, and independent methods of decoration that are of value. The Ohio clays have proved not only to be adapted to various kinds of pottery, but to have qualities that approach porcelain in delicacy and translucence. The Rockwood pottery is known by a very desirable cream-colored ware, and the chief direction of its force is to the production of household artistry of more artistic shapes. The work, however, has been carried much further than this; the finest specimen of ware from this pottery is a pale creamy, translucent body to which a hammered effect has been given. The decoration is modeled and applied, and its useful drawing and harmonious, delicate coloring place it in every way among the best examples of its kind. The work in the natural clays has been very interesting, especially in the earthenware, and illustrates the resources in the clays of that locality. The imitations of Bolton and Hispano-Moresque wares have been very good, but are at best but imitations. The Weller manufactories of art-pottery have been chiefly devoted to good shapes, and to the production of colors and glazes. The work is chiefly due to Mr. Robinson, whose labors in certain directions have met with great success.

Iron.—Work in iron has been limited for the most part to special orders. Ethel and her friends have designed and executed some fire-backs brought out in cast iron, that have attracted attention. There have also been a few reproductions of Japanese work, a fine sample of which is seen in the Hadley house. The work in the country in wrought-iron has been chiefly confined to the production of the work of famous periods. Mr. Robinson, of Paterson, N. J., has been thoroughly imbued with the spirit of fifteenth-century French work, and has been one of the first to bring such work out of the revival of wrought-iron. It is to be regretted that they have disdained all the older methods of producing work that simply resembles the designs they reproduce, but adheres to the legitimate handicraft of the old masters of wrought-iron. They have done something in modern and more realistic designs, and these are executed with the same technical fidelity. A pair of andirons, for example, simulate a crooked branch of oak, with leaves and acorns. These details, by modern mechanical short-cuts, might have been cut out and brazed on. But, on the contrary, they are hammered and drawn out, preserving carefully the drawing and peculiarities of the natural growth. C. A. Wellington & Co., of Boston, must be credited also with admirable work of this sort. Mr. Wellington was once a jeweler, and applies to his new craft the consideration he gave to his former work.

Travels.—Some illusion must be made to be introduction of Indian design in this country by Lockwood De Forest, and its adaption to American wares. After a two-years' sojourn in northern India, Mr. De Forest returned to this country, bringing with him a multitude of samples of the fertile treacly found in the Mohammedan temples of that country. This treacly has copied for him in wood, brass, and stone by the native workmen, and it is coming into very general use in this country as panels for furniture in brass and wood, registers, window-screens, and numerous other ways. A conspicuous example of its use is in the dining-room ceiling of the house of Charles J. Osborne, at Mamaroneck. The room is paneled in red mahogany, with a frieze of the wood incised in Moorish designs. The ceiling is divided into panels filled with the brass treacly and overlaid with a more open design in perforated wood-carving. The panels are framed in bands of finer wood-carving, and combine to make a ceiling of great richness and beauty.

In General.—While the interest in decorative art has been wide-spread, there are very few buildings that can be mentioned as instances of anything that is either complete or permanent. The most conspicuous example is Trinity Church, Boston, which, from its inception to its completion, was intended to be unique. But this intention, although the church is in a measure finished, and in every way interesting, has not the value of a complete decorative expression, since it is, as it stands, the result of compromises, and some times of effects misapprehended. The Union League Club Building, and the Veterans' room of the Seventh Regiment Armory, are interesting examples of some of the earliest work done. The decoration of the Brick Church on Fifth Avenue, to be remarked for its Byzantine character and use of early Christian symbolism, illustrates the disadvantages under which the artist must work when hampered by the architecture of earlier years. The Metropolitan Opera-House, when finished, will be one of the best examples of coherent decoration. Thus far, nothing permanent can be said to exist, beyond the dome. This marks a new era in the decoration of buildings of this kind in America, and there is no house of the kind in Europe, the decoration of which belongs to any class to which it can be assigned.

The progress of decorative art, however, is not to be found alone in the centers of wealth. From another point of view, its spread throughout the country has been most beneficial; while we find much that is crude and much that is extravagant, the level of appreciation and taste is higher. A point not to be overlooked, is, that it has given a new interest to the homes of those who live in the remoter parts of the country. Travelers perceive in the domestic architecture of the humbler sort the influence of the modern revival made known through the agencies only of publications of different kinds. Queen Anne is a household word, and
the once glaring monotony of straight lines, white paint, and green blinds has given way before architectural vagaries of gable and peak, and the subdued reds and greens that assimilate so well with the landscape. Probably the greatest gain is in the dissociation of taste, art, and the outlay of money. That which is so apparent outside is even more evident within. For example, the roughly plastered interior is not a surface to be covered over, smoothed down, and coated with glaring white. On the contrary, the is texture in its roughness. The brush-marks are left bold, giving the charm of variety to the surface. This makes a fitting background for color. The most beautiful treatment is with gold and slight admixture of color—red, green, blue—and on in short strokes at different angles. If gold be too expensive, there are tints of subdued red. The paint is thick, and is put on heavily, with curve and sweep. If greater variety is desired, a simple design in stencil is cut and applied in lighter or contrasting tints. Work of this sort is so easy that women have done it unassisted. The wall divisions of frieze, field, and dado are observed, if desired, with equal ease. These can be varied in numerous ways. For example, the dado may be of mastic treated with color; the field receives somewhat attention as is spoken of above; the frieze is of burlap, coffee-sack stretched on frames, gilded, tinted, and, if desired, receives wall-decoration in broad, simple tints, such as may one study from a humble source as a Japanese fan.

The principal source of decoration, that which appeals first, is color. This is evident throughout the country. In some places we find it carried very far, and until such decoration as we find in pictures and bric-a-brac may almost be dispensed with. The tint of the room, we may say, is a deep Indian blue. The largest surface is found in the small, all-one pattern of the wall-paper. The doors are treated as panels, and the window-frames as stately frames. There are seven or eight moldings; these are each given a different tint of blue. The more prominent have a metallic luster due to the mingling of silver or gilt; the recesses are in gold, very dark blue, or deep red, throwing out the moldings. The panels are in lighter tints. The cove is treated in the same way, the tints leading into the lighter blue of the ceilings, which grow still lighter to the center. Again, this treatment unites various tints. There is a hall, for example; the ceiling is yellow pink, the cove leads down through different tints in the molding, the last being burnished iridescent green, into the green field, and is carried again into a dark-red dado. This is daring work, but work that a nice feeling for harmonies in color makes successful.

Another mode of decorating a room, we find, is to take some picture, or piece of drapery, or some choice bit of color, as a starting-point, and carry it throughout the room. No less admirable is the ingenuity often exercised in securing artistic effects. An instance is in the use of tea-cup matting as prominently placed, flanking double doors. These are gilded and painted in broad designs of yellow and brown. These tin the dominant note of the room, and are carried into carpet, curtains, and draperies, are accentuated by the introduction in quantities of more positive color. The monizing qualities of gold make it always able. While its true value is only real use in pure, there are still many adm preparations within reach of humble means. Draperies make an important element modern interior decoration. The term pery suggests a distinction that should be made. In its modern acceptation, drapers for beauty of line, and this depends upon the natural folds of every staff. According to artificial intricacies of hangings and is quins have given way before pliable stuffs ranged with freedom and simplicity. Cotton and flannels and yellow cotton have proved desirable than more expensive materials. The Madras muslin, no lace has been more artistically desirable than cheesecloth. Among colored stuffs, blue denim may be mentioned as among the most valuable. Has of thin silk, suitably lined, and jute are included among handsome stuffs. They are embroidered in borders in color, with largely predominating. The peculiarity of embroidery lies in copying the vases and drawing of the natural flower within the geometrical limits. For such work, ing-frames long disused are brought or revive in a new way an old recreative simpler mode of treating these curtains outline the forms, and fill them with water-color washes. A common and vest evidence of the appreciation of it is seen in the hangings and coverings of all styles, called “crazy-quilts,” many of which show brilliant kaleidoscopic effects. A use of work of this kind has been seen in a ceiling, in which was placed a mosaic Moorish design over the gay silken fabric. Interior decoration of this sort has fallen into the hands of women, who have curred, and their endeavors into more muscular work. For their own. Delight in painting they prepare hammered-brass panels, with their own dining-rooms stamp the leather covers the furniture.

DELAWARE.

DELAWARE. State Government.—The ing were the States officers during the Governor, Charles C. Stockley, Deputy Secretary of State, William F. Cussew; Auditor, John M. Houston; Auditor, John M. Houston; Attorney-General, George Gray perintendent of Free Schools, Thomas N. lam; Registrar of Deeds, John W. Houston, and Edward W. Chancellors, Willard Saulsbury.
—In January, 1884, the State debt to the sum of $864,750, as follows:

bonds bearing 4 per cent. interest . . . $285,000
bonds bearing 6 per cent. interest . . . 158,750
sum of $864,750

on Delaware College ... 68,000

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The State debt after Jan. 1, 1885. . . . $889,750

The State also has investments eneit of the free schools to the $1,185,799. The total debt after $85, was $889,799; assets in excess

in excess . . . $522,949.95. As been disbursed from the general Jan. 17, 1884, to pay the interest on debt, to redeem bonds, and to pay any expenses of State government, $127,518.43, as follows:

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The meetings of the State Teachers' Association are also referred to as having been the means of much good by bringing about a closer union between the teachers and friends of the schools. During the past year twenty-seven public educational meetings were held in different parts of the State, principally in Kent and Sussex counties, and did much toward creating the sentiment in favor of better educational facilities.

During the last school term the total number of colored schools in the State, outside of Wilmington, was 65. The average length of the school term was 9 months. The highest monthly enrollment was 8,408, and the total amount paid to these schools from all sources was $8,176.38, of which the State paid $4,952.04, the colored-school tax realized $3,287.01, and the Delaware Association contributed $317.33. The schools are doing an excellent work, with many promising indications.

The following is a summary of statistics:

Number of school districts in the State, 421; number of schools, 944, an increase of 29 over 1885; average number of months taught, 7.97; number of white children between six and twenty-one years of age, 86,059 (exclusive of Wilmington); average daily attendance, 19,893; average number enrolled in each district, 9; average daily attendance per district, 8; average cost per pupil on number enrolled, $4.75. Whole number of teachers in the State (including Wilmington), 446; average monthly salary, $32.31; average age of teachers, males, 32.9 years; females, 22.8 years; number of examinations held, 24; certificates issued —life-grade, 8; first grade, none; second, 56; third, 88; total, 389; permits issued, 43. Amount contributed by the districts, $181,048.83; State appropriation, $33,058.82; total, $213,104.16; amount paid for salaries, $252,501.32; value of school-buildings, $449,965; grounds, $90,952; furniture, $47,148; total, $600,965; number of schools using patent furniture, 276.

The annual report of the State Superintendent of Free Schools says there is a necessity in the cause of public education, and the schools are steadily advancing. During the past two years, over $125,000 has been spent in the erection of better and more commodious school-buildings; but a majority of the school-buildings are still unfit for school purposes. In regard to teachers' institutes the report says:

It is impossible for me to set forth the good that comes of the county institute. In our State, especially, is its value inestimable. We have no normal school for the training of those who desire to become teachers, therefore when the young enter the profession they are almost wholly unprepared, so far as methods of teaching are concerned. And the county institute acts as the substitute for the normal schools, and much good has resulted, not only to the young teachers, but also to those who have had many years' experience.

Constitutional Amendments. — On this subject, the Governor, in his message to the Legislature of 1885, says:

The General Assembly, at the last session, with great unanimity, agreed upon what were deemed, after mature and deliberate consideration, proper amendments, three in number, to the Constitution of the State. These amendments having been approved by me, and published as the Constitution requires, are now before you for ratification, if you should judge it wise that they become a part of the organic law. The first proposed amendment is a provision for a General Incorporation Act, with exception of railroads and canals. As the propriety of this amendment seems to be conceded by all parties, as far as public dis-
cussion is concerned, or, I may say, by silent acquiescence, your attention is directed to it without further comment, except to recommend it as a wise measure, and one that will prove beneficial to the industrial interests of the State. A second proposed amendment is a proposition for increased representation. This amendment received general discussion in the county of New Castle, whose interests are more closely connected and affected than either of the other counties. I think it fair to accept the popular verdict, as rendered at the last election throughout the State, but especially in the county of New Castle, where the great manufacturing interests are centered in the city of Wilmington, and the large and influential body of voters representing and voicing the agricultural interests of the county, united in proclaiming the ascent of the people to the change. I gave my approval, believing the proposed change a fair, equal, and just recognition of all the interests affecting both county and State, considering that whatever concerns the legislation and representation of a county or section must be subordinate to the general welfare of the entire State. I believe the proposed amendment is demanded by the exigencies of the times. I believe the recognition of the interests of the important and growing city of Wilmington, in the proposed increased representation for that city, is in keeping with a sound State policy, and will meet the long-expressed wish of the people in the city and rural portions of the county, and will constitute, if ratified, a wholesome check on class legislation, and perpetuate the name of Delaware as a government of good, just, and well-ordered government. In the matter of the third and last proposed amendment, the reform of the judiciary system of the State, I would advise that you take into consideration the fact that it has been approved by almost the united bar of the State. Certain it is that there must be a change in our present system in its adaptation at least to the wants of the people of New Castle county. This seems to be generally conceded, and many changes have, from time to time, been suggested to meet the emergencies of the case, but none of them met with general favor. I believe under the present system it is admitted that, by reason of the additional labor and expense attending the sessions of the courts, increased by number and length of term in New Castle county, an increase of the salaries is imperatively demanded and must be acceded to, or this important branch of the public service must suffer and become weakened. Heartily believing that the adoption of this last amendment will prove a public benefit, I commend its ratification by your honorable body.

Political.—The Republican State Convention met in Dover on April 17, and chose delegates to the National Convention of the party. The Democratic State Convention met in Dover on the 17th of June, chose delegates to the Democratic National Convention, and pronounced in favor of Senator Bayard as presidential candidate. Another Republican State Convention, held in Dover on the 80th of September, nominated candidates for presidential electors, and, for Congress, Anthony Higgins. With respect to the proposed constitutional amendments, this convention passed the following resolutions:

Resolved, That this convention advises the ratification of the amendments proposed to Article VI of the Constitution relative to the judiciary, as necessary to the establishment of a proper judicial system. The obvious defects of the present Constitution demand the adoption of some adequate remedy, especially in the construction of the Court of Errors and Appeals; and the accumulation of business consequent upon the increase of population and the development of new and varied branches of industry require that the energy of each of the judges should be devoted to the consideration of the legal matters arising out of the exigencies of a growing community. The provisions of the existing system are cumbersome and antiquated, and should be molded into the form which the experience of other States has shown to be safe and judicious.

Resolved, That we disapprove the amendment proposed by the General Assembly of this State to Article II, as being unjust, illusory, and mischievous: it is unjust, because it discriminates between citizens, and denies to the people residing in different sections the equality of representation to which they are entitled; it is illusory, because it falsely pretends to be an equitable remedy for existing wrongs; and it is mischievous, because, if ratified, it will postpone for a generation the adoption of just and adequate measures of reform. Instead of this scheme, which is but a pernicious device to secure the possession of political power, the Republican party proposes the division of the State into separate senatorial and representative districts, allotting to each its just and equal proportion of each, and providing that the Senators and Representatives shall be chosen by the people thereof, thus insuring equality of representation as among the citizens residing in different localities, securing such representation to the various sections according to their political views, and destroying the baneful influence of county prejudices and the undue preponderance of disproportionate county population.

At a Democratic State Convention, held in Dover on the 1st of October, Charles B. Lee was renominated for Congress, and candidates for presidential electors were named. The platform endorses the constitutional amendments. On the 9th of November, Mr. Lee was re-elected by a vote of 17,064 against 11,978 for Higgins. The following was the vote for presidential electors: Republican, 12,581; Democratic, 16,964; scattering, 61. The Legislature is wholly Democratic.

DENMARK, a kingdom in northern Europe. The Constitution is embodied in the charter of June 5, 1849, which was modified in 1855 and 1868, but restored in an altered form in 1866. The executive power is exercised by the King, through a responsible ministry, and the legislative power by the Rigsdag or Diet. The upper house is called the Landsting, which consists of 66 members, of whom 12 are nominated for life by the Crown, from actual or former representatives in the legislature, and the remainder are elected indirectly by the people for the term of eight years. The popular chamber, called the Folketing, consists of 102 members, elected by direct universal male suffrage for three years. The only classes debarred from the franchise are those who have been recipients of public charity and persons in service who have no households of their own. The former class can regain the right by repaying the sums received. The limitation of age is thirty years. The Folketing decides in the first instance on all money bills presented by the Government. The Rigsdag meets annually on the first Monday in October. The Landsting appoints every four years four of its members to form with the judges of the Supreme Court the Rigaret, which is the highest tribunal, and has cognizance of legislative impeachments.
DENMARK.

The Government.—The reigning King is Christian IX, born April 8, 1818, fourth son of Duke William of Schleswig-Holstein-Sonderburg-Blankenburg. He was appointed to the succession by the Treaty of London, concluded May 8, 1832, and the Danish law of succession in 1838, and succeeded to the throne on the 30th of Frederick VII, Nov. 15, 1853. The heir-apparent is Frederick, born June 8, 1843. The ministry, first organized June 11, 1875, composed of the following members: J. B. Estrup, Minister of Finance and President of the Council; E. V. R. de Sedeel, Minister of the Interior; J. V. M. Nollemann, Minister of Justice and Minister for Iceland; Baron O. D. Rosenørn-Lehn, Minister of Foreign Affairs, appointed Oct. 11, 1875; Commander N. F.avn, Minister of the Navy, appointed Jan. 4, 1879, and since April 1, 1881, Minister of War; F. Scavenius, Minister of Worship and Public Instruction, appointed Aug. 24, 1880.

Finance.—The budget laid before the Rigsdag in November showed as usual a flourishing state of the public finances. The revenue is estimated at 54,683,000 crowns, the expenditure at 52,787,000 crowns. There was a reserve fund of 19,000,000 crowns, and a balance in the Treasury of not less than 47,500,000 crowns. The public debt does not exceed 197,000,000 crowns, held almost exclusively by the nation. The ministers asked for 18,653,000 crowns for military and naval affairs, items that are invariably cut down by the Folketing. An extraordinary grant of a large sum for the construction of fortresses was demanded, notwithstanding the rejection of the loan, involving the expenditure of 72,000,000 crowns, for the second time in April, and the ministerial losses in the subsequent elections.

Constitutional Crisis. — The Estrup Cabinet, which was appointed in 1875, was in the minority in the lower house from the beginning. It was selected from the Conservative party, which enjoyed the support of the King and possessed a majority of the votes in the Folketing, while the Folketing, in accord with the principle of responsible government, and appoint a minister a majority in the sentiment of the country. The King tried to force the King to recognize the principle of responsible government, and appoint a minister a majority in the sentiment of the country. The King despite the Government was carried a majority in the Folketing in 1883 they took a decided stand, refusing to vote supplies. The King then dissolved the Rigsdag, but each time called himself confronted with a stronger Liberal majority. He then decreed a provisional budget. In the following session, 45 out of 50 Government bills were buried in committees. Measures emanating from the majority in the Folketing were in return rejected by the Folketing. The result of the general elections of June, 1884, disappointed the hopes of the Conservatives that the constituencies would redeem the Liberals for bringing on a legis- lative deadlock. The Liberals, who held, the previous session, 73 out of the 102 seats, now returned with 83 members. Copenhagen, which always before elected none but Conservatives, now gave half its votes to the Liberals and sent five Liberal deputies to the Folketing, including two Social-Democrats. The session of the new Rigsdag was interrupted by the burning of the castle of Christiansborg in the beginning of September, and was reopened in October 5. The King for the first time in several years opened the Parliament in person and delivered the customary speech from the throne. He showed no intention of changing his ministers, but appealed to the Rigsdag to approve the oft-rejected project of national defense. The plan is to surround Copenhagen with a ring of fortifications. The Liberals voted against it in former sessions, not merely for purposes of obstruction, but because they believed that these costly fortifications would add but little to the defense strength of the country. Another project over which the ministry and the majority took issue was that of endowing a state university. The majority voted money for an agricultural college and technical schools, but questioned the utility of state-supported classical education. Although united on these, the chief points in the ministerial programme, the Liberals are supposed by the King and the ministers to be incapable of commanding a working majority and carrying on the Government for any length of time, owing to a division, from religious differences, between the Foreign Minister, leader of the Moderate Liberals, and the section of advanced views, called the Literary Left, or the Europeans, of which the foremost representatives are Dr. E. Brandes and Hörup.

The Ministry.—The ministry, constituted June 11, 1875, is composed of the following members: President of the Council and Minister of Finance, J. B. S. Estrup; Minister of the Interior, S. H. S. Finsen; Minister of Justice and Minister for Iceland, J. M. Nollemann; Minister of Foreign Affairs, Baron O. D. Rosenørn-Lehn, appointed October 11, 1875; Minister of Marine, Commander N. F. von Aarn, appointed January 4, 1879; Minister of War, Colonel J. J. Bahnsen, appointed September 12, 1884; Minister of Worship and Public Instruction, J. F. von Scavenius, appointed August 24, 1880.

Area and Population.—The area of the kingdom of Denmark is 13,784 square miles; the population, 1,969,039, of which number 234,850 live in the city of Copenhagen, 866,878 in the islands of the Baltic, and 686,511 in the Peninsula of Jutland. The total population was divided as to sex into 987,860 males and 1,001,179 females. The increase in fifteen years was 10.29 per cent. in the cities, and 5.99 per cent. in the rural districts. The proportion who live by agriculture is 49.5 per cent. The land is greatly subdivided under the operation of laws that forbid the consolidation of farms into landed estates. The emigration is mainly to the United States, and has become
considerable in recent years: in 1880, 5,687; in 1881, 7,985; in 1882, 11,614.

The dependencies of Denmark are the Faroe Isles, of which the seventeen habitable ones have an area of 512 square miles, and a population returned in 1880 as 11,221; Iceland, with an area of 40,800 square miles, of which 16,100 are habitable, and a population of 72,445; Greenland, with a habitable area of 83,800 square miles and 9,757 inhabitants; and the Danish Antilles, of which Santa Cruz has an area of 82 square miles, St. Thomas of 33 square miles, and St. John of 20 square miles, the population of the three numbering 83,768.

Army and Navy.—The total war strength of the army in 1888 was 50,502 officers and men. Military service is universal and obligatory, beginning at the age of twenty-two, and lasting sixteen years, eight in the line or first ban, and eight in the reserve or second ban. Only a few months of drill and participation in the manoeuvres are actually required. With the colors is kept simply a force necessary for garrison duty.

The steam navy numbered 2 ironclad frigates, 3 floating batteries, 3 casemated vessels, 2 torpedo-vessels, and 35 gunboats, torpedo-boats, and unarmored vessels.

Commerces and Navigation.—The imports in 1888 amounted to 258,100,000 crowns, the exports to 188,000,000 crowns (1 crown=36-8 cents). Articles of food were imported to the value of 88,900,000 crowns and exported to the value of 137,200,000; the imports of raw materials amounted to 60,800,000, the exports to 28,800,000 crowns; the imports of manufactured articles to 33,400,000, the exports to 10,800,000 crowns; the imports of machinery, implements, and other means of production to 25,700,000, the exports to 12,100,000 crowns. Of the total imports 97,461,000 crowns came from Germany, 86,607,000 from England, 81,828,000 from Sweden, and 11,917,000 from the United States. Of the total exports the value exported to England was 73,827,000 crowns; to Germany, 60,061,000; to Sweden, 26,685,000; to Norway, 12,184,000; to the United States, 7,608,000. The gross tonnage of long-voyage vessels entered in 1882 was 1,532,066, the steam tonnage included in this figure, 705,554 tons; tonnage cleared, 500,077; steam tonnage, 589,565; coasting tonnage entered, 417,466; cleared, 419,426.

The merchant fleet consisted in 1883 of 2,974 sailing-vessels, of 194,422 tons, exclusive of vessels of 4 tons and under, and 240 steamers, of 70,735 tons.

Railroads, Posts, and Telegraphs.—The length of railway in operation in 1884 was 1,769 kilometres, of which 1,401 kilometres belonged to the state.

The number of letters forwarded in 1888 was 27,539,000; of postal-cards, 497,000; of journals, 80,737,000; receipts of the post-office, 4,983,201 crowns; expenses, 4,584,795.

The length of the state telegraph lines in 1898 was 8,355 kilometres, with 10,106 kilometres of wire; the number of dispatches in 1898 was 1,316,300, 486,765 internal and 892,062 international, the rest dispatches of service and in transit.

Dogs.—The total receipts of the Treasury in the year ending March 31, 1892, were 51,198,976 crowns; expenditures, 49,784,978 crowns. Receipts in 1882-83, 68,624,340 crowns; expenditures, 60,749,749 crowns. The budget for 1884-85 places the total receipts at 82,700,908 crowns, the expenditures at 45,998,953 crowns. Of the receipts, 769,773 crowns are the net profits of the domains, 405,458 of the forests, and 5,657,308 of the railroads and other state assets; 9,307,900 the yield of direct taxes, and 85,518,000 of the indirect taxes. In the budget of expenditures the public debt stands for 9,724,400 crowns, war expenses for 9,240,817, naval expenses for 5,769,084, the civil list for 1,225,760, civil pensions for 2,628,460, and military pensions for 992,973. The internal debt in 1883 amounted to 166,658,576 crowns, the foreign debt to 18,684,667 crowns, offset by assets valued at 88,649,082 crowns. The cost of the state railroads completed up to March 31, 1888, was 105,398,928 crowns.

DOGS.—Dog-shows have been an institution in this country and in England for many years. The bench-shows are generally held in winter or spring, as the animals are in their best health at those seasons, and are often held in connection with shows of poultry, pigeons, and other pets. The popularity of dog-shows has so increased that every city of any size now has a show at least once a year. The first dog-show of any account, or of which there is any record, was held in Newcastle, Eng., in 1855. A bench-show of dogs is generally given by a kennel club. In this country the principal bench-show is given by the Westminster Kennel Club. The most notable dog-shows have been held at the Crystal Palace, in London, and at Madison Square Garden, New York; in the latter annually for the past six or eight years. The entries in some of the shows have been very numerous, one race of long-voyage vessels entered at the Garden having over 1,000 names. At the last dog-show at the Crystal Palace there were 1,828 dogs competeing. One of them, a St. Bernard, was valued at £10,000, and, strange to say, his only superior in money value was a tiny toy terrier, valued at £20,000. Large sums are given as the totals of premium-lists offered at bench-shows, but many of the prizes are given by outsiders, generally for one of two reasons: either to help along a particular breed, or to react as an advertisement of the donor. The bench-show in New York, in May, 1884, was very successful as an exhibition of dogs, but, owing mainly to the bad weather, was not a financial success. The object of dog-shows is not to make money, but to increase the interest in dogs, and give a chance for breeders from all parts of the world to compare speci-
by so doing improve the breeds. A
first bench-show in Newcastle, the
only their judgment and memory
out the best dogs, and as dog-shows
equently the doctors (as the judges
called) frequently disagreed, there
y cases on record where a dog that
had not even been highly com-
fourth or fifth prize), in another
first prize, and very likely against
e same competitors. From this
and in order to give a chance to
swimmen properly and accurately, a
judging by points was invented. This
robably the one essential thing with-
or something very like it, dog-shows
or have reached their present in-
sition. A number of essential points
are taken, and a numerical value is
ach. If a dog can be found per-
parts—color, coat, and markings
I score 100. First-class champions
classes have been scored repeated-
different judges, as high as 984.
It
very hard for even an expert to find
in a dog scoring as high as 97.
way to give any account of dogs
short description of each variety
ized by what might be called
ard of excellence—which the Eng-
riety on dogs, Stoneshenge, has come
ountry. In a regular bench show
iner Kennel Club, prizes are of-
numerous breeds of dogs, including
described, and the last premium-list
b has entries for different premiums
119 classes of dogs. There is not
ber of breeds that are different
ade for dogs, bitches, puppies, and
unbroken specimens, in some of the
what is called a champion class be-
ed for extra dogs of any of the vari-
er show were in their infancy,
or in some cases a medal, as a prize,
ered all the recompense that an ow-
ator could desire. Now, however, a
ze, varying as an important show
$35, is given to the best repre-
of each class, while a silver or gold
rds the winner of second place,
rd and fourth best dogs are awarded
cribed with the name of the dog and
9 was very highly commended," or
ounced, or "the case may be.

DOGS. (ENGLISH SETTER). 255

settters. The points of the English
Described as follow:
has a character peculiar to itself, some-
esen those of the pointer and the cocker-
so heavy as the former is much larger than
It is without the prominence of the oo-
so remarkable in the pointer, is also nar-
the ears, and there is a decided brow-
. The nose should be long and wide,
without any fullness under the eyes. There should
be in the average dog-setter at least four inches from
the inner corner of the eye to the end of the nose.
Between the point and the root of the nose there
should be a slight depression (at all events, there
should be no fullness), and the eyebrows should rise
sharply from it. The nostrils must be wide apart,
and large in the openings, and the end should be
moist and cool, though many a dog with its sensibly
good scenting powers has had a remarkably dry nose,
amounting in some cases to roughness like that of
shagreen. In all setters the end of the nose should
be black, or dark liver-colored, but in the very best-
bred whites or lemon and white pies is often met
with. The jaws should be "snipe-nose," or "pig-jaw," as the receding lower
one is called, being greatly against its possessor.
The ears should be shorter than the head and rounded
but not so much as those of the spaniel. The "feather"
should be thin and soft, carried close to the
cheeks, so as not to show the inside, without the
slightest tendency to prick the ear, which should be
cloaked with silky hair little more than two inches in
length. The lips also are not so full and pendulous
as those of the pointer, but at their angles there should
be a slight fullness, not reaching quite to the extent
of holding. The eyes must be full of animation, and
of medium size, the best color being a rich brown,
and they should be set with their angles straight-about.
The neck has not the full rounded muscularity of the
pointer, being considerably thinner, but still slightly
arched, and set into the head without that prominence
of the occipital bone which is so remarkable in that
dog. It must not be "throsty," though the skin is
loose. The shoulders and chest should display great
liberty in all directions, with sloping, deep shoulder-
blades, and elbows well let down. The chest should
be deep rather than wide. An arched back is not
objec-
table, but not to the extent of being "reached" or
"wheel-backed," a defect that generally tends to a
slow up-and-down gallop. Stifles well set up and
wide apart, to allow the hind-legs to be brought for-
ward with liberty in the gallop. The elbows and
toes, which generally go together, should be straight,
and if not, the "pigeon-toe" or inturmed leg is less
objectionable than the out-turn, in which the elbow
is confined by its close attachment to the ribs.
The arm should be muscular, and the bone fully de-
developed, with strong and broad knees, short pasterns,
of which the size in point of bone should be kept
as possible, and their slope not exceeding a very slight
deviation from the straight line. The hind-legs
should be muscular, with plenty of bone, clear, strong
hooks, and hairy feet. A great difference of opinion
exists as to the comparative merits of the cat-foot and
the hare-foot for standing work; but bound-rearers
invariably select that of the cat. But, as setters are
especially required to stand wet and heather, it is
imperatively necessary that there should be a good
growth of hair between the toes. The flag is in ap-
pearance very characteristic of the breed, although
it sometimes happens that one or two pinnies in a well-
bred litter exhibit a curl or other malformation, usu-
ally considered indicative of a stain. It is often com-
pared to a cimeter, but it resembles it only in respect
of its narrowness, the amount of curl in the blade of
this weapon being far too great to make it the model
of the setter's flag. The feather must be composed
of straight, silky hairs, and beyond the root the less
short hair on the flag, the better, especially toward
the point, of which the bone should be fine, and the
feather tapering with it. In character the setter
should display a great amount of "quality," and
be difficult of explanation, though fully appreciated
by all experienced sportmen. The general outline
is very elegant, and more taking to the eye of the
artist than that of the pointer. The texture and feather
of coat are much regarded among the setter-breeders, a
soft, silky hair without curl being considered a nice
qua. The feather should be considerable, and
should fringe the hind as well as the fore legs. The color of coat is not much insisted on among English setters, a great variety being admitted.


golden Setter.—The points of the black-tan setter are very nearly the same as those of the English dog, the only deviation being as follows:

The skull is usually a little heavier than that of the English setter, but in other respects it resembles it. The nose, also, is like the English setter, but it is usually a trifle wider. The flag is usually a trifle shorter than that of the English setter, which otherwise resembles in shape. The coat is generally harder and coarser than that of the English or Irish setter, occasionally with a strong disposition to curl, as in the celebrated champions Reverend and Regent. The color is much insisted upon. The black should be rich without mixture with the tan, and the latter should be a deep mahogany-red, without any tendency to fawn. It is admitted that the original Gordon's were often black, tan, and white, but, as in all the shows we see the colour is limited to black-tan, the long arguments that have been adduced on that score are now obsolete. The whole skull and ears, and a white toe or two, are not objected to; but a decided red is considered by most judges to be a blemish. The red-tan should be rich, throat severe, seen over the eyes, forelegs nearly to the elbows, hind-legs up to stifles, and on the under side of the flag, but not running into its long hair.

Irish Setter.—In its points the Irish setter only differs from the English in the following:

The skull is somewhat longer and narrower, the eyebrows being well raised, and the occipital prominence as marked as in the pointer. The nose is a trifle longer, with good width, and square at the end, nose, also, is like the English setter, but it is usually a trifle wider. The eyes should be brown, and the whites of the eyes to be avoided. Ears long enough to reach within half an inch or an inch of the end of the nose, and, though more tapering than in the English dog, never coming to a point; they should be set low and close, and not approaching to the hound's in setting. The ears are long and sloping; bristled deep, and never wide; and his back ribs are somewhat shorter than those of his English brethren. Loin good, slightly arched, and well coupled to his hips, but not very wide; quarters slight sloping, and muscular but not heavy hamstrings. The feet are hare-like, and moderately hairy between the toes. The flag is clothed with a long, straight comb of hair, never bushy or curly, and this is beautifully displayed on the point. The coat should be somewhat coarser than that of the English setter, being midway between that and the black-and-tan, wavy but not curly, and by no means long. Both hind and fore legs are well feathered but not profusely, and the ears are furnished with feather to the same extent. The black should be a rich black-red, without any trace of black on the ears or along the back; in many of the best strains, however, a pale color or an occasional trace of black is shown. A little white on the neck, breast, or toes is by no means objectionable, and there is no doubt that the preponderance of white, so as to constitute what is called "white and red," is met with in some strains.

Painter.—The most approved poir described as follows:

The skull of good size, but not as heavy as the old Spanish pointer, and in a lesser degree bred descendants; wider across the ears, the latter, with the forehead rising well at, showing a decided "stop." A full develop of the occipital prominence is indispensable; upper surface should be in two slight room with a furrow between. The nose should (4 to 4 inches) and broad, with wide-open fawn. The end should be moist, and, in health, the touch. It should be black, or very dark, in all but the lemon and white; but it may be a deep flesh-color. It should be square, the touch meeting evenly. Ears so moderately long, and thin in leather, not to the hound's, but lying flat and close to the head and set on low, without any tendency to curl, and of medium size; color brown, v shade with that of the coat. Lips well and fresh with nose at show, but not pink or like. The neck should be arched toward the and round, without any approach to the slenderness. The shoulders are dependent on each other for their strength. They should be strong, not blades lying flat against its sides; and, instead of this, and their sloping backward ought to do in order to give free action, the right, short, and fixed. Of course, a certain required to give room for the lungs, but the required should be obtained by depth rather are being asked, not square, the touch meeting evenly. Ears so the head, but by length, having a slight arch, behind the blades the ribs should, however, areched, but still deep. Depth of back rib is more important. The loin should be very slightly full and muscled; should run well back ribs; the hips should be wide, with a square haunch, and the quarters very slightly from them. These last must firm muscle, and the stifles should be well carried wide apart, so as to allow the hind brought well forward in the gallop, instituting of action that does not tire. The legs, till the hocks must act in the straight line of the Substances of bone is therefore demanded, the shanks but in the joints, the knee and. and large specially required to be bony. The elbow be well let down, giving a long upper arm, as not to be turned in at the point, and the joint, as at the elbow. The elbow limitates the act reverse is the case with the hocks, which turn in rather than out. Both hock and should be short, nearly upright, and full Breders have long disputed the comparative qualities of the round- or jointed, found the resembling that of the hare. In the pointer opinion is in favor of the cat-foot, with the arched and close together. This is the do of the M. F. H., and I think stands work be the hare-foot, in which the toes are not as still lie close together. In the setter the toe of hair to a certain extent condones the weakness of the hare-foot; but in the points supreme the scale of the pads compared with the thick horny covering. The stern must be bone ar, and by no means large. The toes in size as it leaves the body, and then gradually a point. It should be very slightly curved, little above the line of the back, and the slightest approach to curl at the tip. Of and quality the pointer should display go portion, as not to show more difference the "gentleman" and his opposite. The coat in the pointer should be soft and m not absolutely wet. In color there is a choice, in point of fashion, between the

slide
DOGS. (IRISH WATER-SPANIEL, WAVY-OAETED RETRIEVER, DEER-HOUND.)

whites. After them come the black and / or without tap/], then the pure black, a dog tree-licked is, per-

posh beautiful color of all.

deer-Spaniel—The Irish water-spaniel is a useful dog for wild-fowl shooting in

These spaniels, if properly trained, east tractable and obedient of all dogs, as in a marked degree the invaluable of never giving up or giving in.

is by no means long, with very little brow, tely wide. It is covered with curls, rather more open than those of the body, nearly , but not so as to be wiggled. The poor-

very long, and quite bare of curl, the hair is smooth, though not glossy; nose nostril well developed; teeth strong and

and set almost flush without eyes. The top knot is a characteristic of the true is estimated accordingly. It should fall d over the eyes in a peaked form. The g, the feathering, extended when drawn forl

beyond the eyes, and the ears, when held to the side and the ears, are clothed two or three inches beyond. re thickly covered with curls, which grad-

beneath, the tips of the ears are in small width of similar substance. The most cross, straight giving an apparent-

times. The legs should be straight and the b but strong; the toes are somewhat open, d with short, crisp curls. In all dogs of the legs are thickly clothed with short dly pendent behind and at the sides, and then all round, hanging in ringlets for before the annual sheeding. No feather f the setter should be shown. The front of the lower the hocks is always bare. The tail lark at the root, where it is clothed with very

Beyond the root the hair is short, so as if the tail had been slipped, which it some-

nor shows, but the natural bareness of the as characteristic of the breed. The coat is short, with, not woolly, which reveals r-cross. A soft, floppy coat is objected to as of admixture with some of the land-span-

color must be a deep, pure liver, without t, as in other breeds, a white toe will com-

were even on the boot-tread litter. The re of this dog is not very great.

aksed Retriever.—The points of this he following:

all should be long, wide, and flat at the top, y slight furrow down the middle. Stop by pronounced; but the brow not absolutely g line with the nose. The nose and jaws are conserved from two points of view—first, as ers of scent; and, secondly, as to the ca-

sifying a hare or a pheasant without risk s. For both purposes the jaws should be for the development of scenting-powers the skid be wide, the nostrils open, and its end 1 cooling. The ears must be small, to suit the Labrador fancier. With the set-and-cross considerably larger. In any case, they close to the head and be set on low. With the hair on them, it must be short in the but in the set-and-cross it is nearly as long seither itself. The eyes should be of medium /gent, and mild, indicating a good tempera-

lower be the breed of this dog, his neck long enough to allow him to stoop in seek-

a trail. A clumsy neck is especially bad; a long, fairly set on, a fine, well-contm-

rt neck, a comparatively large and unwieldy itself terribly, by the necessity for eough a fast pace. The limbs and back must be

wide and deep to enable the retriever to carry a hare over a stone wall, a brook, or a gate. The quarters and sides must be muscular for the same reasons and to enable the retriever to do his work fast enough to please the modern sportsman, with ease to himself, the sides should be set wide apart. The shoulders should be long and sloping; otherwise, even with a proper length of neck, the dog can not stoop to a foot-c

without fatigue. The chest should be broad as well as deep, with well-developed back ribs. The legs must not only be long and muscular, but they must be clean and free from gumminess. The knees should be broad, and the hocks well developed and clean. The feet are rather larger proportionately than in the setter, but they should be compact, and the toes well arched, soles thick and strong. The tail in the "Bond Moore" type should be bushy and not feathered, which is the sign of a setter-cross. It should be carried gavly, but not curled over the back. The coat is short, but not so short as in the pointer or the hound; set close, slightly wavy and glossy. The walk of the Labrador is not so loose and shambling as that of the large Newfoundland. The evidence of good temperemperament should be regarded with great care, since the utility of this dog mainly depends on it. A sullen-brained, with a vicious look about him, should at once be penalized to the full extent of this point; and a retriever shown with a muzzle on, as has often happened, should be regarded with great suspicion. A dog may be so savage in a show as to require a muzzle, yet perfectly mild and inoffensive in the field; but such cases are exceptional. The color should be a rich black, free from rustiness. In many good imported dogs there is a white star on the breast and a white toe or two ; but in the foxhounds breeders now prefer a total absence of white, and this point is therefore to be estimated accordingly, as long as Dr. Bond Moore and his successors maintain their position.

Deer-Hound.—In its skull the deer-hound re-

sembles the large, coarse greyhound, it being long and moderately wide, especially between the ears. There is a very slight rise at the eye-

brows, so as to take off what would otherwise be a straight line from tip of nose to occiput. The upper surface is level in both directions. The other points of the dog are as follow:

The jaws should be long, and the teeth level and strong; nostrils open, but not very wide, and the end pointed and black; cheeks well clothed with short hair, but the bone under the eye neither prominent nor hollow. The ears should be small and thin, and carried a trifle higher than those of the smooth greyhound, but should turn over at the tips. Pricked ears are sometimes met with, as in the rough greyhound, but they are not correct; they should be thinly fringed with hair at the edges only; that on their surfaces should be soft and smooth; eyes full and dark brown, sometimes by preference blue. The neck should be long enough to allow the dog to stoop to the scent at a fast pace, but not so long and tapering as the grey-

hound's. The chest is deep rather than wide, and in its general formation it resembles that of the grey-

hound, being shaped with great elegance, and at the same time so that the shoulders can play freely on its sides. The girth of a full-sized dog deer-hound should be at least two inches greater than his height; but a round, unyielding chest is not to be desired, even if girthwell. Shoulders long, oblique, and muscular. A deep and wide development of muscle filling up the space between wide back ribs and somewhat rugged hips is a dosidderatum. A good loin should measure twenty-five or twenty-six inches in show condition. The buck ribs are not to be too shallow, but they must be wide, or what is called "well sprung,” and the loin should be arched, drooping to the root of the tail. The elbows and stifles, if well placed, give

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great liberty of action, and the contrary if they are confined by being too close together; these points, therefore, should be carefully examined. The elbows must be well let down, to give length to the true arm, and should be quite straight. The staves should be wide apart, and set well forward, to give length to the upper thigh. The high symmetry of this dog is essential in the position as a companiable animal. Great bone and muscle must go to the formation of the legs and quarters; and the bones must be well put together at the knees and hocks, which should be long and well developed. The quarters are deep, but seldom wide, and there is often a considerable slope to the tail. Some of the most successful dogs lately exhibited have been nearly straight-backed; but this shape is not approved by deer-stalkers. The feet should be well arched in the toes, and cat-like; a wide-spread foot is often met with, but they should be specially condemned. The colors most in request are dark blue fawn, black, and brindled, the latter with more or less tint of blue. The fawn should have the tips of the ears dark, but some otherwise good fawns are pale throughout. The grizzle generally has a decided tint of blue in it. White is to be avoided either on breast or toes, but it should not disqualify a dog. The coat is shorter on the back than elsewhere; and by many good judges it is thought that even on the back it should be intermediate between silk and wool, and not the coarse hair often met with; and there is no doubt that both kinds of coat are found in some of the best strains. The whole body is clothed with a rough coat, sometimes amounting to shagginess; that of the muzzle is longer in proportion than elsewhere, but the coat should not be wiry, and should stand out in irregular tufts. There should be no approach to feather on the legs, as in the setter, but their inside should be hairy. The tail should be long and gently curved, without any twist. It should be thickly clothed with hair only.

Fox-Hound.—The essential points of a good fox-hound are these:

The head should be of full size, but by no means heavy; brow pronounced, but not high or sharp. There must be good length and breadth, sufficient to give, in the doghound, a girth in front of the ears of fully sixteen inches. The nose should be long (four and a half inches) and wide, with open nostrils. Ears set on low, and lying close to the cheeks. The neck must be long and clean, without the slightest throatiness. It should taper nicely from the shoulders to the head, and the upper outline should be slightly convex. The shoulders should be long and well clothed with muscle, without being heavy, especially at the points. They must be well sloped, and the true arm between the front and the elbow must be long and muscular, but free from fat or lumber. The chest should girth over thirty inches in a twenty-four-inch hound, and the back ribs must be very deep. The back and loin must both be very muscular, running into each other without any contraction or “nipping” between them. The couples must be wide, even to ruggedness, and there should be the very slightest arch in the loin, so as to be scarcely perceptible. The hind-quarters or propellers are required to be very strong, and as endurance is of more consequence than speed, straight staves are preferred to those much bent, as in the greyhound. Elbows set quite straight, and neither turned in nor out, a pus sore. They must be well let down 1 of the long true arm. Every master of foxhounds insists on legs as straight as a post, and a size of bone at the ankle being specially as all-important. The desire for straight think, carried to excess, as the very some knuckles over, and this defect may be seen in more or less in old stallion but bone can not, in my opinion, be too large; for a slight ankle at the knee is a pernicious line. The feet in all cases should be round like, with well-developed knuckles and astragalus, which last is of the utmost importance, and coat are not regarded as very important, the former is a “hound-color,” and the latter dense, hard, and glossy. Hound-colors are a blue and white, black and white, and the various compounds of white and the color of the hound, or yellow, or tan. The stern is genial carried gayly over the back, and slightly fris on the side. The end should taper to a point. The symmetry of the fox-hound is considerable, and is called “quality” is highly regarded.

Basset-Hound.—Mr. Everett Mills, first man to bring the breed of Basset into notice, by exhibiting specimens Crystal Palace show in London, six years ago. Considerable excitement and a new was caused in canine circles, and the was pronounced by many to be an old turnspit, or an abnormal Dachshund.
one of Basset-hounds are given by Du x, in his "La Vénerie." Du Foulleux
them into two varieties: the Artesian, full-
footed, crooked fore-legs, smooth coat,
and having double rows of teeth, like
the Flemish, "straight-legged, rough-
black, and stern curled like a horn.
In France they are fully approa-
ded much in use, deer and roe buck driv-
ging their particular work. Where the
head legged are found to be a little
demi-torse always have speed enough
spare. They are capital to shoot any
for to, especially hare and rabbits, and
employed to put up birds. Basset-
are not quick breasters, and from in-
require much care in rearing.
nd is most perfect when it closest resembles
a blood-hound. It is long and narrow, with
waist prominent, and forehead writhe-
be eyes, which should be kind and show the
se general appearance of the head must be
pose dignity. The teeth are small, and
jaw sometimes protrudes, which is not is
called the "be de lievre." The ears
long, long enough to fold well over the nose
when forward; so long that, in hunting,
actually treads upon his own ears. They
low, and hang loose, like folds of drapery:
thin and velvety. The neck is powerful,
y dawlpes. Elbows must not turn out. The
legs, long, and well framed. Body long and
short—about four inches, and close-
the chest—to the crooked knee, from where
led ankle ends in a massive paw, each toe
out distinctly. The stiles are bent, and the
full of muscle, which stands out so that,
look at the dog from behind, he is given
arrel-like effect. This, with their peculiar
gait, goes a long way toward Basset charac-
tility easily recognised by the judge, and as
se terrier character in a terrier. The stern
underneath, and carried in hound-fashion,
long, muscular, and taut, and has a gloss
that of a race-horse. To get this appearance
be hound-gloved, never brushed. The skin
delicate. The color should be black, white,
the head, shoulders, and quarter a rich tan,
patches on the back. They are also some-
plaid.
Ears.—The head is the peculiar feature
reeded; and I have accordingly estimated
very high rate. In the male it is large
dimensions but width, in which there
arkable deficiency. The minor points
all:
per surface is domed, ending in a blunt point
but; the brain-case is not developed to
extent as the jaws, which are very long and
a narrow width, and remarkably narrow
ly under the eyes. The brows are moderate-
ent, and the general expression of the whole
and and majestic. The skin overlying the
cheeks is wrinkled in a remarkable manner,
like that of any other dog. These points are
so fully developed in the bitch; but still they
are the same proportionate degree.
are long enough to overlap one another con-
who is of the nose; the nostril should be
very thin, and should hang for-
ward and close to the cheeks, never showing the
slightest tendency to "prick"; they should be cov-
ered with very short, silky hair. The eyes are gener-
ally hazel, rather small and deeply sunk, showing the
third eyelid or "haw," which is frequent, but not
always, a deep red; this redness of the haw is, as a
rule, an indication of blood-hound cross. The nerves
are remarkably long and pendent, sometimes falling
fully two inches below the angle of the mouth. The
neck is long, so as to enable this hound to drop his
nose to the ground without altering his pace. In
front of the throat there is a considerable dewlap.
The chest is rather wide than deep, but in all cases
there should be a good girth; shoulders sloping and
muscular. The back and back ribs should be wide
and deep, the size of the dog necessitating great power
in this department. The hips, or "couplets," should
be especially attended to, and they should be wide, or
almost ragged. The legs must be straight and muscular,
and the ankles of full size; but it is not to be expected
that the upright and powerful patters so dear to the
M. F. H. should be found in the blood-hound. The feet
are often flat, but they should be, if possible, round
and cat-like. In color the blood-hound is either
black-and-tan or tan only, as is the case with all black-
and-tan breeds. The absence of black is a great de-
feet, but many well-bred litters contain one or two tan
puppies without it. The black should extend to the
back, the sides, top of the neck, and top of the head.
It is seldom a pure black, but more or less mixed
with the tan, which should be a deep, rich red. There
should be little or no white. The coat should be short
and hard on the body, but silky on the ears and top
of the head. The stern, like that of all hounds, is
carried gayly in a gentle curve, but should not be
raised beyond a right angle with the back. The lower
side is fringed with hair about two inches length-
ing in a point. The symmetry of the blood-hounds, as
regarded from an artistic point of view, should be ex-
named carefully.

Saint Bernard.—The head of the Saint Ber-

ard is large and massive, but is without the
width of the mastiff's. The dimensions are
extended chiefly in height and length, the oc-
cipital protuberance being specially marked,
and, coupled with the height of brow, serving
also to distinguish it from the Newfoundland.
The other points are these:
The face is long, and not off square at the nose,
which is intermediate in width between those of
the Newfoundland and the mastiff. Lips pendulous,
approaching the blood-hound type, but not so.
Ears of medium size, carried close to the cheeks,
and covered with silky hair. Eyes full in size, but
deply sunk, and showing the "haw," which is stink,
and so that of the blood-hound. Great stress is laid by
the monks on the line of poll, which is supposed to re-
semble the white lace bands round the neck and
wrist of the gown worn by the Benedictine monks, the two
being connected by a strip carried up the back.
A dog marked with white in the same manner is sup-
posed to be peculiarly consecrated to his work, and
is kept most carefully to it. Hence it is in this country
also regarded as a characteristic of the breed, but it
is seldom met with in anything like a perfect state of
development; Monarque being more perfect in this
respect than any dog ever exhibited. The hair is
remarkable about the neck, except that there is
generally a certain amount of roughness, to which there
is no objection. The body is long and well propor-
tioned, with a full chest, the girth of which should
be double that of the head, and half the length of
the body from nose to tip of tail; the loin should be full,
and the hips wide. In size and symmetry this breed
should be up to a full standard, that is to say, equal to
the English mastiff. Indeed, in certain color, in,
dew-claws, and in the shape of head, the smooth
Saint Bernard very closely resembles that dog. He is generally more active, from having been more worked than his English compere, who for generations has been kept on the chain. Of course, in so large a dog the legs must be short and strong, while the feet also must be large, in order to avoid sinking through the snow. The last point is greatly insisted on by the monks, who prefer even what would be considered here a spay-foot to a small and compact one. There is no doubt that the double dew-claw on the hind-legs has in some way been introduced into the strain of dogs used at the two Alpine monasteries, but it is impossible to say how. Both Yell and Monarque exhibited this peculiarity, as well as most of the dogs admitted to be imported from the hospice. Gessler, however, showing every other point of the breed in a marked degree, had no dew-claw at all on his hind-lags, and his son Alp, though out of Hedwig, sister to Yell, was equally deficient. It is very doubtful whether this peculiarity is sufficiently permanent in any strain to be an evidence of purity or impurity. The temperament of the Saint Bernard is very similar to that of the mastiff—that is to say, if suitably managed, the dog is capable of great control over his actions, whether in the absence or presence of his owner. When kept on the chain, he is, like other dogs, apt to become savage, and there is almost always an instinctive dislike to tamce and vagabonds. He is a keen watch-dog and apt to think himself strong enough to his master or mistress. The color varies greatly. The most common is red and white, the white being preferred when distributed after the pattern described above. Fawn and white, and brindled and white, come next, and in some cases, the brindle is quite rich, with an orange-tawny shade in it, as shown in Yell, and a lesser degree by his nephew Alp, formerly owned by the monks. The brindle is mostly white, or very nearly so, as in the case of Hospice and Sir C. H. Isham's Leo. The coat in the rough variety is very over the body, the fur short on the legs, being generally silky, but sparsely so on the ears. In the smooth variety the depth and thickness are the points to be regarded.

Mastiff.—The Old English mastiff, like the bull-dog, was first bred in England. A well-broken mastiff may be taken out at all hours, and in any company, with the most perfect confidence in his protection. With children he is very gentle. Yet, when he is roused, and set at man or animal, his courage is second only to that of the bull-dog.

The head should be massive, with a broad and flat forehead, ears small and pendent, lying close to the cheek. They should be vine-shaped and set well back. The eyes are small, but mild and intelligent, and are generally brown or hazel. The muzzle must be short, with a level and square at the nose. There is sometimes a slight projection of the lower jaw, which may be overlooked; jaws deep. The neck should be muscular, and of sufficient length to avoid loss of symmetry; body large, with deep and wide chest, and a powerful loin. The legs should be straight, with long bone, feet round and close. The coat must be fine and short, a slight indication of roughness being allowed on the tail, which should be carried high when the dog is excited. The most desirable color is fawn (fawn) with black muzzle; next to this comes brindle, then red with black muzzle, or black; sometimes there is an admixture of white, which is certainly a defect, though not a great one. Height from twenty-nine to thirty-one inches in the dog, and even more if a fine symmetry can be combined. A dog standing twenty-nine inches ought to weigh, in good condition (not fat), from 120 to 130 pounds.

Colley.—The head, which resembles that of the fox, should be wide between the ears, tapering toward the eyes, which are in consequence set rather close together. The tail is flat, and there is little or no cephalic protuberance, and a very slightly brown; but the facial line is also straight. The volume of brain is conside and the skull looks smaller than it really consequence of the amount of fluff in the occiput is so marked. The other characteristics are as follows:

The muzzle is very tapering and lean, teeth and even, and the muscles of the jaw well defined. The whole face is covered with very short hair that is an abrasion. The coat is the prefeature in this breed, though sufficient stress laid upon this point by most judges. In the colley it should be shaggy and very thick, to create some difficulty in seeing the skin, but hair is separated by the hands with that fine underlying coat of woolly, which aids to the cutely. This under-coat is almost always light color than the upper, and even in those parts that are black outside it has a yellowish or brown tinge. Round the neck, and especially on its side, the outer coat is greatly lengthened, coverts in color is called a "ruff" or "frill," which is found no other English dog, but is well marked in the meranian. In the smooth colley the coat is hard, and very close. The color most common with is black-and-tan. In best breeds the bl seldom brilliant, showing the lighter color undercoat through, and often itself tinged with the face, spots over the eyes, breast, belly, and below the elbow and hocks, are tan, which be of a reddish-fawn rather than deep red ting the smooth colley the black is generally deeper richer, but the tan should be of the same ting extent. A good deal of white is met with in strays, and sometimes the tan is altogether a but, on the forelegs a black-and-tan color with much white is highly preferred. In both the whole body is sometimes tan, or tan mixed white. The tail is bushy, always has a decided and is carried gayly, though not over the back.

Bull-Terrier.—A bull-terrier takes after a retriever, and will learn tricks as
DOGS. (Fox-Terrier, Skye-Terrier.)

He is destined to be the pet dog, for stidies, in the future.

All should be long and flat, wedge-shaped, behind, with the smaller end at the place of which should not be still prominent. The occiput to the end of the nose should be as possible, without either brow or hollow of the eyes. This line is never absolutely but the nearer it approaches to a straight line the better. The jaws must be long and powerful, and black, though many otherwise first have had spotted or "butterfly" noses, tail, black, and sparkling. The upper lip should be as in or approach to chop being undesirable, or lip also should be small. The teeth should not be too full, nor too close together, free on the straight line. A pig-jaw is as great being underhung. The ears are always set low; they should be brought down exactly to match. In their uncropped state they should be in shape, and seldom reach their full size after being cropped. The neck should be long and well furnished with muscle, running back between the shoulder-blades in a firm line at each side. The fore-legs should be long, straight, and strong, with straight hocks placed close; the feet are rather long than broad, but should be well arched and close together. The tail should be short and thick, and hard rather than furry, and there is not the slightest by an arbitrary rule should not be made. The ears should be set low, fine in bone, and straight out, without any curl over the back.

The back should be straight and strong, with no appearance of slackness behind the shoulders; the loin broad and powerful (and particularly so if the back is long) and very slightly arched. The back should be well ribbed up, with deep back ribs, should not be flat-sided. The hind-quarters should be strong and muscular, quite free from droop or crouch; the thighs long and powerful; hocks near the ground, the dog standing well upon them, like a fox-hound, without much bend in the stifles. The stern should be set on high and carried well back, should be straight, showing little or no diminution in the size of the ankles when viewed in front. They should be of strong bone throughout, the elbows working freely just clear of the sides. Both fore and hind legs should be carried straight forward in traveling, the stifles not turning outward. The legs, viewed in any direction, must be straight, showing little or no dimination in the size of the ankles when viewed in front. The gait should be strong and firm. The dog should be round, compact, and not too large, the toes moderate arch, and turned neither in nor out. There should be no dew-claws behind. The coat should be smooth but hard, dense, and abundant. In color, white should predominate; brindle or liver markings are objectionable; others of any color as little or no importance. The dog must present a generally gay, lively, and active appearance. Bone and strength in a small compass are essentials, but the bulk should not be taken to mean that a fox-terrier should be cobby or in any way coarse. Speed, to some extent, and endurance, must be looked to, as power, and the symmetry of the fox-hound taken as a model. The terrier, like the hound, must on no account be leggy, neither must he be too short on the leg. He should stand like a cleverly-made hunter, covering a lot of ground, yet with a broad and powerful loin. He will thus attain the highest degree of propelling power, together with the greatest length of stride compatible with the length of gait, yet not over the weight, within certain limits, is not a criterion of a terrier's fitness for his work. General shape, size, and contour are the main points, and if a dog can gallop and stay and follow his fox up a drain, it matters little what his weight is to a pound or so, though, roughly speaking, it may be said he should not scale over twenty pounds in show condition.

Skye-Terrier.—The Skye-terrier was bred in the Island of Skye, and has existed for many years on the west coast of Scotland and the adjacent islands. He is a low, weasel-like dog, measuring from the nose to the tip of his tail at least three times his height.

The eyes are small and sharp in expression, varying in shade from hazel to a dark brown. The head has a large appearance when the coat is dry, but, when wetted, is found to be long and rather narrow between the ears, increasing in width between the eyes, with a flat skull, little or no brow, and a pointed nose. The teeth should be very strong, and meet level. The nose and roof of mouth are a very dark brown or black. The ears are set on rather high, and are by no means large, measuring barely three inches in length; but the hair on them, mixing with that arising from the head, neck, and cheeks, makes them look much longer. The coat on the body and head should be quite long. Overhanging the eyes, often so as to conceal them completely. The tail should not be raised above the back, except under great excitement. Weight, sixteen to twenty pounds. The colors most admired are steel-gray, with ears and tail tipped with black, fawn with dark-brown tips, black and pure fawn. The prick-erred Skye-terrier differs from the drop-eared in having a larger head, a shorter body, and a rougher coat. The ears are covered with short, silky hair, and should stand up well, without any outward inclination.


DOGS. (GREYHOUND, DOG-BENNING.)

Greyhound.—The head of the greyhound should be large between the ears, and, in a dog from twenty-five inches to twenty-six inches high, should measure at least fourteen and a half inches in circumference midway between the eyes and ears. This point is one that is not usually insisted on, many owners preferring the narrow and elegant head, which will easily allow the neck-strap to slip over it. The jaw can hardly be too lean, but the muscle should be full, and there should be little or no development of the nasal sinuses. The eye should be full and bright, giving the idea of high spirit and animation. The minor points are these:

There is a very great variety of ears in the different breeds, from the large upright ones of the beagles to the small and elegantly falling ones of most of our modern greyhounds. The bitch has always a much smaller and more compact head than her brother, and there is generally a livelier look about the eye; but, though the head is smaller, it is still in the same relative proportion to the whole body, which is more neat and elegant also. The neck is compared to that of the drake; it is certainly not so long or so round, but it approaches very nearly to it. This frame will enable the greyhound to seize his game while in full stride without losing his balance, but there are very good killers with short necks. With regard to the chest, there are two things to be considered: capacity for the lodgment of the lungs and heart, and the attainment of that form most conducive to speed and working. It must not be too deep, or the animal is constantly striking it against obstacles; it must not be too wide, or the shoulders are unable to play smoothly upon it. A just relation between these countenancing elements is, therefore, the best form. The shoulders must be so formed as to thrust the fore-legs well forward, and to do this the shoulder-blade must be as oblique as possible. The reason for this is that its muscles may be able to exert their full power upon the arm in bringing it into a straight line with the axis of the shoulder-blade. This alone is a great advantage; but, by the greater angle that it forms with the arm, it also enables the greyhound to bear the shock of a fall upon his legs in coming down from a leap without injury, which is another most important feature. An oblique shoulder is likewise usually accompanied by a longer true-arm, because the point of the shoulder must be raised higher from the elbow to allow of the obliquity, and in proportion, as the fore-foot is increased length will the fore-foot be extended forward; thus this form gives longer levers with greater power of leverage, and more space for the lodgment of muscles. From careful measurement of various well-formed legs, it is thought that from the elbow to the knee ought to be at least twice the length from the same point to the ground. In this measurement the dog would be standing on a level surface, with his weight bearing upon both legs, and the measure should be taken in this way, and not from the base of the two middle nails, because in the stride the action is from the ball of the foot, and not from the heel. In variously formed feet there is a difference of nearly an inch less than another with long toes; which latter would, nevertheless, upon the toes-nails being nearly an inch more than the former. In order to unite the bind and fore-quarters, and to assist in fixing the pelvis from which the muscles composing the haunch take their fulcrum, a good back is required, and, when of a good form, it has been compared to a beam. The back is composed of a series of vertebrae, having ribs attached to the sides of the first thirteen, but, in those of the loins, depending alone upon the hip-bones and lateral processes for the lodgment and attachment of muscles. It must be self-evident that every additional inch in length of back increases the stride by that amount exactly; and, therefore, if prolonged indefinitely, it would be advantageous, till counterbalanced by the disadvantages inseparably connected with its form, in consequence of the diminished strength. The length of back should, therefore, be looked for between the neck and the last rib, rather than between the last rib and the hip-bone. The back ribs should be well spread and deep; for, unless they are in the form, a sufficient attachment can not be afforded to the muscles of the loins, which constitute the chief moving-power in drawing the hind-legs forward, and fixing the pelvis. The loins must, therefore, deviate from roundness to the form. The loins must be deep and strong, and the measure of their strength must be circular. Breadth alone will not do, since the lower limbs require to be well developed as the upper, but a good measurement round the loin is a good test of power in that quarter. These are of more importance than the fore-quarters, and are composed of three separate divisions, varying greatly in total and comparative length in different individuals. These three divisions are: the true thigh, between the hip and stifle-joints; the false or lower thigh, answering to the leg of a man, and situated between the stifle and hock; and, lastly, the leg, between the hock and foot. The first two of these divisions should be nearly equal in length, and, in most well-proportioned greyhounds, are each about one fifth longer than the lower arm; while the leg, from the hock to the ground, should appear about the same relative length as one of the thigh-bones; the fore-arm being slightly longer. The hip-, stifle-, and hock-joints are often placed much farther from the chest than in the dog, and in the form a sufficient bend is not afforded to the thigh, while the leg is very considerable; but, in the leg, the contrary is the case—that is to say, it should be about one half, generally rather more than less. Many good greyhounds vary much in these proportions; and in the stifle-joint is often placed so far from the hind-bone as to be almost in the hock. When a greyhound is formed, having both the upper and lower thigh-bone one fifth longer than the lower arm, but the leg also placed a little above the knee, and the top of the shoulder-blade only the length of the thigh-bone above the elbow, it follows either that the leg is the half, or the back is that much preferred. Such toes are, however, likely to break down; and, for use, the hock-foot, long and flat, is by many connoisseurs preferred. In some cases, a flat, open foot is to be discarded. The toes should be long, and nicely curved; but this point only to be looked at as a mark of good breed. The colors preferred are black and red, or fawn, with black muzzles. Black-tan is very rarely seen, but most every other color is occasionally met with. While greyhounds are by many disliked, being considered delicate, I do not know that this objection is founded. The brindled color is supposed, with reason, to be a mark of the bull-dog cross.

The greyhound proper is used in England a great extent for public and private coursing matches, a sport little if at all known in this country.

Dog-benting.—A great sport in England, especially among the middle and poorer class
DOGS. (Chinese Edible Dog, Pug.)

running, and it gave rise to a new strain
known as whippets, which were pro-
y inbreeding greyhounds to reduce the
d then crossing with the bull-terrier
strength, courage, and endurance. A
when seen alone, is almost a
part of a finely-bred greyhound,
is generally somewhat smaller.
ippet is seen near an Italian
and, there is at once noticed
able thickening of all the finer
of the greyhound, a result of
-terrier cross.
racing has for several years been
lation in parts of this country,
ticularly in and about Phila-
where there is a considerable
-born population, and at many
thetic and foot-racing meetings.
 what is called a dog handicap.
dance run is generally 200 yards,
set-running dog can cover this
 in about one half the time that
aged sprinter could do it. The
run in heats of five, and are
oped, or allowed a start, accord-
gage and size. A dog has in this
always two yards and a half
 each pound that he weighs
his opponent; in England he
only be allowed two yards start
 pound. The dogs drawn for a
held on their marks by their
 or handlers, while a man is stationed
yards behind the finishing-tape to wave
cloth. At the firing of the pistol, each
d, and their early instincts having been
developed, they run straight and only need
ed for an extra burst of speed by the
of hands or shouts of their handlers.
ipping them are very careful not to
lose his start by over-haste. A dog
his start nearly as quickly as a human
, and quickly gets on full speed. The
nents at Philadelphia have
about seventy-five dogs to the post.
England handicaps at Manchester or
ge towns it is not unusual for 500 dogs
e, and the racing takes all day. A
ost carefully trained for his running,
isting of beef, mutton, toast, and
led eggs, his drink of tea and ale.
Edible Dog.—At the Crystal Palace
ow, in London, several specimens of a
ately new breed of dogs were exhibi-
th has much the appearance of a Spitz
is far more clumsily built and larger
ily fleshy. This is the Chinese edible
ey are bred in China for the sake of
ah, and have been developed in that
in that country for centuries, in much
manner as the Asiatic breeds of fowls,
tity rather than quality. These dogs
 entirety on vegetable food, and their
said to taste like real
-The pug should have a round, monkey-
lke skull, which should be of considerable
girth, but in proportion not so great as that of
the bull-dog. The face is short, but again not
“buly” or retreating, the end being cut off
square; and the teeth must be level; if they

A CHINESE EDIBLE DOG.
DOMINION OF CANADA.

Concerning the northern boundaries only two claims were maintained with any degree of persistence: 1. The height of land separating the waters of Hudson Bay from those of Lake Superior. This would have been a very irregular line, extending in some places close to Lake Superior, and in others far north toward Albany river. 2. The Albany river. This, the most natural line, begins near the head of James Bay, and runs nearly west for several hundred miles to the source of the river in Lake Joseph. There were other claims, such as to the mouth of the Nelson river, to the Saskatchewan and to Lake Athabasca, but they were of no importance.

The Hudson Bay Company in its time maintained the height of land to be both the northern and the western boundary of Upper Canada (Ontario); and Canada, since 1871, has taken a similar stand concerning the northern limits of the province. The royal charter granted in 1670 by Charles II is made the basis of these claims. This charter granted "the Governor and Company of Adventurers of England trading into Hudson's Bay," "the sole trade and commerce of all these seas, straits, bays, rivers, lakes, creeks, and sounds, in whatsoever latitude they shall be, that lie within the entrance of the straits commonly called Hudson's Straits, together with all the lands and territories upon the countries, coasts, and confines of the said bays, lakes, rivers, creeks, and sounds aforesaid that are not already actually possessed by or granted to any of our subjects, or possessed by the subjects of any other Christian prince or state," etc.

Since 1871 Canada has maintained the western boundary of Ontario to be the meridian passing through the extreme point of land marking the junction of the north and east banks respectively of the Ohio and Mississippi rivers. This claim, advanced by Canada after obtaining control of the Hudson Bay Company's lands, is based on a clause in the "Quebec Act" of 1774. This act, it may be remembered, conceded to the Roman Catholics in Canada all the privileges then enjoyed by their fellow citizens in France, and was passed more to prevent a union with the colonies to the south in their struggles against British oppression than to do justice to the settlers in Canada. By that act Britain consolidated about 60,000 French Roman Catholics, and estranged millions of British subjects, residents in the thirteen colonies along the Atlantic. The clause referred to enacted:

"That all the territories, islands, and countries in North America, belonging to the Crown of Great Britain, bounded on the south by a line from the bay of Chaleur, along the highlands which divide the rivers that empty themselves into the river St. Lawrence from those which fall into the sea, to a point in 45° of northern latitude, on the eastern bank of the river Connecticut, keeping the same latitude directly west, through Lake Champlain, until, in the same latitude, it meets the river St. Lawrence; from thence up the eastern bank of the said river to Lake Ontario; thence through the Lake Ontario and the river commonly..."
And that all disputes which might arise in future on the subject of the boundaries of the said United States may be prevented, it is hereby agreed and declared that the following arc and shall be their boundaries, viz.: From the northwest angle of Nova Scotia, viz., that angle which is formed by a line drawn due north from the source of the St. Croix river to the highlands, along the highlands... (the same as quoted in the Quebec Act, except that the line runs through the middle of the St. Lawrence)... to Lake Erie; through the middle of said lake, until it arrives at the water communication between that lake and Lake Huron; thence along the middle of said water communication into Lake Huron; thence through the middle of said lake to the water communication between that lake and Lake Superior; thence through Lake Superior, northward of the lakes Royal and Philippine, to the Long Lake; thence through the middle of said Long Lake, and the water communication between it and the Lake of the Woods; thence through the said lake to the most northwestern point thereof, and from thence on a due west course to the river Mississippi; thence by a line to be drawn along the middle of the said Mississippi river until it shall intersect the northernmost part of the 81st degree of north latitude. South, by a line to be drawn due east from the determination of the line last mentioned, in the latitude of 81' north of the equator, to the middle of the river Apalacheola or Catahouche; thence along the middle thereof to its junction with the Flint river; thence straight to the head of St. Mary's river, and thence down along the middle of St. Mary's river to the Atlantic Ocean, etc.

From this it will be noted that Nova Scotia then included the present New Brunswick; the two forming the old Acadia. It will also be noted that the Mississippi was supposed to rise as far north as a line due west from the northwest angle of Lake of the Woods. However, in the Treaty of 1794, between Great Britain and the United States of America, a clause was inserted enacting that a joint survey of the river should be made from "one degree of latitude below the Falls of St. Anthony to the principal source or sources of the said river," etc. Thus, in both these last-quoted treaties, the Mississippi is supposed to be the western boundary of Canada. However, as the line is specifically and accurately laid down to the "northwestern angle of Lake of the Woods," that point was considered to be the western limit. As the lake is very irregular in shape, the commissioners, named in 1814, decided that "the northwestern point of the Lake of the Woods is that on which, if a line be drawn in the plane of a great circle, at an angle of 45° with the meridian, such a line would cut no other water of the lake." The point so found is in latitude 49° 23' 55" north, and in longitude 86° 14' 38" west from Greenwich. This is the meridian fixed by both the arbitrators, and by the Judicial Committee of the Privy Council of Great Britain and Ireland, as the western boundary of Ontario.

The contention that the western boundary of Ontario should be White Earth river, a tributary, in Montana, of the Missouri, is founded on the clause already quoted from the Treaty of Paris of 1783, "thence through the said lake [Lake of the Woods] to the most northwestern point thereof, and from thence on a due west
course to the river Mississippi." It is claimed that, technically, the Mississippi includes the Missouri and its tributaries, and that the stream referred to is the first Mississippi waters crossed by that "due west" line. This contention, as well as the following, was advanced rather to illustrate that Ontario had good grounds for more extended claims than she was making.

The "Rocky Mountain" claim finds support in the facts that the Canadians traversed and traded with the entire district to the Rockies long before the Hudson Bay Company's men reached Lake Winnipeg. As much of the evidence in support of this western boundary is applicable to Ontario's claim for extended northern boundaries, it may be well to combine the two, and state the entire case both for the extreme western and the extreme northern boundaries. Ontario laid claim to all the territory that had formerly belonged to the French as Canada. By the "Constitutional Act" of 1791, the Parliament of Great Britain divided Quebec into Upper and Lower Canada. Upper Canada was defined as follows:

To commence at a stone boundary on the north bank of Lake St. Francis (an expansion of the St. Lawrence). This line is due west of Pointe au Bœuf, in the limit between the township of Lancaster and the Seigneurie of New Longueil, running along the said line in the direction of north 34 degrees west, to the westernmost angle of the said Seigneurie of New Longueil; thence along the northwestern boundary of the Seigneurie of Vendome running north 36 degrees east, until it strikes Ottawa river; to ascend the said river into Lake Timiscamingue, and from the head of the said lake by a line drawn due north until it strikes the boundary-line of Hudson Bay, including all the territory to the westward and southward of the said line to the utmost extent of the country commonly called or known by the name of Canada.

The official recognition given by the Imperial Parliament of Great Britain to the boundaries of Ontario in the "Quebec Act," 1774; the Constitutional Act, 1791; the treaty of Paris, 1783, and subsequent treaties, all show conclusively that Canada was understood to extend far north of Lake of the Woods, and as far west as the source of the Mississippi. The southern boundary of the company's territories is definitely stated to be north of Lake of the Woods. These and many hundreds of minor facts are the arguments advanced in support of the various claims. The settlement of the question has confirmed to Ontario a tract of 100,000 square miles more than her opponents wished her to get.

Algoma.—The territory awarded to Ontario forms part of the District of Algoma. This district, extending from the Georgian Bay (at the meridian of the most westerly mouth of the French river) to the northwestern angle of Lake of the Woods, is not specially adapted for farming. Its southern slope, toward Lakes Superior and Huron, is rocky. The Laurentian and Huronian plateaus extend along its entire length from east to west. But on these plateaus are occasionally found tracts of land well adapted for farming, and varying in size from 200 to 600 square miles. North Laurentian plateau, and sloping toward Bay, are immense tracts well adapted for culture and grazing. But the intrinsic of the territory is found in its gigantic and in its inexhaustible mining district some years, very rich mines of silver have been in operation on the north of Lakes Superior and Huron; while paying quantities is found in the Lake Woods district. The capitalists mining companies are almost wholly of the United States, chiefly of New York, and Chicago.

The Canadian Pacific Railway traverses the entire length of the territory; and all is but a few years since the first sounds, there are already many thriving along the route. North of the plateau, James Bay, there is likelihood of a large settlement in the near future. Already are protected frigid Quebec into Upper and Lower Canada. Upper Canada was defined as follows:

Veto-Power.—Another question, of interest to the provinces of Canada, is the possession by the Government of Canada to allow acts passed by the Legislative Assembly of the provinces. By the British North America Act, 1867, the power of disallowing passed by the Provincial Legislatures was referred to the Governor-General in Council, on the Government or Ministry of Federal Parliament. It is a power that has been exercised, and it is a disad vantage, since the provinces are in the history of the operation, whether the Federal Government or is entitled to have, authority to veto acts passed by the provinces, or not matters entirely within the jurisdiction of the provinces. In recent events, the power of disallowing provincial acts has been sparingly exercised; for, of nearly 7,000 acts passed 1867, only about thirty have been disallowed. Many of those disallowed have not been contested or repassed; but one in particular, known as the "Straw Bill," was passed by the Legislative Assembly of Ontario, disallowed and again disallowed by the Federal Government, and was again passed by the Legislative Assembly of Ontario.
the river were obstructions to the
of timber when the water was low;
McLaren constructed a dam and slide
tate the passage of logs. Another hu-
named Caldwell, owned timber limits
banks of the same river, above McLa-
and claimed the right granted him by the
to float his logs through Mo-
. To prevent this seeming treas-
Laren obtained an injunction from the
of Chancery of Ontario, arguing that
able streams" are naturally floatable.
To remove all ambiguity, the Legisla-
, in 1881, re-enacted the law,
tended its provisions to all streams and
ctions thereon; and provided for the
by the party using the slide to the
thereof, of a toll, which was to be fixed
specific case by the Lieutenant-Governor
Province in Council. The Govern-
l in Council disallowed this act, giving in
ation "that the act seems to take away
of the owner's property, and to give it
, forcing the owner to become a
er against his will." The Ontario
ment objected to the Governor-General
claiming to review any provision
ct passed by a Provincial Legislature on
act within its competency under the
North America Act, and again en-
the same law. It was again disallowed,
acted, in favor of Caldwell,
to the Supreme Court of Canada, where
son adverse to Caldwell, and in favor
Federal view of the question, was
During 1884 it was brought before the
Council of Great Britain and Ireland,
a decision was given in favor of Cal-
dian, and upholding the Ontario statute.
—The confederation of the provinces
acted in 1867. Therefore, sufficient
lapse to produce disputes based on
of confederation. Another point in
stitution settled in favor of provincial
was won by Ontario under its Attorney-
the name of O. Mowat, viz., "Escheats
Property." The question, whether
and personal property in any province
ed or forfeited, by reason of intestacy,
lawful heirs, next of kin, or other par-
ted to succeed, etc., came within the
on of the Provincial Legislatures or of
union, came before the courts both of
and of Quebec several years ago. It
sequent to the time referred to (1874
78), agreed, between the Dominion and
t Governments, that, pending a judi-
cision to the contrary, the above-named
should be subject to the jurisdiction
provinces, while lands and personal
y forfeited for treason, felony, etc.,
within Dominion authority and ju-
on. Afterward, Ontario again passed
(one of 1874 had been disallowed)
me possession of such lands, and em-
powered the Lieutenant-Governor in Council
to make grants of escheated or forfeited lands,
or to release forfeited property, or to waive
forfeiture. Power was also given to make an
assignment of personality to which the Crown
might be entitled. In 1878 this act was put to
a test. A wealthy citizen of Toronto, Andrew
Mercer, died intestate, without heirs or next
of kin, and Attorney-General Mowat for On-
tario laid claim to the property. A demurrer
was entered by Andrew Mercer, Jr., a natural
son of the deceased. It was asserted that Mer-
cer had been legally married to the mother of
the young Mercer, and a marriage entry was
found in the register of a Roman Catholic
church near Toronto, but the evidence was
proved to be forged. The woman had been a
servant in Mercer’s house, but the son was
well used by his father, and he had a valuable
farm property deduced him prior to the old
man’s death. The Court of Chancery upheld
the Ontario statute, and overruled the demurr
. The Court of Appeal for Ontario held
the same view, and dismissed the appeal with
costs. On appeal to the Supreme Court of Can-
da, it was decided between the Dominion and
the Ontario Governments to make a test
in the matter of escheats of real property.
The Dominion upheld the views of the appel-
, while Ontario remained firm in support
of the statute.
The Supreme Court held that the escheat
act of Ontario was ultra vires, and rendered
judgment in favor of the appellant. Finally,
on appeal to the Privy Council of Great Britain
and Ireland, it was decided in favor of Ontario.
The Government of Ontario employed a
portion of the large sum of money thus re-
ceived in the erection of an elegant and sub-
stantial building, known as the “Mercer Re-
formatory,” in Toronto. Its purpose is to serve
as a place where abandoned women may be
confined, instead of their being sent to the va-
rions prisons.

License.—The liquor license of Ontario au-
thorizes the appointment by the Provincial Gov-
ment of license commissioners for the mu-
nicipality of every township, town, village, etc.,
in the province, and empowers them to pass
resolutions as to the conditions and qualifica-
tions for tavern and shop licenses for retail
sale of liquor, to limit licenses, and to regulate
inspectors of licenses. The commissioners may
also impose penalties. The sale of liquor was
limited between the hour of 6 A.M. Monday,
and 7 P.M. Saturday. Appeal against the act
was made on the ground that the legislature
could not delegate its powers to commission-
ers in municipalities. The Privy Council, in this
as in all the former cases, sustained the Onta-
rio statute, and decided that the British North
America Act confers exclusive powers on the
provinces as to the sections enumerated in sec-
tion 92 of that act, and that in such matters,
the provincial legislatures are supreme. Thus,
the Province of Ontario, as the champion of
DOMINION OF CANADA.

provincial rights against Federal centralization, won, not only for herself, but also for her sister provinces, a series of legal victories.

Temperance.—The year 1884 witnessed in Canada an important agitation in temperance reform. The agitation has been directed to secure the passing, by counties and other municipal districts, of an act known colloquially as "The Scott Act," but officially as "The Canada Temperance Act." This act, passed in 1878, was amended last year, and was then found satisfactory to the temperance workers. It is to go into effect when adopted by a popular vote.

The following is a synopsis:

PART I. One fourth of the electors in any city or county may petition the Governor-General in Council to issue a warrant for the taking of any act in such city or county. The Governor-General in Council may then appoint a returning officer, fix a day for voting, and make all other provisions for the poll of votes. The vote shall be taken by ballot, and in one day. Severe penalties are provided for corrupt practices in the election; and no messengers are allowed, nor are any places where liquor is sold to be open during the whole day of voting. Electors, entitled to vote at an election of the members for the House of Commons, are entitled to vote on the Scott Act. If a majority of the votes polled are in favor of the act, a proclamation will be issued, bringing it into force; but in counties where licenses are in operation it can not come into force before at least five months after the voting, or at all in counties where licenses are in operation it can not come into force before at least five months after the voting, or until all licenses in force at the end of these five months have expired. If no licenses are in force in a county, the act may be brought into operation after three months from the day of the act adopting it. If the act be adopted, it can not be repealed for at least three years, nor until the repeal has been voted on and adopted by the electors. If the act be rejected, it can not be again voted on for three years.

PART II. From the day of the act's coming into force in any city or county, and as long as it remains in force, no intoxicating liquor shall be sold in any manner or under any pretext, except in the cases following: Persons who are specially licensed may sell liquor by wholesale, but only in quantities of not less than a gallon, or, in case of ale or beer, eight gallons; and only to licensed druggists, or other wholesale sellers, or to persons who have good reason to believe the liquor is to be used and have it consumed in some place where the Scott Act is not in force. Producers of native wine, made from grapes grown by themselves, or from imported wine, when licensed, sell such wine to any person in quantities of not less than ten gallons, unless it be for medicinal or sacramental purposes, when as small a quantity as one gallon may be sold. Licensed druggists may sell in quantities of not less than one pint. Not more than one druggist may be licensed in a township, not more than two in a town, and not more than one for every 4,000 inhabitants in a city. Druggists are allowed to sell liquor only for medicinal or sacramental use, or for use in some legitimate art, trade, or manufacture. Liquor can be sold for sacrament only on a certificate signed by a clergyman; for medicinal only on a certificate signed by a medical man; and for any other purpose only on a certificate signed by two justices of the peace. The licensed druggist must file in the registry these certificates, must keep a full record of all the sales he makes, and report the same to the Collector of Inland Revenue.

PART III. The penalties for illegal sale are: For the first offense, a fine not less than fifty dollars; for the second offense, a fine not less than one hundred dollars; and for the third and each subsequent offense, imprisonment for not more than two months. The clerk or agent who sells for another person shall be held equally as well as his employer, and shall be liable to the same punishment. "All liquor, and all vessels containing liquor, in respect to which have been committed, shall be forfeited. Any person attempting to tamper with any act, to the act, with the view of saving the violator from conviction or conviction, shall, on conviction, be fined not more than three months. Any person who is a party to tamper with any conviction, or to settle any offense under the act shall be liable to a fine of fifty dollars. Any person who is a party to tamper with any conviction, or to settle any offense under the act shall be liable to a fine of fifty dollars. Any person who is a party to tamper with any conviction, or to settle any offense under the act shall be liable to a fine of fifty dollars. Any person who is a party to tamper with any conviction, or to settle any offense under the act shall be liable to a fine of fifty dollars. Any person who is a party to tamper with any conviction, or to settle any offense under the act shall be liable to a fine of fifty dollars.

Religious Uses.—The year 1884 also carried into effect a union of the following bodies: The Methodist Church in Canada, the Primitive Methodist in Canada, the Bible Christian of Canada. The name of the united body is the Methodist Church of Canada. The doctrine and articles of religion contained in the Book of Discipline of the Methodist Church of Canada, and also the common ordinances, etc., of the said Church, are to be observed. The act contains the 25 articles of religion, and the three words of John Wesley, in his notes on the New Testament, and in the first 52 sermons of the series of his discourses, published dur lifetime.

Canadian Pacific Railway. — This was pushed forward with much vigor during the year. The only portions not yet completed, between Montreal and Coal Harbor on the Pacific Ocean, are a short section north to Superior, and one in the Rocky Mount British Columbia. The former was completed early in 1885, and the latter in the spring of 1886. The entire line from Montreal to the Pacific Ocean is over 2,800 miles long, and is the longest railway in the world. It is the only one built by the Canadian Pacific Railway Company. During the second half of the year the company made a large profit.
DOMINION OF CANADA.

ent of 1884, the Government of Canada d $30,000,000 to the Canadian Pacific', taking as security a mortgage on the re from Callander (east of Lake Nipis estward. As the road for the first d miles passes through an unproduc country—the north shores of Lakes Huron xterior—it is extremely doubtful if the is of any value. However, the section the Woods west to the mount would always be a productive part. The ment of the day, that of the Conservaader the Right Hon. Sir John A. Mac was pledged to the early construction road. The railway company was un raise the money in the American or in markets on the bonds of the road, ently it was a question of bankruptcy re for the company, and defeat for the ent, or the grant for the money by ent. After much lobbying, subscribing ads in various provinces as bytes, and deal of manipulating in general, the of the Government secured the grant, the year the money was expended, and it was made to float another loan in the market. Thus far this has failed, not the fact that the Canadian Pres a visit to Europe in company with ident of the road, and advocated a of imperial and colonial federation, the which had been suggested by his oppo or. E. Blake, many years before, in known in Canadian annals as 'Blake's speech.' The English capitalists were renced; but the construction of the portions of the road is being pushed with increased vigor even in winter. to of the road already constructed, es in the Northwest, are service coun The rates, too, are far from exorbitant as are charged by any of tern roads of the United States. Bo company offers every facility it can machinery, and in exporting the produce of the

up in the Northwest.—To test the suita settlement of the far-west country, d by the railway, "experimental were started last year. The result that large tracts of land, selected at here and there along the line, have surprising returns. The Japanese ear its attendant warm winds, temper re northern Pacific coast of America, at Sitka Island, in Alaska, the ther has fallen to zero (Fahr.) but four the past forty-three years. The Rocky ins in British Columbia are narrow, in width from 800 miles at the north, 500 at the south. The mountains in ited States are much wider. Then numerous passes, all less than 6,000 1 many as low as 2,600 feet in height, outlines in British Columbia. Through and over these passes the warm winds from the Pacific find their way, producing a climate very suitable for all kinds of farming, such as are conducted in Ontario Province or New York State. There are no passes south of the one traversed by the Northern Pacific Railway in the United States less than 8,000 feet in height. Another cause of the warmness of the Canadian Northwest is found in the fact that the warm currents of air, which in temperate regions, of course, pass easterly toward the poles from the equator, here ascend over the mountains. The air becoming rarefied, the heat is rendered latent, and on descending to the plains becomes evolved. It is another fact established by nature that in summer the days are very long in those regions, while they are correspondingly short in winter. The farmers resident in settlements as far north as the 60th parallel of latitude, toward the mounta ins, say they seldom or never fail to harvest good crops of wheat; and never miss any others, such as oats, barley, potatoes, turnips, cabbage, and peas.

Industrial Depression.—Industries of every class were much depressed during 1884 in Canada. This depression is, of course, general in other countries, but its intensity has been given to it in Canada by the high protective duties, and by the extreme cheapness of farm and agricultural products in general. Crops of all descriptions yielded large returns per acre, and the prices were very low. Merchants have difficulty in collecting outstanding accounts, the carrying-trade is depressed, and business is very dull. The December or Christmas trade this year amounted to very little in any part of Canada. Where expensive cards, jackets, caps, and presents of every description were indulged in during former years, this year the cheaper gifts and toys were sought out as mementos. The sleighing, too, generally good throughout Can ada toward Christmas—a fact which greatly enlivens business—was not good this year. The general stagnation in business was reflected in lumbering and mining operations, as well as in ship-building and fishing. In none of these was the trade of 1884 equal to that of some years immediately preceding. Owing to there being no insolvency laws now in force in Canada, it is difficult, if not impossible, to compare the number in business with those of former years; but the number is very large, and much in excess of preceding years. The following is a summary of failures throughout the Dominion during the year:

<table>
<thead>
<tr>
<th>PROVINCES</th>
<th>Number of failures</th>
<th>Liabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ontario</td>
<td>69</td>
<td>$8,000,000</td>
</tr>
<tr>
<td>Quebec</td>
<td>401</td>
<td>4,750,100</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>78</td>
<td>1,070,000</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>140</td>
<td>2,060,000</td>
</tr>
<tr>
<td>Newfoundland</td>
<td>19</td>
<td>290,000</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>750</td>
<td>1,090,000</td>
</tr>
<tr>
<td>Manitoba</td>
<td>79</td>
<td>766,001</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,937</strong></td>
<td><strong>$1,191,106</strong></td>
</tr>
</tbody>
</table>


DOMINION OF CANADA.

Immigration.—Immigration to Canada fell off considerably during 1884. The chief demand for farm-workers and domestic servants, those classes being are more largely represented in the returns than any others. There are various private immigration organizations, whose chief aim it is to find homes for destitute and orphan children. These bring out numbers of young boys and girls, and apprentice them to farmers for a term of years. As a rule, such children are not well treated, but many of them but fair to become useful citizens. Another class of immigrants who have selected Canada as a resting-place came in great numbers during the year. The class includes bank managers, clerks, treasurers of municipal corporations, directors of societies, etc., in the United States. Many of these gentlemen sought asylum in Canada, where the sporting community gave them a ready welcome. They are likely to be permanent settlers, as the extraterritorial treaty with the United States does not cover their offsprings.

British Columbia.—The progress of this province in 1884 was very marked. The export trade has doubled within a few years, and in 1884 amounted to over $5,000,000. This was chiefly in gold, coal, salmon, oils, timber, furs, etc. The export value per head in the province is more than triple that of any other province.

The western section of the Pacific Railway has trains running regularly inland for two hundred miles. Another railway, connecting Esquimalt and Nanaimo, on Vancouver Island, is under construction; while one through the central part of the province, running north from Yale, on the Canada Pacific Railway, is surveyed. The wages paid to men during the year were very high, and farmers obtained extraordinarily high prices for their products.

The Crown lands in the province are owned partly by the province and partly by the Dominion. The provincial lands are open for settlement, as are also those of the Dominion, under favorable circumstances. The farm and buildings of a settler, when registered, can not be taken for debt incurred after registration; it is free from seizure up to a value of $2,500. Goods and chattels are also free up to $500.

The mining laws are very strict. Certificates must be taken out by all miners; and "free miners" can have right or interest only in mining claims or ditches, and then only on payment of $5 annually. To record a claim requires a fee of $2.50, and it must be recorded three days after location, if within ten miles of the office. An additional day is allowed for each two miles of distance. Claims are required to be rectangular. The sizes are: bar diggings, 100 feet wide at high-water mark, and thence extending into the river at its lowest ebb; dry diggings, 140 feet square; creek claims, 100 feet wide, measured in the direction of the stream, and in which from base to base of the hill on each side, unless the hills are less than 100 feet apart, when the claim is 100 feet square; hill claims, 100 feet wide on the base line fronting a stream, with parallel side lines to the summit of the hill; mineral claims, precious or base (other than coal), in lodes or veins, or in firm rock, 1,250 feet long by 500 feet wide.

The fisheries of the province last year employed nearly 6,000 men and boys, and yielded an export value of nearly $2,000,000. Fresh salmon were shipped to Ontario and Quebec during the winter of 1884-85, and it is intended to repeat the experiment another year.

There is a splendid public-school system in the province, and the school property is worth $100,000.

Every locality with over thirty regular male residents may become a municipality for self-government. This tends to assist the administrators of justice in preserving order among the miners, fishermen, etc.

Immigration was very brisk in the province in 1884. Over 5,000 entered at Victoria alone.

A magnificent cantilever bridge was completed over Fraser river, at Lytton. It is part of the Canadian Pacific Railway, and was constructed, as the residents of the Pacific slope boast, by engineers from that coast. The bridge is 580 feet long, the central span being 315 feet. The piers are of solid masonry, 96 feet high, and contain 6,480 cubic yards of stone. The bridge proper contains 6,000 tons of cast-steel and iron, and cost $280,000. The great engineering feat in connection with the construction of this bridge, as compared with the Niagara Falls cantilever bridge, is that the site was approachable from one side only. The material for the western end or half of the bridge was taken across on a steel cable. The first iron was placed on March 17, and on June 14 a train crossed the bridge.

The Chinese were very troublesome in some parts of the province during the year. They are there in settlements of hundreds, in all several thousand. There are urgent demands from the whites in the province for repressive measures against them. Partly to allay that excitement, the Federal Government sent commissioners to the province to report on the question.

Saskatchewan, Assiniboia, and Alberta.—Settlement was not so brisk during 1884 as was expected from the extraordinary rush in 1883. The past year has seen more ranching than grain farmers entering the Territories. However, the crops were beyond the expectations of even the sanguine farmers. On the whole, the report for Manitoba falls a few degrees below that of the Territories.

Some slight claims were experienced with several Indian tribes, who insisted on changing their reservations. They claimed to be starv-
though the regular supplies had been to them, and in some cases seized the
most stores. They were finally pack-
d forced to return to the reservations
at the firing of a single shot.

NEW. Antipyrine.—This is a new alka-
line of the chinoline derivatives, which
are extensively used during the past year
as antipyretic. It possesses the valuable
property of reducing temperature without pro-
ducing unpleasant effects upon the system.
As occurs in the form of prismatic crys-
tals are quite soluble in water and alco-
hol is generally administered in divided
doses of one to two drachms. A single
fifteen grains causes a fall of tempera-
ture of at least three degrees (centigrade),
within an hour after the administration
of the drug, and continues for four or five hours.
In severe doses have been given, the action
of the drug may continue for forty-eight hours.
Temperature falls, the frequency of the
respirations, and there is a profuse
sweating. Antipyrine is recommended in all
cases of fever, especially in pneumonia,
acute rheumatism, erysipelas, and dysentery.
The effects of the drug may be
more promptly if it is introduced into
the system by hypodermic injection. It is not
likely that this remedy will supplant quinine
in cases of intermittent fever, although
the new drug is perfectly analogous to them.
Antipyrine requires to be
much larger doses than quinine, but
much cheaper.

Schizokrate of Cocaine.—Cocaine is an alka-
line obtained from the leaves of Erythroxylon
shrubs that resemble the tea-plant, and
wild in South America. The alkaloid
in the form of colorless, transparent
without odor, and bitter. The peculiar
qualities that a nerve-stimulant have long
been known, not only to the medical profession,
but to the Peruvian natives, who are enabled to
prolonged fatigue by simply chewing
the leaf. A young German physician has re-
called attention to the fact (previously
noticed by physiologists) that a soluble combina-
tion of cocaine with hydrochloric acid possesses
properties as a local anesthetic.
that when a strong solution of cocaine
chlorate was applied to the tip of the
that portion of the organ was tempo-
rary numb, he was led to try its effects
in the eye. The result was the same. The
use of this fact is, that if a
drops of the solution be introduced into
the delicate nerves of sensation are
ed, so that the most painful operations
are performed without discomfort to the
patient. The remedy has already been widely
used by ophthalmic surgeons, with brilliant
results. It has been confined to the
region of the eye, and, if desired, in the
region of the nose, the ear (severe neuralgia),
other delicate membranes, its effect is
the same; pain and irritability are relieved,
and the surgeon is enabled to accomplish his pur-
pose without causing any suffering in cases
where general anesthesia is not desirable. The
drug is quite safe, and its application simple.
Four or five drops of a four-per-cent. solution
are instilled into the eye at short intervals,
within minutes before operation. The effect
is experienced within five minutes after its
introduction, and lasts half an hour. The
principal drawbacks to its frequent use are its
expense, and the difficulty of obtaining pure
preparations. Very recently the use of this
drug has been greatly extended, so that now it
has been employed not only to dull the sensi-
Bility of the nose and larynx during examina-
tions and operations, but it has been em-
ployed as a local anesthetic in abdominal sur-
gery. From the evidence now before us, it
seems as if cocaine were to be an efficient agent
even in severe surgical operations, in cases
where there are special contraindications to the
use of chloroform and ether.

Jequirity.—This remedy, recently introduced
into ophthalmic practice, has aroused an un-
usual amount of interest. The jequirity is a
woody, twining plant, growing in Brazil, though
it is also indigenous in India and Africa; the
seeds, which occur in pods, are about the size
of peas. An infusion of the seeds, when in-
stilled into the eye, excites inflammation, ap-
parently of a specific character. When this
substance, it is found that old inflammatory
deposits on the cornea and conjunctiva have been
absorbed. Marvelous results have been re-
ported from the use of this drug in the case of
patients whose vision, apparently permanently
impaired, was perfectly restored. The active
principle of jequirity is a micro-organism which
is removed by boiling or filtering, the infusion
then being deprived of its inflammatory action.
Numerous experiments have demonstrated that
the infusion may be used without danger to the
delicate structure of the eye. It has also been
employed with success in the treatment of puru-
ulent discharge from the ear. “The reception of
jequirity by the medical world,” says a re-
cent writer on therapeutics, “is something un-
precedented in the introduction of new drugs.”

Kairine.—Kairine is another antipyretic, which
has been highly praised, especially in the treat-
ment of typhoid fever. It appears to be some-
what untrustworthy in its action, and its effects
are brief. Contradictory statements are made
as to its value as an antiparasitic; it is certainly
much inferior to quinine.

Lemon-Juice as an Antipyretic.—This simple
remedy has attracted much attention in coun-
tries in which malaria flourishes. It was in-
vented by an Italian physician, and was thor-
oughly tried by Prof. Tommasi Crudeli, an
authority on intermittent fever, who reported
most favorably as to its efficacy. As lemons
have been used for many years in favor of
their antipyretic effects having been noted,
there must be some special virtue in the
new mode of preparing the juice. The *modus operandi* is as follows: "A freshly-gathered and unpeeled lemon being taken, cut into thin slices, put into three teaspoons of water, and boil down to one teaspoonful in a clean earthenware jar. This decoction is then allowed to stand overnight in the open air, and is given the first thing in the morning." Freshly-plucked lemons should be used, and one daily is generally enough. Under this homey treatment, not only is simple malaria curable, but pernicious intermittent fever may be effectually controlled. What the active principle of the lemon-juice is, is not known, but it is doubtless some undescribed alkaloid. The remedy has been tested too often, and by too eminent authorities, to allow of any doubt as to its efficacy.

**Menthol (synonym, menthyl alcohol).**—This is a white, crystalline substance deposited from oil of peppermint. It melts at 97° Fahr. It is prepared principally from the Japanese oil, by freezing and thawing this several times until no more menthol crystallizes out. The crystals are slightly soluble in water, more soluble in fixed and volatile oils and ether. The drug is considered a reliable remedy in the less severe neuralgic affections of the face, especially in brow-pains. A solution of one part of menthol to ten of alcohol is the strength usually employed. If the finger be dipped in this preparation and applied lightly to the seat of the pain, the relief is often almost immediate. The Germans have popularized the "Migräne-stift," or headache-pencil, which is simply a concentrated preparation of menthol in a solid form. This is rubbed over the affected nerve, and appears to dull its sensibility.

**Naphthaline.**—Several valuable derivatives of coal-tar exist, one of the most recent being naphthaline, soluble in water, but soluble in alcohol, ether, and the volatile oils. It is an active poison to all micro-organisms, but is innocuous to man, whether used internally or as an external application in the treatment of inflammations of the alimentary tract, with or without ulceration. The allied derivative, naphthol, has assumed a good deal of importance as a remedy for the cure of certain affections of the skin, characterized by obstinate itching. As recommended by Prof. Kaposel of Vienna, it is applied in the form of a weak ointment (one part of naphthol to ten parts of vaseline). He has treated thus the affection known as "prurigo" with brilliant results.

**Quinbrach.**—From the bark of this tree six different alkaloids have been extracted, the most active of which are quebrachine and aspidospermine. Quebracho seems to act principally upon the nervous system. It diminishes the number of heart-beats as well as the respirations, and also renders the cardiac contractions more regular. It is especially valuable in dyspnea of nervous origin, and hence is largely used in the treatment of asthma. Although the results obtained by the use of this drug are somewhat variable, its rapid action, freedom from bad effects, and almost specific properties in asthma, have made it deservedly popular.

**Resin.*—This is a resin belonging to the class of phenols. It occurs in the form of fine, colorless crystals, which are soluble in water and alcohol. It has a sweet, sickish taste, and in large doses may give rise to unpleasant even alarming symptoms. It is a powerful disinfectant and deodorizer, and probably owes its virtues in certain diseases to its germicidal action upon the parasites that accompany or occasion these affections. Although it is by no means a new drug, it is only lately that it has been extensively used in practical therapeutics. As a local application it forms a valuable remedy in suppuration of the middle ear. It is given internally in malaria, and is said to be efficacious in some cases in which quinine fails. In the intestinal catarrh of infants it has proved to be of considerable value. A Brazilian physician has reported a large number of cases of whooping-cough in which the attacks were arrested and the disease shortened by the application of resorcin to the mucous membrane of the larynx through an atomizer.

**Sanguina Habba.**—This is the green silk of the ordinary Indian corn, from which an extract is made by macerating it without the use of heat. The true value of the drug lies in its power to increase the flow of urine, but it has also been shown to exert a regulating action over the heart. It is particularly indicated in cases of heart-disease accompanied by excessive dropical effusions. Its effects are observed within a few hours after administration, and are manifested by an increased flow of urine, diminution of the dropary, and a lowering of the pulse. The heart's action becomes slower and more regular. The drug is entirely without unpleasant effects; it closely resembles convallaria in its effects, and is more rapid in its effects than digitalis.

**Tannin-cannabin.**—This is one of the many new alkaloids or preparations of alkaloids that have been lately discovered. It is a crystalline substance extracted from Cannabis Indica (Indian hemp). It is said to resemble strychnine in its physiological action. The active principle of the plant is an alkaloid known as cannabin. When tannin is added to the latter a new body is formed, which appears as colorless, crystalline needles, quite soluble in water and alcohol, and is known as tannate of cannabin, or tanno-cannabin. Valuable sedative and hypnotic properties have been claimed for the drug; in fact, it is said to act in a manner similar to opium, though it is free from the disagreeable after-effects (headache, nausea, etc., of the latter). Frohnmüller, who has used this new remedy in a large number of cases, is of the opinion that it possesses superior advantages as a sedative, not the least important being the fact that its use is without danger from poisoning, as in the case of opium.
DYNAMITE-GUN, THE.

was ultimately decided in favor of Liebig. It is impossible to refer to the many memoirs published by Dumas. These appeared in the "Comptes Rendus" and other scientific periodicals, including the "Annales de Chimie et de Physique," of which journal he was editor for upward of forty years. Two of his works have become classical, the "Traité de Chimie Appliquée aux Arts," and the "Leçons de Philosophie Chimique." His parliamentary career began shortly after the Revolution of 1848. Under the presidency of Louis Napoleon, he filled the office of Minister of Agriculture and Commerce. During the second empire he was elevated to the rank of Senator. Such subjects as "Copper Coinage," "Laws of Drainage," "Preservation of the Mineral Springs of France," and "The Organization of Medicine," were those on which he addressed the Senate, and from which his reputation in political circles was made. Dumas served on many, if not all, of the scientific commissions called into existence by the Government. The reports on the claims of Le Blanc, the discoverer of the process by which sea-salt was converted into soda-ash, that of the Phyloxera Commission, and more recently that of the International Commission on Weights and Measures, were prepared by him. In 1888 he became one of the perpetual secretaries of the Academy of Sciences. He succeeded Guizot in the French Academy. In 1843 the Royal Society awarded him the Copley medal; and in 1869 he was the recipient of the Faraday medal given by the London Chemical Society. "Nature," in an extra number for Feb. 6, 1880, contains, from the pen of Prof. A. W. Hofmann, of Berlin, a most excellent sketch of his life.

DYNAMITE-GUN, THE. The value of dynamite and other high explosives in war would be much increased were a practical means in use for projecting bombs, or cartridges, filled with such explosives, to considerable distances, as ordinary bombs are projected from mortars. The projectiles can not be fired with a charge of powder, for the shock of the detonation of the powder would certainly cause the explosion of the cartridge, with the destruction of the gun and great danger to the persons engaged in its manipulation. A plan has been devised by Mr. H. D. Winsor, of New York, and the persons associated with him, for applying the expansive force of compressed air or steam under high tension for the discharge of the dynamite projectile, and has been subjected, by order of the Government, to experimental tests under the direction of Lieutenant E. L. Zalinski. Guns in which the principle may be applied have been in making at the Delamater Iron-Works in New York. The four-inch gun is illustrated in the engraving. It consists of a tube forty feet long and a quarter of an inch thick, mounted upon a light steel girder. The latter is trunnioned, and is also pinioned on a cast-iron base, so that it may be
swung into any desired position and range. The adjustment is further assisted and made stable by means of guys placed on either side of the base, the length of which can be altered and fixed by turning the hand-wheels. Compressed air or steam is introduced to the gun from below, and passes up through the center of the base, the pipe connecting with one of the trunnions (which are hollow); thence it is introduced into the pipe shown at the side of the gun. This pipe leads into a valve which is a continuation of the breech, and is shown as under it, and which is connected with it by a tendeney to deflect it so as to turn the head of the dart into the wind, and that action would, in a measure, tend to keep it in the line of its trajectory.

To discharge the gun, the dart is inserted in the breech, and a gas-check is placed in position. A lever then being moved, the valve is opened, and the air-pressure is admitted. There being no shock of detonation, it is believed that the danger of the cartridge exploding before it leaves the gun will be reduced to a minimum. The application of the projecting force is further tempered through an automatic arrangement of the valve-controlling mechanism by means of which air is admitted gently at first, enough to overcome the inertia of the projectile, upon which full pressure is let on. The flow of air is stopped as the dart leaves the gun. For this gun are claimed the advantages of lightness, making it manageable on small craft, freedom from report and flash, making secrecy in its operation more feasible; and cheapness, for the cost of such a gun is but a trifle compared with that of other guns of equal power of destruction. Moreover, these guns require heavy special machinery and many months of labor to complete them, while dynamite-guns like the one described can be built in any well-equipped shop in a comparatively short time. In the experiments with a two-inch gun a range has been attained of one mile and a quarter under the application of a pressure of 420 pounds to the square inch. In the four-inch and six-inch guns it is intended to use pressures of 2,000 pounds and upward, and the gain of a considerably longer range is anticipated.
Easter Island, or Rapa Nui, famous for its stone images, is in lat. 27° 8' S., long. 109° 28' W.; it is about 12 miles long and 4

E

race, which he calls the Fifteen-Image Platform: "Seaward, just where the ground becomes broken as it nears the cliffs, is built a very stout wall. Its height is much obscured by fallen rubbish, broken images that have toppled over, rank vegetation, etc.; but it seems to have been about seven or eight yards high. The stones of which it is made are large and irregular, both in size and shape, though more or less four-sided. Some are fully six feet in length. They are fitted together very exactly, without any cement. This wall is not built flat and level at the top, but is nine feet high at the base and more than four times as broad, and this terminated in front by a low façade or step of stone, about as high as that of the platform. Before it was a smooth space or terrace of the same length as the platform, but at least four times as broad, and this terminated in front by a low façade or step of

The terrace sloped gently to this step, and the sides were built square and raised above the adjoining ground, so as to join the ends of the platform. The images of the platform were strewed with bones in all directions. They were old and weather-worn, but bore no marks of fire. The images had been thrown down in all directions, and were all more or less mutilated." Similar images and platforms have been described by the Rev. Titus Coan as existing at Punaun on the Marquesas Islands, in 1869; and similar platforms were seen and figured by Lieut. Malden, in 1825, on the uninhabited Malden's Island ("Voyage of H. M. S. Blonde," 1826). At the southwest side of Easter Island, at the sea-edge of the Te Rama Kao crater, says Dr. Palmer, are eight or more houses of great age, now unused, and mostly in good preservation. They are built in irregular lines as the ground permits, their doors facing the sea. Each house is oblong-oval, built of layers of irregular flat pieces of stone, the walls about 5 feet high. The doors are in the side, as in the present grass huts. The walls are very thick, 6 feet at least, and are lined with up-right slabs 4 feet high, but not so broad. Above these, small thin slabs are ranged like tiles, overlapping, and so gradually arching till the roof-opening is bridged over by long, thin slabs, 3 or 4 feet, which are not more than 6 inches thick and 2 feet in width. The inner dimensions of the hall are about 16 paces long by 5 paces wide, and the roof is 6 feet high inside, under the center slabs. The passage leading to it is paved with slabs, under which is a kind of crypt, or blind drain, which extends about 6 feet outside; here also it is cov-
EASTER ISLAND.

ered with flat slabs, and is of the same dimension as the passage. It is carefully built of stone, squared and dressed; it ends abruptly and square. Outside the hall, and at right angles to it, are smaller chambers that do not communicate with it, each of which has a separate door from the outside. The upright slabs that lined the hall, and those of the roof, are painted in red, black, and white, with all kinds of devices and figures; some like the geometric figures of the Mexicans, some birds, roosters, faces, crones (a curious mythic animal, like a monkey with a bird's head), and mahu, or double-headed penguins. Symbolic figures of phallic nature, rude tracings of horses, sheep, and ships with rigging were found in a few. These were very new, and misled some to the idea that all were equally new.

The sculptured stones are on the brink of the sea-cliffs at the To Rama Kao, at the place where the last lava-dow issued, and overlook the sea, which is directly under them. They are very numerous, even to hundreds; they are almost always on platforms (but all have been thrown down), except in the crater at Otuiti and outside of it, where they are at the east only, and in groups, not in rows, and here even very many are prostrate. The vewain-bushes and grass much obscure them. They are made of but one material, a gray, compact, trachytic lava, found at Otuiti, where there is a distinct slide evidently built for their removal, and where imperfect images are still to be found. They are human trunks, terminating at the hips—the arms close to the side, the hands sculptured in very low relief on the haunches. They are flatter than the natural body. The largest measured was 97 feet high. The usual size is 15 or 18; the small ones are 5 or 44 high. These are more boulder-shaped. The head is very flat; the top of the forehead is cut off level so as to allow a crown to be put on. This was not done till the image was on its pedestal on the platform. In the giant images at Otuiti, outside the crater, the head seems to project before the line of the trunk, which was not noticed in the others. The face and neck do not till the image was on its pedestal. They are in the best preservation. Those inside the crater are large, but weathered—worn, apparently the oldest in the island; many are prostrate. They differ a little in profile from those in the other parts of the island; the face is square, massive, and sternly disdainful in expression; the aspect always upward. The peculiar feature is the extreme shortness of the upper lip, or the upper-throat of the lower one... The eye-sockets are deep, close under the brows, and, as far as Dr. Palmer could make out, eyeballs of obsidian were inserted in them; but he was not fortunate enough to find any. The nose is broad, the nostrils expanded, the profile varying somewhat in different images. The ears are always sculptured with very long, pendent lobes. The beautifully perfect statue now in the British Mu-

seum is elaborately traced over the back and head with ropes and birds, two of which much resemble the apteryx. It was colored red and white when found, but the pigment was washed off in its transit. Its height is 8 feet, its weight 4 tons. It was buried waist-deep in the ground, and had no crown. Its face, like those of the rest, was turned from the sea. It was the only one under cover; the horse in which it was found was a small circular one 20 feet across, into which two small, dark chambers opened. The crowns were always made of the same red vesicular tuff found in the Te Rama Kao, upon the outside slope of which as many as thirty were waiting for removal to their several platforms. The largest measured was 10 1/2 feet in diameter, but they varied much in size, at Anakena to only 2 feet across. In shape they were short, truncated cones, or nearly cylindrical. Some of the very large images have such small tops to the head that it would seem difficult to fit them with a crown.

The implement used for carving these statues was a long boulder-pebble from the shore, like a rolling-pin or huge incisor. The chisel-edge was produced by chipping it, and rubbing it down afterward with obsidian. On many of the statues little projections were left; these were portions harder than the chisels.

Ocremen stones and pillars were also found, having apparently served the purpose of altars; one pillar at least occurred for each platform, and human bones and skulls were found, apparently those of victims. Modern wood gods were numerous when Father Eugene and the French missionaries took up their residence on the island in 1838-90. They were generally male figures, about a foot in length, made of solid, dark wood; the profile, differing much from that of the colossal images, was strongly aquiline. These figures are well carved. The female figures are larger, and ruder is execution. Besides these idols there are figures representing lizards, sharks, fowls, and nondescript animals. The natives still carve these laries, but do not worship them, and appear to have lost all knowledge of their ancient religion and its symbolisms, as well as of their early history, though, as at the Hawaiians, Samoan, and other Polynesian groups, various traditions of emigration from the West remain.

The native inhabitants are the easternmost tribe of the pure brown Polynesian race, which in the area of its ocean habitat is the most widely diffused of any aboriginal race of men. They speak a language almost identical with that which is spoken in New Zealand, Samoa, the Lagoon Islands, and Hawaii, five thousand miles distant to the west and north. Captain Cook, on his second voyage (1774), remarked of them that "in color, features, and language, they bear such an affinity to the people of the more western isles that there can be no doubt of their having been descended
no trace of the missionaries who now remains; the people are absolute-
out religion of any kind. Their num-
ce numbers have been reduced by the
isolation of the islands to 67 men, 89 women, 150 in all; with the pros-
pects of all other Polynesian
of early extinction. Some years ago
were deported to Tahiti as laborers. The
aries took away 300 of them on leaving
T. They sold the mission property to a
Maison Brander, which has devoted
in 1888, 10,000 sheep, that yielded
wool a year, and 400 cattle. The na-
ise poultry, which thrives remarkably
The remnant of people still choose a
their own number by trials of strength
urage, which now, as in their more for-
times, they recognize as the only sub-
proof of superiority.
origin of the extraordinary remains on
island must be ascribed to an epoch
that of its occupancy by the Polynes-
ians, the immigration and dispersion of
among the Pacific islands took place
only not later than the first century of our
(A. Fornander, in ‘‘The Poly-
face’’), and possibly much earlier than
Evidence is wanting to show that any
atural or sculptural works of the kind
have been made by any Polynesian
though such works remain in several
Polynesia. Their objects were ap-
ly religious and monumental; but it is
that further researches, like those of
astian (‘‘Die heilige Sage der Poly-
and other important monographs),
ow more light upon the origin of these
cuts of prehistoric civilization.

THE RUSSIAN CHURCHES
—The Russian Orthodox Church
is the only Russian Church which is not
purposes, and the Holy Synod had under con-
trol more than 80,000,000 rubles, which had
been raised for various educational, publishing,
and benevolent objects. The gifts of all the
convents and churches for the year amounted
to about 12,000,000 rubles. This money was
spent in the ornamentation of churches and
convents, the maintenance of the Holy Sepul-
chre, the propagation of Christianity among
the pagans, the support of Orthodox people in Pal-
estine, and assistance to Orthodox clergymen in
the Caucasus and in Poland. The entire budg-
et of the Russian Church for 1888 amounted to
18,800,951 rubles, of which sum the Holy Synod
spent of its own means more than 6,000,000,
while the rest was supplied from the imperial
treasury. In the matter of assistance to sister
churches in the East, the Church in 1888 paid
to the Patriarch of Constantinople about 20,-
000 rubles, to the Patriarchs of Jerusalem and
Alexandria 1,270 rubles each, and to the Patri-
arch of Antioch 1,500 rubles. Many Orthodox
churches and convents in outlying countries
have been provided by the Holy Synod with sa-
cred paraphernalia and money, and several theo-
ological schools are supported by Russia in some
of those countries. More than 500,000 rubles
have been contributed for building an Ortho-
dox cathedral in the Schipka Pass of the Bal-
kian Mountains. The Russian Missionary So-
ciety is supported by more than 7,000 members,
has branches in about thirty dioceses, returned
a capital in 1883 of 722,057 rubles, and an ex-
penditure for the year of 184,000 rubles, and
enrolled 1,282 Japanese converts to Christianity.
The Russian Missionary Society and the Rus-
sian Orthodox Brotherhoods together returned
in 1883 10,812 converts to the Orthodox faith,
of whom 4,796 were from paganism, 5,295
from the Raskolnik sect, 1,027 from Roman
Catholicism, 700 from Protestantism, 572 from
Judaism, 410 from Mohammedanism, and 11
from the Lutheran church.
tion of which would be to curtail some of the established rights of the Church. From the foundation of the Ottoman Empire, the Greek Patriarch had enjoyed the right, subject to the Sultan's acknowledged power of nominating and deposing him, to exercise an exclusive ecclesiastical authority over the members of his own communion. The proposed reforms provided for changes, which, as the Patriarch showed in a remonstrance he addressed to the Porte on the subject, were not only inconsistent with the status quo as it had always existed, but would impair the ecclesiastical independence hitherto guaranteed to the Orthodox Greek Church. Besides a general argument on the subject, the Patriarch, Joachim III, specified six points in support of this view of the question: First, he showed that, under the provisions of the schema, civil actions, in which metropolitans, archbishops, and bishops were concerned, which were formerly required to be conducted in Constantinople alone, would henceforth be submitted to the local authority of the cadi, and criminal actions in like cases would be withdrawn from the jurisdiction of the ecclesiastical authority, which had hitherto been paramount, and submitted to that of the civil functionaries of the Ottoman Government. A second ground of complaint was that, whereas the Porte affected to recognize the authority and jurisdiction of the heads of the Orthodox Church in ecclesiastical cases, it practically declined to lend the authority of the civil power to the execution of their decisions. The ecclesiastical law was thus denuded of its civil sanction, and was by consequence made of no practical effect. The third point was that, in matrimonial cases and questions of divorce and judicial separation and the regulation of the amount which the husband should pay for the wife's maintenance, the jurisdiction of the Church, which had been exclusive, was made subject to the right of appeal to the civil courts. The fourth was the manner of the ecclesiastical to the civil authority in cases of testamentary disposition was made the basis of the fourth point of the Patriarch's protest. The two remaining grounds of complaint were concerning the building of churches and the regulation of schools, in both of which cases it was alleged that the Porte had deliberately neglected the obligations formerly recognized by it, and that the necessary authority for the construction of new churches and schools was now frequently withheld for frivolous and vexatious reasons, and often for no reason at all. At a meeting of the Holy Synod and General Assembly of the Orthodox Greek Community, held Dec. 31, 1888, the Patriarch, after the subject of the difficulties had been discussed, announced that he felt bound at once to resign his post, since it was impossible to carry out his duties any longer in such circumstances. The Synod asked him to reconsider his determination, but he declared that his official position had become untenable, and he could not countenance any show of wavering or weakness on such a question. The communication of the Patriarch's resignation to the Porte was accompanied by a petition of the Synod and Assembly that it be not accepted, and that the Government would take into consideration the difficulties which the contemplated changes in the position of the Greek Orthodox population would produce. The attitude of the Patriarch and the representations of the Synod and Assembly induced the Porte to reflect upon the steps it was contemplating, and to consider the expediency of modifying its proposed scheme in favor of the ancient privileges of the Church. It shortly proposed a "compromise" measure, under which it was provided that a priest might be arrested by the ordinary authorities and imprisoned, but that notice of his arrest must be given to his ecclesiastical superior, and the accused must be confined in a special apartment, separated from other of the prisoners, with regard to the other points, the former status quo would be respected, and the recent circulars modifying the old order of things would be countermanded. The Synod and Mixed Council, on the invitation of the Minister of Justice, in May, appointed delegates to treat with his Excellency concerning the questions at issue. The negotiations were conducted with apparent promise of an amicable adjustment, but, without waiting for them to be concluded, the Porte sent a communication to the patriarchate in which it disclaimed all intention of modifying the rights and privileges enjoyed ab antiquo by the Church; and, without promising to allow the definitive criminal procedure with regard to parish priests which the patriarchate desired, requested the Electoral Council to choose at once, in accordance with ancient usage, four candidates for the vacant patriarchal throne. At the meeting of the Electoral Council, October 4, some members were of the opinion that the election should be postponed until the criminal procedure with regard to the parish priests should be expressly defined according to the Greek view of the question, but others considered that there was no reasonable probability of obtaining any further concessions from the Turkish Government, and that, consequently, the election should take place without further delay. The latter opinion prevailed. The council named as its candidates for the office of Patriarch, the Archbishop of Smyrna, the Archbishop of Nicomedia, the Archbishop of Derkos, and the resigned ex-Patriarch, Joachim; the definite choice to be made afterward from among the names approved by the Porte as acceptable to it. The candidacy of the ex-Patriarch exciting opposition among some of the members of the Synod, he withdrew from the contest. The definitive election resulted in the choice of the Archbishop of Derkos. The selection was approved by the Porte. The newly elected Patriarch was granted an audience with the Sultan.
9th of October, and received the grand of the Medjidieh order. On the same
campanied by the clerical dignitaries, he
is to the Porte, and was afterward
installed into his office. A monthly
of £70 was accorded to the ex-Patri-
arch.
ction of the Archbishop of Derkos
ruled as favorable to the establishment
harmonious relations between the
Roman Catholic churches. The
arch had visited Rome during 1888,
and a conference with the Pope on the
difference between the two churches
pect of the question, a correspondent
Roman Catholic journal "Germania"
ian:
arch is the most celebrated and dis-
representative of the so-called "lay party",
which is penetrated with the conviction
with Rome is the only means of wakening
church from her torpor to new life. He
has, therefore, a special significance. It
the official leaders of the community are
to an eventual reunion. Not only in Rome,
the Greek Church, it has made a deep
It is well known that for a considerable
warfare has been going on between the
Himatic Church and the Greeks, in order
upper hand in the religious affairs of the
Hellenistic party is very active, and has
ives in Athens, Constantinople, Palestine
Jerusalem), Syria, and some districts of
in. The efforts of its followers are directed
ake off the Turkish yoke, and at the same
and combat the ever-growing influence of
The most gifted minds of this party have
run to see that, in their isolation, they can
difficulty make stand against the encroach-
musian policy. They of them have begun
ession to the idea, in newspapers and re-
union with Rome will have as its conse-
refreshing and revival of the languishing
Parallel with these two currents is the re-
ment in the Balkan Peninsula—a move-
thook its rise in consequence of the Ency-
pe Pope on SS. Cyril and Methodius, and
owerfully supported by Bishop Strossmayer,
perticular reference to the specifically Ori-
ter, is busy with positive preparation for
the Slav and Roman Churches.
ction of a patriarch disposed for an
ading with Rome was regarded by this
as a favorable prognostic of ultimate
ffecting a reunion. These hopes
artial color of encouragement from
ange of courtesies and official visits
ok place in the latter part of Novem-
rean the Apostolic Legate and the
ail Patriarch.
10 Coptic Church.—Recent visitors to
 articulately Mackenzie Wallace and Vil-
rt, have published some facts concern-
ent condition of the Coptic Church
opic people. Except for a sharper
 on its position on the Monophysite
the faith of the Church has not
since the separation achieved at the
of Chalcedon, a. n. 451. It has its own
ritual, and observant
 facts. Of the two branches claim-
ing to be the Coptic Church, the Jacobites have
a patriarch, who asserts supremacy over the
Byzantine Church, and in whose election the
Patriarch of Abyssinia has a voice, with twelve
episcopal sees. The Roman Catholic Copts,
who have built up several communities in Up-
er Egypt since the end of the seventeenth cen-
tury, use a liturgy not differing much from that
of the Jacobites, except that in the "commemo-
ration of the faithful departed" they make
mention of the "six hundred and thirty who
were gathered together at Chalcedon." A cur-
ious custom prevails among the Copts of dis-
tributing to the poor, on Whitsunday, doles of
meat and fruit on behalf of their deceased
friends. According to Villiers Stuart, the Cop-
tic people are all educated, and constitute
the most industrious and intelligent class of the
community. They number about 250,000 in
Upper Egypt, where they form one fourth of
the population in some towns; and about 50,000
in the Delta. Their churches, in style and
decoration, somewhat resemble those of the
Russians, and they are, in fact, in communion
with the Greek Church at Ostium. Mackenzie
Wallace represents them as constituting the
wealthier part of the population, and as being
preferred, on account of their readiness at writ-
 ing and calculation, for clerkships and secre-
tariats under the Government. They have
a costly and florid cathedral in Cairo. Provi-
sion is made for schools at which a considerable
number of boys are taught reading, writing,
and arithmetic; but for girls there is only a
single school in Cairo, where are taught read-
ing, writing, arithmetic, Arabic hymns, and
Holy Scripture. A "Young Coptic" party of
considerable force has lately arisen, which is
seeking to improve the standard of education,
and to promote the cultivation of a better ac-
quaintance with the ancestral faith and the
grounds on which it rests. Under its instiga-
tion the priests of the old churches have begun
to collect the books that were gradually perish-
ing in their closets, in order to place them in
a public library to be established at the Patri-
arch's residence. An extension has been given
to the powers of the council. The subject of
school reform has been under consideration.
The question of ways in which it may be
possible to approach the Coptic Church has
been under consideration among members of
the Church of England. At a meeting held in
February, 1888, a committee was appointed to
consider what steps should be taken "to revive
and extend true religion in Egypt." The sub-
ject was also discussed in the Convocation of
Canterbury, and was found to be involved in
difficulties. In whatever way the effort might
be made, the proceeding appeared to be very
embarrassing. If it were proposed to plant a
branch of the Church of England among the
Coptic people, that would add one more to the
many divisions of the East; if to help the Cop-
tic Church and manifest friendly relations with
it, that might make trouble with the Orthodox
(or Greek) Church; if to help the Orthodox Church, that might bar friendly access to the Coptic Church; if to carry on a mission, that would be to treat the land of the Copts as a heathen country; if to preach the gospel, that might be regarded as implying that no gospel was preached there at present. But the friends of the movement for establishing intercourse consider themselves as pledged to do something toward carrying out that object.

IV. The Armenian Church.—The delegates of the Armenian Church met at Etchmiadzin, in May, to complete their functions in the election of a new Catholicos, or Metropolitan Bishop. When Armenia was an independent nation, the election of the Catholicos was conducted by the representatives of its own bishops as assembled in concilia; but since the nation has been subjected to foreign powers, and particularly since its territory and people have been divided between Russia and Turkey, this method of election has been impracticable. On the present occasion, the Armenians of Turkey, constituting the majority of the nation, chose Monsignor Nerses, the actual Patriarch of Constantinople, by the highest number of votes; while next to him in the list of persons voted for, stood Monsignor Melchizedek, Bishop of Smyrna, and the ex-Patriarch, Monsignor Khuriman, the bishop who had visited England in 1878, to represent the cause of the Armenians to the British Government. The final election having to be held, however, at Etchmiadzin, delegates were appointed at this concile to represent the Turkish Armenians there. At this point, the Russian Government interposed an objection to acknowledging the delegates thus chosen, and, declaring that they would be regarded as representing only the See of Constantinople, insisted that the election of the Catholicos should be conducted in accordance with the laws known as the Balageria. These laws require that the names of two or more candidates who have obtained the largest number shall be submitted to the Emperor, and that he shall decide which one among them shall be the Catholicos. This stipulation has always been objected to by the Armenians, as contrary to the canons of their Church and as detrimental to their time-honored right of free and untrammeled election. The concile at Etchmiadzin concurred with theTurkish bishops in the choice of Monsignor Nerses as the first candidate, and sent up, as alternative candidates for the approval of the Russian Emperor, the names of Monsignor Melchizedek and Khuriman. Although the choice of Monsignor Nerses was approved by the Emperor, he declined to accept the office of Catholicos under the conditions imposed by the Russian statutes, because they were regarded as derogatory to the ancient privileges of the Church. On the 7th of November, Monsignor Nerses died, in the forty-eighth year of his age, after a life distinguished by services to the Armenian people and Church. He was born in Hasekuei, a suburb of Constantinople, and was educated by the priest Der Kivork to be a teacher at Adrianopile, and afterward a parished, or preacher. As his first public mission, he was dispatched to Zeitun, to defend the Armenians there who had been in rebellion. Having been ordained a bishop before returning from Zeitun, he was immediately sent on a mission to Russia, and afterward to Egypt, where he succeeded in interesting the Armenian minister, Nubar Pasha, in behalf of the education of his people in Constantinople, and returned with the means to found a superior school for Armenians at Hasekuei. Unfortunately, the endowment funds of this school were invested in Turkish bonds, and were lost by the bankruptcy of the Government. He was afterward made Bishop of Nicomedia, and finally Patriarch of Constantinople, when only thirty-six years old. He was consulted during the negotiations which attended and followed the conclusion of the Russo-Turkish War, and secured the insertion in the Treaties of San Stefano and Berlin of articles binding the Turkish Government to establish a just government in Armenia, which should give full and equal rights to the Christians.

The elections for a new Catholicos were not to take place for three or four months after the death of Monsignor Nerses. The Turkish candidates for the office were understood to be Archbishop Coren de Luguisan and Monsignor Melchizedek.

Ecuador, a republic of South America. Its area is about 206,500 square miles; the population is estimated at 946,000, exclusive of the aborigines inhabiting the eastern provinces and eastern slopes of the Andes. The population is distributed over the eleven provinces as follows: Pichincha, 120,290; Guayas, 84,421; Manabi, 67,852; Esmeraldas, 10,000; Los Rios, 60,065; Chimborazo, 128,310; Tunguruga, 70,148; Leon, 101,282; Imbabura, 83,659; Azuay, 100,000; and Loja, 100,900. The number of wild Indians is estimated at 10,000,000. Six new provinces have recently been organized, viz., Oro, Almedo, Carchi, Bolivar, Azogues, and Oriente. The Galapagos Islands, 1,810 square miles, belong to Ecuador, but have only 60 inhabitants. The capital is Quito, population 80,000. Guayaquil, the principal port, has 40,000; Cuenca, 80,000; and Loja, 10,000.

Government.—The President is Don José Maria Páez Córdoba, inaugurated at Quito, Nov. 28, 1888, having been elected on October 28 for the term of four years. The Vice-President is Gen. A. Guerrero. The Cabinet is as follows: Interior and Foreign Affairs, M. Espinosa; Finance and Public Works, V. L. Salazar; War and Navy, Gen. J. M. Sarasti. The Governor of Guayaquil is Gen. J. A. Gomez. The Archbishop at Quito is J. J. Ordoñez.

The Minister of Ecuador at Washington is Don Antonio Flores, who has twice before represented his country at the American capital. The American Consul at Guayaquil is
Mr. H. Beach, and the Ecuadorian Consul at New York Mr. H. Kiesewetter.

Army and Navy.—The regular army does not exceed 5,000 men, and the navy has but two steamers.

Events of 1884.—By the earthquake that took place in Guayaquil on March 26, two of the churches suffered severely; the walls of one of them were badly cracked. Two months previously Cotopaxi had given signs of activity. At noon, on Dec. 18, 1888, ashes began to fall from the crater of the volcano, and by eight o'clock in the evening the shower of ashes was heavy enough to cover people's clothes at Quito like snowflakes. On the morning of the preceding day a peculiar purple color of the sky toward the south of the capital extended along the horizon 90°, reaching upward about 45°.

Early in the year the Constituent Assembly embodied the following fundamental law in the new Constitution: "The religion of the republic shall be the Catholic Apostolic Roman, the exclusion of every other. The political power of the country must cause it to be respected, and protect its right and liberty."

When, early in December, 1884, the British steamer northward bound approached Ecuadorian ports, it was signaled from shore that communication with any of them was prohibited. President Camaño was at Guayaquil, and it was then believed that he had no intention of attempting to regain authority in the northern coast towns, where the friends of Gen. Eloy Alfaro were in full possession. Trouble had been brewing since Dec. 24, 1888, in consequence of a bitter discussion in the National Convention on the previous day over some feature of the Church question, when Don Timoleon Flores, brother of the Ecuadorian minister at Washington, Julio Roman through the arm with a revoler.

On Dec. 16, 1884, news was received from Guayaquil that a general rising against the Government had been arranged, and that in the night of the 15th Gen. Alfaro had left the Bay of Panamá, on November 6, in the Alajuela, with 200 Ecuadorian exiles for Esmeraldas. Scattered bands had taken possession of several towns, and in some instances fighting occurred, ended with loss of life. In one of these fights on the slope of the Cotopaxi volcano, twenty or thirty men were killed, and the Government forces compelled to retreat. The rebels on the coast were more unfortunate. After a fight at Tumaco between the Alajuela and the Nuevo de Julio, Alfaro effected a landing on the Ecuadorian coast. On November 30 he endeavored to capture Puerto Viejo, but was defeated by the Government forces and compelled to seek safety in flight. Gen. Alfaro then returned to the Alajuela, leaving his men to join the parties in revolt in the interior. On December 8 he moved toward Bahía, and when off Las Cruces fell in with the Government steamer Huasco. He steamed alongside of her, and, after a heavy fire, carried her by boarding. She was full of troops, to whom her bare hull offered no protection, and it is said that at least 400 men were killed or wounded. These belonged to the Government party.

While the victors were examining their prize, the Nuevo de Julio, another Government vessel, put in an appearance. The Huasco was useless for fighting, and the Alajuela was damaged and her captain dead. It was then determined to run her ashore, take out what could be removed in a hurry, and burn her. This plan was followed, and the Nuevo de Julio proceeded to Bahía with her crippled consort.

A letter from Quito, dated end of December, says: "This capital is a veritable Babylon. No one appears to comprehend the political sentiments of his neighbor, and the panic in the Government files is increasing daily. Gen. Victor Frías and other notables have been arrested on suspicion of sympathizing with the revolutionists. The prisons of Guayaquil are full of suspects, among them Señor Pastor Intriago and a number of his workmen, who are accused of having given a canoe to Marcos Alfaro to enable him to go up the river Guaya, Vice-President Guerrero, who is in power in this city, issued a proclamation on Nov. 19, calling upon the people to support him."

Gen. Alfaro is the leader of the Liberal party, and it is asserted by those in favor of his accession to power that if he succeeds in the revolution he has undertaken the church and state will be separated, and religious toleration established for the first time in the republic.

National Indebtedness.—The foreign debt amounts to £1,824,000, contracted in England in 1835, and the internal debt to £2,200,000. The annual income of the Government is $4,000,000 in silver, and the outlay $3,500,000. At the amount of revenue collected from customs at Guayaquil in 1888 was $1,497,310, of which $1,388,250 was on imports and $113,060 on exports.

Railroads.—The railway from Yoaguachi to the river Chimbo, 77 miles, is completed and in operation.

Telegraphs.—Since Oct. 1, 1882, the republic has been in direct communication with the rest of the world by means of a land line of telegraph from Guayaquil to Bellénita, and cable from the latter to the Isthmus of Tehuantepec, whence there is communication with New York. The company owning the line is the Central and South American.

Mail Steamship Communication.—Since Jan. 1, 1884, the Pacific coast steamers south of Panama are running on a time-table without reference to the steamers plying between Aspinwall and New York, sometimes making connections, at other times not.

Commerce.—The exportation of merchandise in 1888 amounted to $4,923,300, the chief articles being cocoa, 198,600 quintals, of 104 pounds American, worth $3,373,500; cascarilla (quinine) bark, $137,000; India-rubber, $428,800; furthermore tagua (vegetable ivory).
Guayaquil straw-hats, coffee, hides, skins, etc., making up the rest.

The Church.—The concordat that Pope Pius IX. imposed on the republic in 1868 consecrated the ensuing principles: 1. Neither liberty of conscience nor liberty of association. No religion to be tolerated but the Catholic, nor any society condemned by the Church. 2. Monopoly of education for the benefit of the Catholic clergy. 3. The instruction of children and young people generally in universities, colleges, faculties, schools, both public and private, to be entirely in harmony with the dogtrines of the Catholic religion. 4. All ecclesiastical causes shall be judged by ecclesiastical law courts only, Article VIII stipulating that this relates specially and above all to matrimonial suits, and all those concerning the faith. 5. The establishment of tithes for the support of the Church and clergy, one third of this tenth to accrue to the Government. 6. The right of refuge: criminals cannot be arrested if they take refuge in a church or any other holy place.

Climate and Resources.—Early in January, 1868, it was reported from Guayaquil that that section was suffering from continued dry weather. The rainy season ordinarily begins in November or December; but early in January the weather continued very dry, not more than one fourth of an inch of water falling within six months. This has had the effect of curtailling the cocoa and coffee crops.

Balsa-Wood.—This wood, celebrated for its extreme lightness, and therefore suitable for life-saving rafts, etc., grows beside the Gulf of Guayaquil, and is used for the construction of craft to sail far out into the ocean for fish, and to carry fruit to ships at anchor in the roadstead. Balsa-wood, when dry, weighs about thirteen pounds to the cubic foot, and has in salt water a supporting power of fifty-one pounds per cubic foot. Consequently, a raft of ten logs, twenty feet long by sixteen inches square, will carry one hundred people.

Cocoa.—The crop of 1868 was short, being only 170,000 quintals up to Nov. 21, against 190,000 in 1867, and 210,000 in 1868.

Local Industries.—The American consul, Mr. Beach, says in his latest report from Guayaquil to the State Department:

There are in this city a fair variety of manufactories, but none very extensive, the people relying mainly on the outside world for manufactured supplies. The supplies obtained from the United States are large, and the amount is increased annually. The United States supplies all of the sugar-making machinery, all of the saw-mills, all of the planing-mill machinery, nearly all of the steam-engines, all of the carts, all of the sewing-machines, nearly all of the best saddles and harnesses, all of the street-cars, some of the furniture, all of the store-trucks and wheelbarrows, a large share of the axes, many billiard-tables, a portion of the musical instruments, etc. The articles supplied from the United States give good satisfaction, and the trade promises to be largely increased. In some instances the lack of thoroughly skilled labor causes a great abuse of machinery.

The two leading manufacturing establishments of Guayaquil are combined steam saw-mills, foundries, and machine-shops. The two concerns use circular saws, both of which work slowly and inefficiently, because of the remarkably springy nature of the wood, a log twelve feet long springing from two to four inches out of line when a slab is taken off. The two mills turn out about 150,000 feet of lumber a year, which is sold at an average of $35. The foundry and machine-shop work is mostly in the line of repairs, and is quite extensive. Cast iron is sold at 16 cents a pound. About sixty men are employed in the two establishments, whose wages range from 70 cents to $2 a day. United States currency is used.

There is one steam planing, matching, turning, and small-sawing establishment, whose entire outfit was obtained in the United States. It does this work with such an establishment, but mainly for carpenters and builders. There are two ice manufactories, both of whose machinery was obtained in New York. They daily turn out a total of 3,000 pounds of ice, which is sold at seven cents a pound. Each concern employs four men, with wages ranging from $1 to $2 a day. The timber of Ecuador is excellently adapted for ship-building.

Egypt, a principality of northern Africa, tributary to Turkey. Mehemet Ali, the governor, rebelled against the Porte in 1811, and assumed the powers of government. In 1841 he was recognized, under the guarantee of the five great powers of Europe, as Vah, or Viceroy, and the sovereign authority was made hereditary under the Turkish law of succession. In 1868 Ismail obtained a firman creating him Khedive, or King, and establishing direct male succession by primogeniture, in return for which concessions he submitted to the increase of the annual contribution to the Sultan's civil list from $1,880,000 to $3,600,000. By another firman, issued in 1878, he obtained the rights of concluding treaties and maintaining an army. In August, 1878, the Sultan was induced to depose Ismail I, who was involved in financial difficulties. His son Tewfik was placed on the throne, and the government was administered under the supervision of two Controllers-General, appointed one by the French and one by the British Government, who were given the right of investigation into all departments of the public service, and an advisory voice at the councils of the Cabinet. By a second decree, the Khedive, issued April 5, 1880, an International Commission of Liquidation was appointed to elaborate a financial law to regulate the relations of Egypt with her creditors. The scheme, consolidating the foreign debts, fixing the interest at 4 per cent, and reserving certain revenues to meet it, was sanctioned by the Khedive in 1881. That same year a political movement was set on foot to deprive the Controllers of the extraordinary powers they had assumed over legislation and administration, and place the powers of government in native hands. The French and English governments refused to accede to the demand, in the beginning of 1882, for the transfer of legislative powers to a Chamber of Notables. The movement, which was accompanied by military preparations, was treated as a military rebellion. The British Government sent an army to occupy Egypt, the French
government declining to join in the intervention. The Egyptian army under Arabi Pasha assisted the occupation, and was finally subdued in September, 1882. It was then disarmed, and English officers were intrusted with the tasks of organizing a new military establishment and a gendarmerie, while the

rig of Dufferin, British ambassador at Constantinople, was sent to Egypt to work out a scheme for the reform and reorganization of the Government. His plan for a native parliamen
tary government, similar to that aimed at by Arabi, was not put into practice. After the abdication of the dual control by Khedivial decree in January, 1883, Sir Auckland Colvin, the English Controller, was appointed financial adviser of the Khedive, and upon his retirement, E. Incent Clifford Lloyd was appointed adviser to the Minister of the Interior. A Council of State, consisting of eleven European and eleven Egyptian members, was opened Oct. 30, 1888. Amil Barrère presented his credentials as French diplomatic agent and consular general for, $3, 1888. The French Government re
sisted to admit the legality of the decree abolishing the dual control until a provisional agreement was reached at as a basis for a conference of the great powers on Egyptian finances, which met in June, 1884.

The Egyptian Cabinet, presided over by Sherif absha, unable to agree to the English proposal to evacuate the eastern Sudan and the Equatorial Provinces, handed in their resignations in the beginning of January, 1884. A new Cabinet was formed January 9 by Nubar Pasha, imposed as follows: President and Minister of Foreign Affairs and Minister of Justice, Nubar Pasha; Minister of the Interior and Minister of War and the Marine, Abdel Kader absha; Public Works, Abderrahman Ronshdi Pasha; Minister of Finance, Musapha Fehmi Pasha; Minister of Public In
duction, Mahmoud Falaki Pasha.

Area and Population.—The area of Egypt after the Sudan was estimated at 600,000 square kilometres, with a population of 16,500,000 people. Egypt proper contained 2,277, according to an official estimate, 5,17,627 inhabitants, of whom 4,946,512 were resident in the mohafazas, or provinces, and 49,115 in the mohafazas, or town districts. The total area of Egypt proper is 1,021,354 square kilometres, of which 176,546 are embraced in the mohafazas and 844,808 in the mohafazas. An enumeration in 1883 made the total popu

ation 6,798,290, of whom 3,838,918 were males and 3,404,312 females. The foreign colon
ies in 1873 numbered 44,084 males and 24,599 females, total, 68,683; divided in respect to nationality as follows: Greeks, 20,569; Italians, 14,594; French, 14,310; English, 3,795; Austrians, 2,480; Spaniards, 1,003; Germans, 76; Persians, 752; Russians, 556; Americans, 95; Belgians, 137; Dutch, 119; other nationalities, 304. The number of births in 1877 was 73,829; deaths, 168,688; excess of births, 8,4,861; natural increment from 1844 to 1877, 1,054,388. The net immigration between 1873 and 1877 was 19,241. The population of the chief cities in 1888 was as follows: Cairo, 366,108; Alexandria, 268,775; Tanta, 68,729; Damieta, 24,056; Mansura, 62,784; Zagazig, 19,046; Rosetta, 61,671; Port Said, 16,500; Suez, 10,913. The population of the three geographi
cal divisions of Egypt Proper was in 1877, exclusive of the town districts, as follows: Lower Egypt, 2,923,995; Middle Egypt, 653,115; Upper Egypt, 1,471,398. The whole country is divided into eleven administrative provinces.

The Sudan.—The conquered and annexed provinces on the Blue and White Niles, and in Equatorial Africa, were administered as a single district by a governor-general before the general revolt in those regions, when the authority of the Egyptian Government was superseded by the power of the Mahdi. After the rebellion of Arabi the Sudan was placed in charge of a special ministry. The conquest of this region was begun sixty years ago by Mahomet Ali, who annexed Kordofan and Sennar, the banks of the Nile, and the Red Sea littoral. Ismail conquered Darfour and the Equatorial Provinces. The eastern Sudan is a level region surrounded by a rim of mountain-chains. The provinces of Sennar, Fassqole, and Taka, bordering on the Abyssinian plateau, are exceedingly fertile, being copiously watered and enriched by annual alluvial deposits, like the delta of the Nile. They produce abundant crops of cotton, sesame, pulae, durras, wheat, and other grains. Their forests harbor the elephant, the rhinoceros, the lion, the leopard, the giraffe, and other large animals. The provinces of Khartoum, Kordofan, and Dar
four have many of the characteristics of a desert climate. Except in the districts of Bara and Abub Harras in Kordofan and other depressed areas or mountain-regions, the vegetation is scanty and the earth covered with brushwood only during the brief rainy season. Further north the precipitation falls away to such a degree that the Sudan is separated from Egypt by as arid and desolate a desert region as can be found in the world. The southern portion of the Sudan, being an inviting country easy of approach and of conquest, contains a mixed and varied population, composed of Shilluk, Nuer, Dinka, Bongo, and other negro races. In the north the population is a mixture of black and light-colored races, in which the Arab blood predominates.

Army and Navy.—According to the plan of Baker Pasha, who was charged with the reorg
anization of the Egyptian army, the military establishment was to number 10,900 men of all arms, including two regiments of gendarmeries of 700 men each. In accordance with the recom
mendations of Earl Northbrook, the budget for 1888 provides for a reduction of the army to 4,000 men, with 19 English officers, and an
increase of the police force by 3,000 men. The navy, composed of 13 steamers, poorly armed.

Commerce and Navigation. — The reported value of the exports rose from 2,750,000 Egyptian pounds in 1855 to 10,380,000 in 1875, 12,980,000 in 1880, 12,980,000 in 1881, 10,840,000 in 1882, and 12,310,000 in 1885, not including the duty-free transit trade with Turkey. The value of the foreign trade with various countries was in 1885 as follows, in Egyptian pounds:

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain</td>
<td>8,306,470</td>
<td>8,425,840</td>
</tr>
<tr>
<td>France</td>
<td>1,107,300</td>
<td>1,054,000</td>
</tr>
<tr>
<td>Austria</td>
<td>970,000</td>
<td>829,000</td>
</tr>
<tr>
<td>Italy</td>
<td>278,490</td>
<td>517,790</td>
</tr>
<tr>
<td>Turkey</td>
<td>108,640</td>
<td>401,160</td>
</tr>
<tr>
<td>Russia</td>
<td>187,200</td>
<td>146,700</td>
</tr>
<tr>
<td>United States</td>
<td>97,000</td>
<td>97,000</td>
</tr>
<tr>
<td>Germany</td>
<td>2,000</td>
<td>2,000</td>
</tr>
<tr>
<td>Other countries</td>
<td>611,000</td>
<td>21,839</td>
</tr>
</tbody>
</table>

Total: 13,309,580 13,177,070

The non- dutiable exports to Turkey, re-exported merchandise on which duty has been paid in Egypt, amounted to 132,810 pounds, and the imports from Turkey of the same class to 1,268,110 pounds, making the total value of the exports 12,908,680 pounds, and of the imports 8,596,970 pounds.

The value of raw cotton and other textile materials exported was 7,546,000 pounds; of cotton-seed, 1,637,000; of cereals, 1,644,000; of sugar, 584,000. The value of the import of textile manufactures was 3,021,000 pounds; of coal, 910,000; of drugs, dyes, and chemicals, 469,000; of fermented liquors, 342,000; of metals and metal manufactures, 275,000; of wood, etc., 283,000.

The total tonnage entered at Alexandria, Port Said, Suez, and other Egyptian Ports in 1880 was 8,342,023 tons, of which 294,183 tons were under the Egyptian flag. The steam tonnage cleared was 8,545,045, and the total tonnage cleared was 8,355,614 tons, the steam tonnage 2,985,293. The Government owns 16 packet-boats, which ply between various ports in the Red Sea and the Mediterranean.

Railways, Posts and Telegraphs. — The total length of railways in operation in 1888 was 1,518 miles, all state property.

The number of letters forwarded in 1883 was 2,497,000; of registered letters, 213,069; of postal-cards, 108,000; of newspapers, 1,340,000; the value of postal-orders, 365,027 Egyptian pounds; of money shipments, 949,017 pounds; the number of international letters and postal-cards, 2,177,000; receipts in 1883, 80,380 pounds; expenses, 68,613 pounds.

The length of telegraph lines completed in 1878 was 7,841 kilometres; of wires, 12,040, of which 8,097 were in Egypt proper, and 3,945 in the Soudan.

Finances. — The revenue is derived chiefly from a land-tax which is exceedingly heavy, approaching in amount the rent paid to proprietors in other countries, but for which the cultivators receive a partial return in the irrigation works constructed and maintained by the Government. The revenues of four of the provinces, together with the customs and tobacco duties, are assigned to the service of the unified debt; the railway receipts and port dues of Alexandria to that of the preference debt. The yield of the land-tax in all the provinces within the past few years has varied from £4,250,000 to £5,250,000, the latter amount representing an average tax of £5 an acre, taking the cultivated area at 43 million feddans or acres. The revenues assigned to the unified debt produced, in 1880, 2,262,599 Egyptian pounds (1 Egyptian pound = 5£); in 1881, 3,810,302 Egyptian pounds. Those assigned to the preferred debt yielded in 1880 1,281,211 Egyptian pounds; in 1881, 1,391,938 Egyptian pounds. The total yield of the assigned revenues was 4,544,329 Egyptian pounds in 1880, and 4,701,665 in 1881. The unassigned revenue, or ordinary revenue, available for the expenditures of the Government, subject to certain prior charges, comprises the land-taxes of the other provinces, the taxes of Cairo, Alexandria, and the six town governments, the receipts of the tribunals of reform, of the mail steamers and post-office, the salt-tax, and revenues from other sources. The unassigned revenues yielded, in 1880, 4,391,078 Egyptian pounds; in 1881, 4,810,116 pounds; making the total revenue, in 1880, 8,364,436; in 1881, 9,011,771 Egyptian pounds. Until the rebellion of the Sudan, and the British occupation, the ordinary as well as the assigned revenues showed a surplus. The events of 1882 left a deficit of 19,487 Egyptian pounds, besides 97,754 pounds required to make up the interest of the domain loan and the expenses of the British occupation, which amounted to about 700,000 pounds. The budget for that year estimated the receipts at 8,746,556 pounds, and the expenditures at 9,265,408 pounds for 1883 placed the total receipts 8,604,677 pounds sterling, and the total expenditures at 8,681,918 pounds sterling. The unassigned revenues yielded, as usual, a surplus; but the expenditures, under English protection, increased while the resources declined, so that instead of a surplus the budget showed again a deficit. The closed accounts showed the total receipts to be 8,304,075 Egyptian pounds, and the total expenditures 8,156,939 Egyptian pounds. The chief heads of expenditure were as follow: Turkish tribute, 678,012 pounds; interest on the public debt, 3,746,961 pounds; civil list, 314,503 pounds; the Khedive's Cabinet, 81,977 pounds; railways and telegraphs, 520,240 pounds; port of Alexandria, 31,040 pounds; Ministry of War, 164,710 pounds. Of the total revenues, 4,918,883 pounds were derived from the land-tax; 78,284 pounds from the Alexandria harbor dues; 1,233,980 pounds from the railways and telegraphs; and 756,095 pounds from customs. The net proceeds of the last three sources of revenue and 2,482,251 pounds of the land-tax.
dispute between the English Resident Minister and the Egyptian Cabinet. The Egyptian ministers declared that the Khedive had not the right to give up any part of his dominions, as they formed an integral part of the Ottoman Empire, and were confided to his protection by firmans of the Porte. The English agent finally informed Sherif Pasha that, as long as British troops occupy Egypt, the English Government would not allow its advice to be contested, but insisted upon its being accepted and carried out. The ministers thereupon handed in their portfolios to the Khedive, stating that the English demand was a violation of the re-
script of August 28, 1878, and rendered it impossible for them to fulfill their duties. The Khedive sought to induce Eyb Pasha, Riaz Pasha, and others, to take the post of Premier, but found no Egyptian willing to assume the responsibility of abandoning the Soudan. At last he yielded to the pressure of the English Resident, and accepted the nominee of the latter, the estate Armenian, Nubar Pasha, Ismail Pasha's former Prime Minister.

**English Administration of Egypt.**—None of the English measures of relief or reform were carried out in a way to accomplish their object, however correct in principle. The taxes were made payable in kind, which afforded a better price to the fellah than he could obtain in the disturbed state of the markets; yet this provision gave opportunities to the officials for extortion. The promised remission of the land-taxes in Upper Egypt produced uncertainty, and prompted the fellahen to refuse to pay their rents, in the hope that they also would be reduced. The efforts to economize in the administration all failed. New methods were found unworkable after a useless expenditure.

When an Englishman was appointed to take the place of three or four French or native officials, the considerable reduction in salaries apparently attained was turned into an increased charge on the budget by the necessary employment of clerks and translators. Under the direction of Mr. Clifford Lloyd, sweeping changes were attempted in the internal administration, which aimed to replace a central power, wielded by Englishmen in accordance with English ideas, not only the authority of the ministry, but that of the provincial muftis. In their haste to reform the abuses connected with the administration of justice and the prisons, the collection of taxes, etc., and to impress an English character on the system of administration, they disregarded alike the customs and sanctions of the Mohammedan law and the principles and practices of French justice and administration naturalized in Egypt. The result was the demagogy of the whole machinery of justice and government. The authority of the provincial governors, in the attempt to curtail the arbitrary power which they abused, was annulled to such an extent that the fear of the law declined among the people, and crime and violence became preva-
lent. The foreign colonies, as well as the native community, were alienated by these unfortunate attempts at reform. The French diplomatic agent began to assume a bolder tone. Nubar Pasha asserted an independent judgment for the first time, and protested vigorously against the removal of officials obnoxious to the English agents, and the disorganization of the public service by their arbitrary proceedings, some of them in contravention of positive laws. He even threatened to resign. The British ministry therefore recalled Clifford Lloyd in May. Sir Evelyn Baring also retired, and was succeeded by Mr. Egerton.

The prisons, which were in a shamefully unsanitary condition, were made more habitable by the efforts of Mr. Lloyd. Among the measures enacted through the influence of the English, but difficult of speedy enforcement, was a decree abolishing domestic slavery throughout Egypt, promulgated in August.

A finance committee, to pass upon claims against the Government, was established March 6, 1884, composed of the Minister of Finance, Financial Adviser Edgar Vincent, Under-Secretary of Finance Fitzgerald, and M. Mazoc. Through this committee the English agents practically controlled the financial department, and gave authoritative advice to the heads of other branches of the Government. Mr. Vincent proposed to endow it formally with the function of framing the budget.

A tobacco convention was concluded with Greece March 8, 1884. The receipts of the Treasury from tobacco duties were increased, by the admission of Greek tobacco under the convention, at the rate of 122 per cent. over those of 1883. The Turkish Government raised objections to the convention. The legitimate imports of Turkish tobacco were not diminished, but the smuggling-trade was almost extinguished.

Brigandage.—In the early part of the year the effects of war, agricultural distress, and the complete disorganization of government were manifested in robberies and deeds of violence never before known. Bands of mounted robbers, twenty to forty in number, plundered farms and villages by daylight. Burglaries were committed at night in great number. In the province of Fayoum eight Europeans were murdered in April. The police, under English direction, were worthless. The further the English carried out their plans in the administration of justice and police, the more frequent and startling became the crimes. This fact suggested to the English authorities the suspicion that the banditti were employed by corrupt Egyptian officials for the purpose of bringing their reforms into discredit. After the departure of Clifford Lloyd, and resumption of a fuller control over the administration by the Egyptian ministry, the re-established influence and authority of the local Mohammedan officials sufficed to check the spreading anarchy to some extent.

The Land Tax.—The condition of the farmer was in general worse after two years of English control than before the occupation. Th owing to the financial and political crisis, the exaction of the full amount of the tax was impossible. The poor cultivators to borrow at exorbitant interest sell their crops in advance at half their true value. The cattle disease imported by the Egyptian army; to the fall in the price of wheat and other products; and to other causes. In Egypt especially, where only one crop is grown, in the year, and that not so profitable a product of the Delta, there was considered an increase of distress. In that part of Egypt where cultivable area is a narrow strip, about six miles in average breadth, overflowing Nile, there was great inequality, owing to difficulties in the collection of taxes. Making the taxes of 1884 payable in paper, the government purchased a new opportunity to collect the taxes from 2 to 4 per cent. of the amount of their taxes. The rich provinces remained poor by the rich produced so fast and in such quantity that no Ismail that a large proportion of the former small proprietors were now reduced to the condition of cotters and laborers. The present agricultural crisis, and the administrative confusion, facilitated this process. The British Government proposed to borrow the purpose, he intended to extend works, but would have nothing for irri presentation of Upper Egypt he deemed able; but they would require a much sum in addition. The cadastral survey on account of financial exigency of the Government, this great work was completed. The views of the determinate adjustment. The measures proposed for relief were based on the fact that reduction in the interest on the debt, were the remission of the date-tax, the to the tax, river and canal tolls, the derrai, on duties, and export duties, the road tariffs, etc. It was proposed, not equalize the taxes on the Usburi and Radji lands. The former were originally lands, granted to wealthy people for rec
tion, and exempt from taxation. Said Pasha finally imposed a tax, which he fixed at a rate representing one tenth of the produce; hence they came to be known as Usuriri, the name applied in conquered countries to the lands of the true believers, which are subject only to the religious tithes. Mr. Rowseal, who investigated the land question at the request of Nubar Pasha, reported that there are in Upper Egypt 1,607,787 feddans of Kharadjli, on which the average tax is 119 piasters per feddan, and 438,907 feddans of Usuriri, which pays an average rate of only 37.22 piasters; and in Lower Egypt 1,738,989 feddans of Kharadjli, paying 188.8 piasters per feddan, and 871,019 feddans of Usuriri, paying 59.89 piasters. The tax paid upon the Usuriri by Said Pasha was one half the usual rate, but in the course of time the proportion has changed to the disadvantage of the poorer proprietors of the Kharadjli lands.

The Financial Question.—The English found their hands bound by the bankruptcy of the Egyptian Treasury, which resulted from their military and political interference, and the manner in which it was carried out. Whatever slight improvements were wrought in the administration before the summer of 1888, came to a standstill. From that time lawlessness and crime increased. English officials, who were appointed in the place of Egyptians, were less competent than they to check the tide of anarchy. The disastrous expeditions of General Hicks and General Baker not only added to the financial difficulties, but the policy of abandoning the Soudan, insisted upon by the British Government, alienated the governing class, and increased the hatred of the people toward the English. This policy had its grounds in the insolvent condition of Egypt. Besides, the English were not interested in having the Soudan remain under Egyptian authority, whereas they were eager to establish their prestige independently in that fertile region, rich in its own productive capacity, and in its trade-routes to inner Africa.

The accumulated deficits of the Treasury for the two years amounted to about £1,800,000, besides an estimated deficit for 1884 of £312,000. The Alexandria indemnities made £23,950,000 of the deficit, £300,000 of the indemnities having already been paid by the Treasury. The estimated cost of the evacuation of the Soudan made £1,000,000 more. The charge for the British army of occupation added a large annual sum to the expenses of the Egyptian Government. The British Government proposed to meet the deficit by a new loan, but was embarrassed by the Law of Liquidation, which sequestered the most productive revenues for the service of the existing debt. In the settlement of the debt, arranged by the International Commission in 1873, England, France, Germany, Austria, and Italy were parties. The receipts of the state railroads and telegraphs, and the port dues of Alexandria, were hypothecated for the payment of the interest on the Preference debt. To the service of the unified debt were assigned the tax receipts of Garibah, Menoufeh, Behareh, and Siout, four of the richest provinces of Egypt, subject to a charge of 7 per cent for collection. The ordinary or non-assigned revenues were also subject to fixed charges for the tribute to the Sultan, the interest on the Suez Canal shares purchased by the British Government, a subscription to the Daira revenues, and the amnesty for payment of the Moukabala claims, amounting altogether £1,050,000 per annum. The assigned revenues met the interest charges on the preference and unified stocks, and yielded besides an annual surplus, which was applied to the payment of the principal under the Law of Liquidation.

During the three years, 1881-88, nearly £1,000,000 of the debt was extinguished by the sinking fund. The estimated surplus for 1888 was £4,000,000. The total income from non-assigned revenues in 1881, the year before the war, was £4,454,000. The estimated ordinary revenue for 1884 was £4,738,000. The proposed loan of £8,000,000 sterling would provide for future expenditure £2,000,000 over the projected improvements in the irrigation canals, besides an equal amount for the evacuation of the southern provinces. According to the reports of Edgar Vincent, the English financial adviser of the Egyptian Government, the deficit of the Egyptian budget in 1888 was 850,000 Egyptian pounds, and in 1888 1,680,000 pounds, making, with the estimated deficit for 1884, 2,997,000 Egyptian pounds. The extraordinary expenditures the time of Arabi's rebellion amounted to 75,000 Egyptian pounds. The campaign of General Hicks in Kordofan cost about 500,000 Egyptian pounds. The expenditure for the British military occupation was 174,000 Egyptian pounds in 1882, 340,000 in 1883, and about 100,000 in 1884, not including about 100,000 Egyptian pounds a year for camp and barrack expenses, requisitions of produce, etc. The reform experiments in the gendarmerie, police, the tribunal inspectors of the administration, etc., entailed during the three years an expenditure of about 200,000 Egyptian pounds. The Suakin campaign cost about 150,000 General Gordon's mission 200,000 Egyptian pounds.

The salaries of the English officials added 70,000 or 80,000 Egyptian pounds a year to the cost of the administration.

Angle-French Agreement.—To extricate Egypt from the financial difficulties into which she had fallen under English control, the British Cabinet found it necessary to appeal to their interest for the sake of re-establish a stable order and restoring public credit
Nearly all the Egyptian bonds were the Continent of Europe, principally in Germany. The English Government desired the discussion to the question, but as this involved the question of British occupation, of sent methods of administration, of the questions of the order to be established, it was impossible to make arrangements on that subject. On the April Lord Granville sent a circular to all the great powers, and to the giving them to a conference in London whether there was not ground to be, the Law of Liquidation and consult upon modification that was advisable.

Germany, Russia, and Italy accepted the idea without reserve; France accepted the idea of a conference, but requested a change in the exchange of views. The first communication Egyptian was the publication of the English and French the refusal of M. Duplessis to recognize the abolition of the dual control. Between Jan. 4, 1888, a declaration that France resumed her action. As the result of negotiations between M. Waddington and Earl Granville, an understanding was reached which was put in two notes expressing the mutual intentions of the two governments with respect to Egypt. In M. Waddington's note, June 18, the French Republic, for the first time, formally renounced the concessions avowed any intention to seek to remove the dual control. It also promised to undertake a military intervention in the Nile, with the consent of Britain. In Lord Granville's note, bearing of June 18, the English Government promised to withdraw the troops from Egypt at the beginning of 1888, or in any case it be necessary for the security of Egypt to remain longer, to obtain the consent of the powers to a prolongation of the occupation. Great Britain agreed, to give the Commission of the Caisse de la Publicite, under the presidency of his majesty, a consultative voice in the division of the budget, to be modeled after the budget which the English Government could submit to the Conference; also, that of any items of expenditure undue prove an excess, except extra revenue expenditure required for the preserve of order in times of public peril. After the withdrawal of British troops the Caisse would exercise the additional power of re-estimation. The English Government promised to submit to the powers and to the Conference before the expiration of the notification, a scheme for the neutralization of Egypt, on the basis of the principles to Belgium, and proposals for the operation of the Suez Canal in control.

The conference.—The Egyptian conference met in London, June 28. Since the preliminary agreement with France covered the political questions, the Conference confined its attention to financial subjects. The scheme of financial relief proposed by Great Britain was worked out by a committee consisting of Sir E. Baring, Sir R. E. Welby, Sir C. Rivers Wilson, and Sir J. M. Carron. The Conference appointed a Commission of Financial Experts and did not meet again till their report was ready, July 22. The English and French members of the Commission differed as to the normal revenue, which M. Barrère and De Bignières maintained was underestimated by about £600,000.

The English proposals, presented by Mr. Childers, were as follows: 1. A loan of £5,000,000 sterling, to be raised on the guarantee of England, to have priority over all other loans, the annual charge for interest and sinking fund being fixed at 4½ per cent. 2. The interest on all existing loans, including the Suez Canal shares held by the British Government, to be reduced by ½ per cent. 3. All sinking funds to be suspended. 4. Any surplus of revenue to be divided into two parts, one to be reserved for the requirements of the following year, and the other to be applied to the redemption of the debt. 5. The cost of maintaining the army of
occupation to be fixed at a maximum of £2000,000 a year. The normal budget submitted by the English delegates estimated the receipts at 8,856,000 Egyptian pounds and the expenses of the Government at 4,687,000 Egyptian pounds. The cost of the army of occupation for the 3½ years being fixed at 298,000 Egyptian pounds a year, the reduction of 511,000 Egyptian pounds per annum in the service of the debt would leave the Treasury with a surplus of 135,000 Egyptian pounds. The English financiers framed their estimates with reference to an eventual reduction of the land-tax. The French delegation disputed the necessity of reducing the land revenue, believing that their pressure on the fellaheen would be remedied by equalizing the taxes on Usuli and kharaedj lands. The French experts estimated the revenue 2727,000 higher than the English. The yield of the land-tax was reckoned at 200,000 Egyptian pounds more, the railway receipts at 80,000 Egyptian pounds more, and the estimate of 369,000 Egyptian pounds for irrecoverable taxes was reduced to 72,000 pounds. These estimates were substantially approved by the German, Austrian, and Russian delegates. On the basis of this calculation the French Government opposed any reduction in the interest of the public debt as settled by the Law of Liquidation, but proposed that the sinking funds should be suspended, that the interest on the Suez Canal shares held by the British Government should be lowered, and that the sinking fund of the new loan should not go into operation until the other sinking funds were reestablished. The guarantee of the new loan France wished to make a collective one of all the powers. The English estimates of the administrative expenses were accepted, but an inquiry into the land revenue was asked for, to be undertaken by England and reported to the Conference in 1896. The English representatives made a counter-proposal to raise the new loan without interest at 10 per cent., paying in its scrip the Alexandria indemnities, and making its service the first charge on the Egyptian revenue; after which would come the administrative expenses, as calculated in the normal budget, the cost of the army of occupation, the working expenses of the railways, taken at 45 per cent. of the receipts, and the Munkahala claims, amounting to 150,000 Egyptian pounds per annum; and then, as the third charge, the interest on the existing debts. An alternative proposition was that England should guarantee the portion of the new loan not applied to the payment of the indemnities, and that the proposed reduction in the interest of the public debt should cease after ten years, when a new Conference should be called. M. Waddington demanded an inquiry as to the necessity of reducing the land-tax. A final proposition was made, July 29, to let the reduced interest on the old debts be a second charge on the revenue after the pre-preference loan for the payment of the indemnities, and then, after meeting the cost of administration, military occupation, etc., to pay the deducted 4 per cent. If there was a surplus, the arrangement to hold good for three years. After receiving instructions from his Government, M. Waddington on August 2 made a final counter-proposal that the new loan should be the first charge on the revenue; the full interest on the other loans the second; the sinking funds being suspended for three years; and the administrative expenses, as fixed by the English financiers, the third; that any surplus should go to the treasury, and any deficit be subject to the decision of the Commission of the Caisse, to consist of seven members, who could enact a reduction of interest by unanimous vote, the question to be referred to the great powers if they differed. The French Government persisted in its request for an inquiry into the land-revenue. Count Nigra, the Italian plenipotentiary, acting under instructions, supported the English propositions. Munzuru Pasha was prepared to support England, but protested that no modification in the finances, administration, or integrity of Egypt could take place without the consent of the Sublime Porte, and that in respect to any proposal for neutralization Turkey reserved liberty of action. Lord Granville pressed for a vote on the final English proposal, but the German, Austrian, and Russian representatives insisted on waiting for the decision of France. They held themselves neutral during the discussion, declining to pronounce any opinion, in view of the material differences of view between the powers most interested. Count Münster was instructed by his Government to request the Conference to take up the subject of sanitary precautions in Egypt and the Suez Canal, as affecting the public health of Europe; but Lord Granville, as President of the Conference, ruled the question out of order. Upon the submission of the French ultimatum, Lord Granville objected decidedly to paying in its scrip the Alexandria indemnities, and particularly to conferring upon the Public Debt Commission mastery over the Egyptian Government, such as would result from the proposed control of expenditures upon the unavoidable occurrence of a deficiency. He thereupon declared the Conference adjourned sine die, announcing that England regained her liberty of action. M. Waddington called for an adjournment to some future date, but Lord Granville pronounced the Conference at an end. The representative of France delivered a sharp protest against this abrupt termination. With the failure of the Conference the Anglo-French agreement lost its binding force.

Attitude of the Various Powers.—None of the powers was more anxious for the termination of the British protectorate than Turkey. The aim and desire of Turkish statesmen was to eliminate foreign influence from Egypt, and to establish in Cairo the direct authority of the Porte again, as far as was possible. As against exclusive English predominance a multiple co-
trol was preferred, as less derogatory to the
dignity and prejudicial to the interests of the
suverain power. The English occupation was
a heavy blow to the religious policy of the Sultan,
and compromised him in his quality of
Caliph, affecting his power far more seriously
than was measured by the extent to which his
merely political authority and interests in Egypt
were overridden.

The Porte addressed a circular to the great
powers on the 17th of June. It recalled the
acts of the rebellion of Arabi, the invitation of
the Porte to co-operate with England in
restoring order, but accompanied with condi-
tions and restrictions that rendered it unaccep-
table, and the intervention of England alone.

As the task was now so far completed that the
moral authority and prestige of the Sultan were
sufficient to insure tranquillity, it was, in the
opinion of the Porte, advisable that the Eng-
lisli army of occupation should be withdrawn.

If, however, the great powers considered that
an extraneous military force was required, such
a force could be supplied by the Sultan alone,
or in conjunction with England, France, Italy,
and Spain.

France, while upholding the rights of the
bondholders in defense of the interests of
French investors, aimed mainly at the exclusion
of the English from Egypt, and the establish-
ment of a joint European control. This would
repair the loss of dignity she sustained in per-
mitting England to undertake alone the Egy-
pian expedition, and to ont her from the dual
control. It would, moreover, give French in-
luence and French commercial interests a
hance to expand again, whereas the policy
assumed by the English was to discourage and
upplant French influence. Their efforts to
prove the traditional associations of Egypt
with the French were not successful. The
power that France exercised in the Egyptian
question was derived as much from her influ-
ence in Egypt as from her position in Europe.

proposing a multiple control, France not only
embraced in the interests of those who had
the English occupation left it in her
power to assert in Egypt, but derived a satis-
faction and various advantages in her other po-
litical relations from placing herself in accord
with Europe. On account of her possessions
in Africa, France was prepared to oppose any
extension of Turkish influence in Egypt.

For the same reason she regarded the movement
of the Mahdi as a menace to her interests, and
called for its suppression.

Germany had the same private financial in-
terests to defend as France, was glad to act in
accord with the republic as a step toward the
reconciliation of the French people, and re-

gerred with satisfaction any hindrance to an
alliance between England and France. She
savored, also, to curb the pretensions of Eng-
lnd to the empire of the seas, and to predom-
inace in the uncivilized parts of the earth,
where the German Government was preparing
to support the growing commerce of its people
with manifestations of naval power and the ac-
quisition of territorial control.

Germany also wished to sustain the policy
of Austria, which regarded the extension of
English interests in the eastern Mediterranean
as detrimental to Austrian commercial pros-
spects, and specially deprecated the annexation
of Egypt by England, fearing that it would
excite Russian aspirations in the direction of
Constantinople, which England would not
have the same motives to resist as before.

Russia also opposed the establishment of Brit-
ish dominion in Egypt, probably regarding it
as anticipating the final partition of the Turk-
ish Empire, in which Egypt was to go to Great
Britain as a compensation for the establish-
ment of Russia in Constantinople.

Italy was also an adherent of international
control. She voted with England at the Con-
ference in the hope of bringing about a com-
promise. She was actuated to some extent
also by her jealousy of French expansion in the
Mediterranean. Her neutral attitude is
explainable further by her hope of succeeding
England in the military occupation, by agree-
ment between England and the powers. After
the Conference, the Italian Government was
formally thanked for its support of the British
proposals, whereupon the German Government
extended a similar recognition for the Italian
vote in favor of its sanitary proposition.

The Suspension of the Law of Liquidation.—
When they failed to come to an agreement with the
powers at the Conference, the English found
themselves in Egypt in a position in which
they must either raise money on the credit of
the English Government or lay hands on the
assigned revenues, and proceed single-handed
to curtail the interest of the bondholders in the
face of the European contumacy to which they had
appealed. Either course was calculated to in-
volvethem more deeply in Egypt. Lord North-
brook was sent to confer with the Egyptian
Government. The Conservatives criticised the
non-committal character of his instructions,
which were couched in the phrase "to report
and advise," used also in General Gordon's
original instructions, and prophesied as meager
results from sending out a "Cabinet minister"

as had come from sending a "hero." They
were better pleased with the bold policy that
should be inaugurated under the direction of
Lord Northbrook in a Khedivial decree of
September 18, suspending for six weeks the
Law of Liquidation, and directing the mudirs
to turn into the Treasury, for the purpose of
meeting current expenses and the tribute to
Turkey, the revenues assigned to the Caisse de
la Dette Publique. The sums thus diverted
were applicable to purchases of unified stock
in the open market, to which purpose the sur-
plus remaining, after discharging the interest
on the privileged and unified debts, and paying
off a stated number of privileged bonds, drawn
by lot, was devoted by the liquidation act.
The Commissioners of the Caisse began actions in the international courts against the provincial governors, and, at a later period, against Nabar Pasha and the ministers. On September 25 the diplomatic representatives of Germany, Austria, France, and Russia, presented to Nabar Pasha an identical note protesting against the suspension of the sinking fund. Italy joined in the protest later. The Treasury showed at this time a budget deficit of £1,918,000, or, with the estimated deficit for October, of £231,000, and had no money to pay salaries and other present demands. Germany and Russia presented in December a claim to appoint delegates on the Public Debt Commission, in order to watch over the interests of their subjects. The suit of the Commission of the Caisse against the Government and against the ministers and the mudirs of the assigned provinces, and administrators of railways and customs, individually were decided in favor of the Caisse, condemning the Government to return the moneys illegally collected. In October the ministry ordered the payment of the assigned revenues to be made again to the debt commissioners.

**New English Financial Proposals.**—The financial scheme reported by Lord Northbrook upon his return from Egypt, proposed that England should guarantee the new loan and should pay the cost of the army of occupation out of the British Treasury, while the interest on the Egyptian debt would remain what it was. This was naturally rejected, as it was directly opposed to the views of the advanced Liberals. In November, with the assistance of Mr. Goschen, new financial proposals were worked out and were laid before the powers, Nov. 29. The essential features of the new proposals were the reduction of the interest of the unified debt by ½ per cent., and the conversion of the Daira loans into unified stock, making the total loan £35,000,000 at 8½ per cent.; the transfer to the privileged debt of the domain loan, and the addition of a new loan of £4,000,000, issued at 11½, for the payment of the Alexandria indemnities; making altogether £35,000,000 at 5 per cent.; the reduction of the interest on the Suez Canal shares held by England from 5 to 4½ per cent.; the issue of a loan of £5,000,000 at 8½ per cent., guaranteed by England, and secured on the domain and Daira estates, to be administered by Englishmen; the fixing of the cost of administration at £5,000,000, including the £120,000 for the army of occupation. The surplus of expenditure over and above this sum the English Government undertook to defray out of its own means, unless there should be a residue of revenue. In such case the surplus revenue would be divided prorate to make up the curtailed interest on the unified debt and the cost of military occupation beyond £120,000 a year. No answer whatever had been returned by the powers to the British proposals at the close of the year.

The Battle of Tokar.—After the annihilation of Gen. Hick's army near El Obeid, Nov. 2, 1885, Baker Pasha, organizer of the gendarmerie that was substituted for the disbanded Egyptian army, was sent by the Egyptian Government to Suakin, to uphold the authority of the Khedive on the coast, relieve the garrison at Tokar and Sinket, and keep the Sinket-Berber line of communication open. His army was composed of much the same material as Hicks Pasha's—Arabi's disbanded soldiers, who had no heart in the struggle, and were only ruled by fear. The influence of Osman Digna, the leader of the Nubian insurrection, now extended through all the region from the Nile to the sea. Supplies could be bought from some of the Arab communities, but for fidelity or active assistance none could be relied upon. Baker's army was not quite 4,000 strong, composed of the fellah and negro infantry, and Egyptian and Arab cavalry, a troop of Turkish cavalry, a small body of Italian volunteers, recruited from the Alexandria police force, a small number of Turkish foot-soldiers, and some native Sudanese, recruited in Massawar.

Baker Pasha made a reconnaissance the 1st of January in the direction of Tokar, and succeeded in routing a large body of rebels, slaying several hundred. He delayed his march for another week, then advanced with the main part of his command to Trinkitat in steamers, landing February 1. It was necessary to construct fortifications to protect the landing of the artillery and materials, which arrived and were brought upon dry land across a marshy shore, on the 3d. The fortified camp was about 24 miles south of the river. At dawn on the 4th they set out on the road to Tokar. The Egyptian cavalry headed the column, to support the line of skirmishers. The Turkish troopers brought up the rear, guarding the baggage-train. The artillery, consisting of Krupp and Gatling batteries, was near the front, between the two Egyptian regiments. Six or seven miles out the firing of scouts showed the presence of the enemy. Twice the column halted and fired bunks from the Krupp guns in the direction of the enemy. Suddenlly the Nubians appeared on the left flank. Baker ordered the Turkish cavlry to attack. While this movement was carried out, the enemy assaulted the front and left wing. Gen. Sartorius was ordered to form the infantry into a square, with the baggage and camels in the middle. Two companies of the Alexandria battalion refused to obey orders. The square was got into shape at length, but was of little avail. The soldiers fired without aiming. Many balls from the right side of the square, which was not attacked at all, struck the soldiers in the front. The Egyptian cavalry on the left, after firing off their carbines in all directions, ran away in mad fright. This started the panic in the infantry. The formation melted into a confused mob. At the spot where the two Alexandria companies stood paralyzed with fear, the Turks broke through the lines, driving the Egyptians
them. Soldiers, officers, cannoneers, and were crowded together in a helpless. The fellahs either cast themselves upon the ground, where they were sally speared, or threw down their Remand ran. Sartorius Pasha threatened his pistol at the fleeing soldiers, but at none of them to rally. The blacks, generally fight with spirit, were as worthless the fellaheen, excepting the Abyssinians in Massowah. The Turkish battalion sixty-six Italian police, with Dr. Leslie, Bey, Capt. Walker, and other English stood manfully by the guns until the man was slain. Gen. Baker was in front staff and a detachment of cavalry. He path with his saber through the throng, only to find the square broken up army rushing in disorderly flight to be intertrenched camp, hotly pursued by my. He hastened back with the force had with him and formed a line of horse in front of the camp to check suit of the Arabs, who, however, drew their own accord, probably through shells from British war-ships, though were none in the harbor. The beaten continued its fight through the morass harbor and crowded into the boats, would have sunk if the European officers not driven the men back with their re. In the night, what remained of the boat 1,500, were embarked and taken by Suakin. The losses were more than men, 3 Krupp and 2 Gatling guns, and vessels laden with supplies and munitions, cease with which Osman Digma destroyed my, armed with the deadliest modern a and trained and officered by Euroe were estimated at between 1,000 and They were armed only with heavy, headed spears and short, sharp swords. pack took place at the rising ground a Walls of Tob, about seven miles from it.

The Expedition against Osman Digma.—The action of Gen. Baker's army left the Egyptian bare of military resources for pression of the Sudan rebellion. The Government, to uphold English prestige suffered from the loss of two ar steamed and led by Englishmen, to avenge the English officers, to strengthen the power of the English officers, to strengthen the line of retreat, dispatched a force, de- ron the army of occupation in Egypt, returning from India, and marines serv the Red Sea and neighboring waters, to skin and operate against Osman Digma. Admiral Sir William Hewett, the naval commander-in-chief on the East Indian station, as Governor-General of the eastern coast, was placed under command of Maj.-Gen. Sir Gerald Gra staff-officer of the army of occupation.

The small army was not well equipped, lacking a sufficient number of camels to keep up a supply of water and provisions, and having no animals to draw the guns. The cavalry force was also deficient.

Osman Digma, the leader of the rebellion in the eastern Soudan, was the head of a once wealthy family of slave-dealers, which had been impoverished by the suppression of the slave-trade. He lived as a merchant in Berber, visiting various parts of the Soudan to buy merchandise. In July, 1888, he brought letters from the Mahdi to Egyptian officials and Arab sheiks in the Suakin district. He collected a force with which he attacked Sinkat in August, when he was repelled with the loss of eighty men. This nearly destroyed the influence he had gained over the Arab tribes, causing his following to fall away to about seventy-five, until, in October, he almost annihilated two companies under Maj. Mohammed Khill, in a battle between Suakin and Sinkat.

After this his prestige, enhanced afterward by four signal victories, increased until he was the master of all the resources of the country, and commander of a formidable army.

The Surrender of Tokar.—Before Gen. Graham could take the field, he learned that he was too late to relieve Tokar. The town was closely beset by 4,000 Arabs, who kept up a constant artillery and infantry fire. There was no wholesome drinking-water, provisions were poor and scanty, and the ammunition was running low. Fearing the fate of the inhabitants of Sinkat, the people begged the commandant to surrender, a course which only a part of the officers and soldiers opposed. On February 21, the governor, Macalvi, in accordance with terms agreed upon, delivered up the fort, and the soldiers laid down their arms, except a few who endeavored to escape the night before. The Egyptian soldiers were treated kindly, and many were willing to enter the service of the Mahdi.

The Battle of El Teb.—Before marching against Osman Digma, Gen. Graham sent a message offering terms of surrender, to which no an- swer was returned. At early morning, on the 29th of February, the troops were called. Under the guidance of Baker Pasha and Col. Burnaby they took the road that was most free from bushes. The way was kept clear of rebel sharpshooters by the cavalry. The route was strown with the corpses of Baker's Egyptian conscripts. After four hours' march they appeared unexpectedly to the enemy before Osman Digma's breastworks at Teb, a green oasis containing ten large springs of water. The Well of Teb was the place where the English consul, Moncrieff, when advancing with succor to Tokar, was deserted by his Egyptian band on Nov. 2, 1888, and where Baker's army fled in panic from the Soudanese. It is the only spot between Trinkitat and Tokar where water can be had, and therefore the most important position for an army resisting an advance from
the sea to hold. The side toward the sea is protected by rolling ground and hills, while near the springs the bush is thicker. The Egyptians who went over to Osman Digma at Tokar improved its defensibility by throwing up two earthworks and a crescent-shaped fort, mounted with four Krupp and three other cannon, captured at Tokar. In the bushes were deep trenches. The British marched in an oblong square, with the Gordon Highlanders in front, and the general and staff, camels, and stores in the middle. There were 5,000 infantry, 750 cavalry, 7 machine-guns, and 8 small field-pieces, a little over 4,000 men altogether. Osman Digma's force was about 6,000. The Soudanese opened the battle at 800 yards with three shells, two of which did some damage, followed by a rattling discharge of musketry. The English battle-square advanced without answering, passing around the north side of the fortifications. Then they opened fire with all their infantry and artillery, and when the Arab fire was quelled, rose from the ground and advanced upon the fortifications behind. The Soudanese contested the ground valiantly, but their swords and shields, and broad-headed spears, were useless against the hail of bullets. The earthwork was carried by storm. The rebels resisted the impetuous bayonet attack with desperation, yet could not stand against superior arms, strength, and skill. The Krupp guns were turned against them, and the British troops marched to the assault of the half-moon fort, close by the wells. It was rudely constructed of sand-bags and barrels. Here the Arabs collected for a final resistance. As the British advanced from the north, the breastworks were of no use, but the guns were directed against the foe. The Highlanders stormed the fort and drove the Arabs to retreat, abandoning their tents. The battle lasted three hours. The British losses were 39 killed, 2 missing, and 142 wounded. Of the Soudanese, 900 dead were found within the intrenchments.

The Battle of Tamaish.—On the 10th of March the British advanced to a place chosen for a fortified camp, eight miles from Suakin. Osman Digma was entrenched in a position six miles from there. On the 15th the British army moved upon the enemy in two broad squares arranged like steps. The front line was formed by half a battalion each from the York and Lancaster regiments, and the Black Watch Highlanders. On the left wing was a Gatling battery, served by marines, and in the center a nine-pound gun. The second square, formed of the first brigade, had a camel battery. Detachments of the enemy soon appeared, and then drew back before the fire of the advancing column. In spite of all warnings, the soldiers shot away their ammunition so freely that they were enveloped in a blind cloud of smoke, which the Arabs utilized for an attack. Descending on all-fours under the mouths of the belching cannon and through the rain of bullets, they sprang into the midst of the front ranks, and with their keen-edged swords wrought such carnage among the Englishmen, who were no match for them in hand-to-hand combat, broke and fell back in disorder. The marines were cut off, and after a brave resistance fled, leaving the Gatlings in the hands of the Arabs and breaking up the brigade completely. The Soudanese with a wild yell pursued their advantage, but their rush was stopped for a few minutes by a flank attack of the cavalry. This gave the British just time enough to form in ranks again. In an instant the Arabs were upon them, but could not now break through the line of steel. The square pressed on, fighting step by step, and after two hours of fierce combat, recaptured the machine-guns. The second square, about a quarter of a mile removed, had likewise to withstand a furious assault. The Arabs threw themselves with fearless impetuosity against the right flank, yet without forcing back the troops personally commanded by Gen. Graham. The marines shot with admirable coolness, dealing death to all that came within sixty yards. The brigade advanced steadily, marking their road with hundreds of dark-hued corpses. At length they fell in with the Arabs engaged with the second brigade, and by a murderous flanking fire put them to flight. Wherever a band appeared on an eminence, before they had time to attack they were dislodged by sharp-shooters. The rebels began to gather in force on a hill across a deep valley, but were driven away by a steady fire. Before the village of Tamani and the camp of Osman Digma, the Arabs made a final stand. Their resistance was soon broken, and the camp and the three neighboring villages were in the hands of the English. They found bags of money, Korans and talismans, booty of every kind, large stores of grain, and the banner of Osman Digma, as well as that of the unfortunate Tewik Pasha. The troops burned the villages, rested by the springs of Tamanish, and then returned to their camp, which they left immediately afterward to return to Suakin.

The Situation at Suakin.—Gen. Graham's Suakin campaign ended with the slaughter of 4,000 or 5,000 Arabs, and the loss of a fifth of his own army, leading to no practical result except the complication of Gen. Gordon's task of pacifying the Soudan. The English ministry would not authorize an advance to Berber, which, in fact, could not have been prepared for before autumn, on account of the heat and lack of water. The English attempted to buy the adherence of the Arab tribes, and thus accomplish their plan of opening communications with Berber. The Hadendowas, however, refused their offers of money. The British forces sailed away, leaving the situation as they had found it. Osman Digma was soon able to take the field again. In April he approached Suakin with a large army. British corvettes were sent to keep off an attack, and
ally the consternation of the inhabitants, while an Egyptian regiment arrived to man the fortifications. During the summer the Arabs hovered around the town, picking off the Egyptian sentries with their rifles. A company of English engineers was sent later, with a quantity of rails and rolling-stock. The plan of building a railroad to Berber could have been accomplished in a short time and at a slight expense. It was abandoned for the political reason that it would entail the preservation of Egyptian rule in the Soudan. Osman Digna raised the siege of Suakin in September to raise the tribes that were hostile to the Mahdi. When the Mahdi descended upon Khartoum, he returned to the siege. A force of marines was landed about the 1st of December. They constructed zaribs, or fortified camps, in the vicinity of the town. The Arabs kept up nightly skirmishes, and the English and Egyptians ventured on cavalry forays, but the rebels were masters of the surrounding country, while the town, under the protection of the ships, was safe from attack.

Treaty with Abyasinia.—At the time when Gordon entered upon his mission, Admiral Hewett was sent on an expedition to Abyssinia with power to secure, by the cession of Egyptian territory, the aid of King John in the removal of the garrisons in the districts near his territory. The treaty concluded with that savage Christian potentate, to which the Khedive unwillingly agreed under English pressure, ceded to him the district of Bogos, and gave him free access to the port of Massowah. King John engaged to send forces to relieve the garrisons at Kassala, Gelahat, Gedari, and Girah, and to facilitate their withdrawal. He promised also to sign a slave-trade treaty with Great Britain.

Massowah and Kassala.—The garrison at Kassala, though reduced to extremities in the early part of the year, was able, later, to obtain provisions. When the Mahdi made a general advance in the summer, the town was again closely invested. The Abyssinian King was not able, if he was willing, to dispose of a relieving force, though he now promised anew to bring succor. The port of Massowah was held by an English naval force. Mason Bay was appointed governor. The English forces afterward retired from Massowah without attempting to relieve Kassala.

The Berber Affair.—One of the annexed provinces of Egypt the English betrayed the intention of taking into their immediate possession. Berbera and the other Egyptian settlements on the Somali coast are remote from the Soudan and beyond the influence of the Mahdi. Berbera, because it was improved by Jamali Pasha, was the site of an annual market, where 100,000 people congregated, and where products of Central Africa to the value of $3,000,000 were exchanged for European wares and products of India, Persia, and Arabia. At other times of the year it was a naked strand. Jamali laid out a town, with water-supply, warehouses, and a harbor, surrounded now with blooming gardens, and containing about 10,000 inhabitants. With Berbera, the whole Somali coast, and the rich inland province of Harrar, which contains, besides the nomads, a population of over 2,000,000 souls, would pass into the possession of Great Britain. The rule of the Egyptians was welcomed in these districts, and proved beneficial, for it freed the industrious agricultural and mercantile population, to a great extent, from the blackmail of the wandering tribes. Nevertheless, an English official appeared at Berbera, with three vessels of war, and announced that her British Majesty had determined to take the people under her protection, and release them from the tyranny of the Egyptian administration. He was provided with a petition to that effect, signed by three sheiks. He informed the governor that he was clothed with authority to take over the government and administration in the name of the Queen. The governor refused to acknowledge any command that did not proceed from the Khedive, asked the English officer if he was authorized to take forcible possession of the place while Egypt and England were in a state of peace, and offered, since the British Government could be so easily convinced by petitions, to obtain the signatures of the same three sheiks, and as many more as were wanted, to a declaration of contrary purport. The people of the town assembled when they heard of the purpose of the English visitors, and manifested their indignation in a manner that caused the Englishmen hastily to take their departure. The possession of Berbera and the dependent districts would greatly strengthen the military position of England on the Red Sea, because Aden, which lies immediately opposite, draws all its supplies of food from Berbera. The commercial advantages are not less striking. The commercial products of Harrar are valuable. The climate is milder than that of any other region in this part of Africa. The trade with equatorial Africa through this avenue is already important. Lord Edward Fitzmaurice declared in Parliament that England must acquire Berbera, and said that the British Government had never recognized the sovereignty of the Sultan over this point, forgetting a treaty made with Egypt, September 7, 1877, in which the right of Egypt to the Somali coast was acknowledged. The object of that treaty was to prevent France from establishing one or two settlements on the coast. After the Berbera incident, England obtained a slight footing on the Somali coast at Zeila by sending 300 soldiers to re-enforce the Egyptian garrison.

Military Preparations in Upper Egypt.—The "natural frontier" that the British Government proposed for Egypt was guarded only during the first half of the year by a body of 1,500 Bedouin Arabs, recruited by Major Kitchener and Rundle from the Arabish tribe. It was hoped at one time that Major Kitchener could
organize an expedition from this material for the relief of Gen. Gordon. It soon became apparent that the only use of paying heavy subsidies to these people was to deter them from open hostilities and depredations. A force of Turks and Albanians was recruited in Levantine ports to supply their place. They proved as useless, and were immediately sent back. Major Stuart Wortley recruited 800 Bedouins from the Tunisian tribe of the Gowast. As soon as English troops began to move up the Nile, they also were disbanded. About 1,000 Egyptian soldiers were posted at Assouan and 300 at Wady Halfa in the summer. The English posted 700 men of the army of occupation above Assiut in the spring, but their presence was resented by the people, and proved rather a source of danger than of protection. English engineer officers were sent to Wady Halfa, who made some progress in the defensive works before the arrival of Lord Wolseley’s relief expedition. The English Government, in defining the “natural frontier” at Wady Halfa, assumed that an invading army from the Soudan is restricted to the river route.

Reinforcements.—When the folly of paying money for military service to Bedouins, who would go over to the enemy in the first engagement, became apparent, a force of Turks was hastily recruited in the ports of the Archipelago. When they arrived in Upper Egypt, they told the inhabitants that they would not fight the Arabs, as they were recruited for internal police service. A troop of 900, organized under English officers at Assiut, when ordered to embark for Assouan, mutinied, maltreated Turkish officers who were sent to restore discipline, and attempted to seize the store of arms and ammunition. Forty of them escaped, but were taken after a desperate fight by English soldiers. The whole force was finally sent back to Cairo.

The Fall of Berber.—In April came an appeal from the sheikhs of the tribes of Berber to the central Government at Cairo, begging for immediate relief, and commenting bitterly on the course of England in encouraging the people to resistance and then leaving them to certain destruction. Soon after came a dispatch from the mudir, Hussejn Pasha Khalifa, saying that if the troops in Assouan were ordered to Berber he could hold out until relief could be sent. It was one of a long series of dispatches in which he described the precarious condition of the town, and begged for re-enforcements. At this time the nomad tribes had already declared for the Mahdi, and his emissaries were rapidly winning over the rest of the population. The garrison of the town was not trustworthy. It numbered 2,800, of whom 1,800 were Egyptian soldiers, with two steamers and one gun. The Khedive called a council of state men, in one of which he offered advice, because troops and money were both wanting and, if a plan were resolved upon, it would be altered in character by the English mentors of the Khedive, and its execution entrusted to English hands, with a certainty of failure. The feeling of the people of the province of Said in Upper Egypt, above Assiut, was also discussed. They are a vigorous branch of thefellah race who had refused submission to Arabi, and who would have risen in insurrection against the English, but were dissuaded on the ground that it would prolong the occupation. They were now thrown into a state of excitement by the presence of two British battalions. Shortly afterward, Nubar Pasha sent an answer to the mudir’s repeated cries for help, to the effect that if he could not hold the town he should retire with his forces to Dongola. The expectation of relief from Suakin by a column of English troops had already been denied, and the refusal published to the rebels in an unciphered dispatch. The instructions from Cairo were calculated to drive into the arms of the Mahdi the commandant of the town, who belonged to an influential family of Arab chiefs of a tribe that had already declared for the Mahdi. Nevertheless, he held the place until the beginning of June, when an army of 50,000 Arabs surrounded the town and threw up earthworks. After five days of skirmishing, the Arabs, on June 2, stormed the town from the south under cover of a heavy fire from the opposite side. The mudir, who had been prevented from surrendering by his officers, deserted to the enemy with a part of the garrison. The rest of the troops fought bravely, and were massacred after the surrender, with most of the Christian inhabitants.

The Capture of Shendi by the Arabs.—About two months before the reduction of Berber the garrison of Shendi, being short of provisions, was obliged to give in. Some 300 persons attempted to escape by way of the Nile, but fell into the hands of the enemy and were all killed.

The Defense of Dongola.—After the capture of Shendi by the rebels, the advance upon Dongola was easy. The governor was suspected of holding a treasonable correspondence with the Mahdi through the family of the latter, which lived in the neighborhood. He resorted to the ruse of pretending to embrace the cause of the False Prophet, and induced the Christiansto go through the form of adopting Mohammedanism. He sent dispatch after dispatch, begging for re-enforcements, and particularly for arms and ammunition. In May he was instructed to evacuate the town, but refused to obey orders. The Egyptian Government at length sent him rifles and cannon. In the latter part of May and in June he gained various victories over the revolted tribes of the district. His force consisted of 900 infantry and 600 Bash-sh Bazouks. When the population south of Debeeb rose they invested that part of the town. The mudir went with a part of his forces to defend the fortress and pacify that part of his district. On June 29 the Arabs,
said to be 18,000 strong, under the Emir Ahmed el Hoda, attacked the fort, which was held by 500 Bashir-Bazouks. They tried for seventeen hours to storm the position in the face of a rifle and mitrailleuse fire, and then retreated, leaving, it was reported, 3,000 dead. The rebel sheik retired to the Ambukol district, where he gathered his forces in a fortified camp. The mudir marched against this position with two battalions of Bashir-Bazouks, two companies of infantry, two mountain guns, and 4,000 volunteers from the province. A battle was fought in which the Mahdi's emir was beaten and driven out of the province into the Berber district. Afterward a fresh Arab army entered the province, to establish a new emir appointed by the Mahdi. The mudir set out from Debbiah in boats against the rebel force, which had possession of Ambukol, and was encamped outside of Corti. The Egyptian force was about 400, supported by a small gun on a steamer. Ambukol was shelled and taken. The Arabs advanced in a long line and gave battle on an open plain. A part of them broke and fled when the fight began, leaving about 700 to contest the field. Some 150 soldiers of the Mahdi, from Kordofan, fought to the death. About 200 were slain on the field and many more in the retreat. Among the killed were the Arab commander, the Sheik Ahmed el Hedday, the newly appointed Emir of Dongola, and others appointed to Assouan, Cairo, Tripoli, and other places. The mudir pursued the enemy as far as Assal, and then returned to Ambukol. After this battle, which took place September 8, the Mahdi remitted his efforts to gain the province of Dongola, and stir up revolt in Upper Egypt.

General Gordon's Mission to the Sudan.—In January, while about concluding arrangements with the King of the Belgians to take command, in association with H. M. Stanley, of the establishments of the African Association in the Congo valley, Gen. C. G. Gordon, formerly Governor-General of the Soudan (see sketch in "Annual Cyclopedia" for 1888, page 391), received a summons from the British ministry. After a conference with members of the Cabinet, he departed for Khartoum. He was first commissioned to report and advise from Suakin on the best means of evacuating the Soudan, etc. The plan was altered at the suggestion of Sir E. Baring. He had an audience with the Khedive January 26, and was appointed Vali of the Soudan. He had himself suggested that it would strengthen his influence to be nominated Governor-General. He took the route up the Nile, and across the Nubian Desert to Berber, accompanied only by Lieut.-Col. Stewart and six native followers, carrying with him treasure to the amount of £45,000 sterling. The instructions received by Gen. Gordon from the British Government were to effect the withdrawal of the Egyptian garrisons and officials, and of the foreign population of the Soudan, by pacific means, and to take the most effective measures for establishing an organized government in the different provinces, for the maintenance of order and the suppression of revolt. When he arrived at Khartoum, February 18, he was received with joy by the population, who were in a state of consternation, being surrounded by hostile tribes, and in dread of the threatened advance of the Mahdi. Gen. Gordon found that the insurrectionary movement was more general, and the state of feeling in the Soudan graver than he expected. He issued proclamations assuring the people that they should be freed from the tyranny and exactions of the Egyptian officials. He proclaimed the abrogation of certain heavy taxes. One of his earliest proclamations announced that no measures would be taken to interfere with the slave-trade or slavery. He soon became convinced that he could not gain the confidence of the population of the Soudan. He accordingly sent a dispatch to the English Government, asking that his old enemy, Zebeh Pasha, be sent to him as a cosigner with the appointment of Governor of Khartoum. The proclamation regarding the slave-trade, and the request that its former champion in the Soudan should be called in to aid in establishing a new system of government, provoked contemptuous comments in the Continental press, and a protest from the French Government, and in England aroused such displeasure among the ranks of the Liberals that, had the wish of Gordon been fulfilled, the Government would have been overturned by a vote of censure. This was the consideration that deterred them from adopting the advice of Sir Evelyn Baring, and sending Zebeh to Khartoum. When he heard of the operations undertaken by Gen. Graham, Gordon expostulated with the Government, advising that a proclamation be issued at Suakin, desiring the chiefs of the insurgent tribes to repair to Khartoum and learn from him the plans for delivering the Soudan from oppression. When, against his advice, the Government persisted in military action, after Sinkat and Tokur had already fallen, he believed, as did every one in the Soudan, that British troops would press through to his support, and the relief of the ten beleaguered garrisons in the Soudan. His instructions were to effect a restoration of the petty Sultans who governed the country before Mehemet Ali's conquest, and bring about, if possible, a confederation of those Sultans. The ferment was so great that none of the hereditary rulers listened to his overtures. He was on the point of visiting the Mahdi, but was held back from this perilous adventure by a remonstrance from Sir Evelyn Baring. He proclaimed the Mahdi Sultan of Kordofan. Mohammed Ahmed, however, spurned the appointment, and sent a threatening reply, whereupon Gordon refused to accept the nomination. Hemmed in at Khartoum, and unable to effect any political combination, he sent word that he must resort to
warlike action since peaceful means had failed. The defeat of Osman Digma, and the expectation that an English army was coming, damped the aggressive spirit of the tribes in this part of the Soudan. British inaction now emboldened them. Early in March Gordon was effectually besieged and driven to defensive operations. The rebels prevented any of the dispatches of the Government from reaching him, though he was able to send messages. These bore mostly a complaining and indignant tone. He urged that a simple military demonstration, a cavalry troop rushed through to Berber, or the advance of two hundred English soldiers to Wady Halfa, would suffice to establish his authority and enable him to extricate the garrisons and leave a settled government at Khartoum. When, after slighting all his suggestions with reference to a peaceful solution, the Government then desisted from its own aggressive policy, he concluded that he was deserted, and that the plan of evacuation and the establishment of a settled order in the Soudan, which he was commissioned to carry out, was given up. He wrote on the 16th of April that he would henceforth act for himself, leaving to the Government "the indubitable disgrace of sacrificing the garrisons, with the certainty that you will eventually be forced to smash up the Mahdi under greater difficulties." He proposed at one time that, since he could accomplish nothing in the Soudan, he should make his way to the equatorial provinces, and organize governments there. Yet he felt bound to the soldiers and the people, whose loyalty he had called out, and whose security he had undertaken. In a dispatch of March 8, he said: "It may have been a mistake to send me, but, that having been done, I have no option but to see the evacuation through"; in another, "Even if I were men enough to escape, I have no power to do so," declaring in the same that he would never be taken alive. In one of his telegrams he appealed to the millionaires of America and England to subscribe £200,000 to pay for a force of 2,000 or 3,000 men, which the Sultan would lend, with which, he said, "we could not only settle our affairs here, but also smash the Mahdi." He was confident of being able to hold Khartoum, which was provisioned for six months, and of strengthening his military position with his steamer when the Nile rose, if only the troops and the town-folk remained loyal. He declared that the people would call in the Mahdi if he had not the Egyptian troops. An action of the 16th of March failed on account of the peril of two black officers, and the treacherous pashas were executed. They were the officers in command. Cutting down their own gunners, and opening a passage through the ranks, they enabled 80 Arab horsemen to rout 3,000 Bashi-Bazouks. The day before, the relief of Halfa was effected by a steamer and 1,900 men. He repeatedly urged the British authorities to send Zebehr, and to make a military diversion to Berber, or to send Turkish troops. After the 8th of April the town was so closely invested that no more dispatches could be sent out. On the 10th of May the Governor of Dongola reported that the defenders satyed on the White Nile in a steamer, and that, when they landed to attack the rebels in the wooden sheds they had erected, the latter fled out of gunshot range. A letter dated June 11 came through from Gordon, in which he reported that rebels surrounded him, but said that he could destroy them on the rising of the Nile. A few days later the Mudir of Dongola received from him a letter saying that Khartoum and Sennar were in a good state of defense, and asking what re-enforcements were coming.

For seven months the town was closely besieged. At the beginning of the siege 8,000 to 10,000 of the inhabitants left the town. General Gordon surrounded his lines with all kinds of obstacles, the most effective of which were three lines of land torpedoes, which inflicted terrible losses on the Soudanese in attacks made on the 16th of April and four succeeding days, and the 6th and 7th of May. On May 7th they were shelled out of their principal position, in a village opposite, but captured some of the outworks in the night, and held them three days. During May and June Sati Bey made expeditions in the armor-plated steamers on the White and Blue Niles, capturing cattle and grain. On the 10th of July that officer was killed in an attack on the village of Gatarneb, when his 200 Egyptian soldiers fled before five Arab spearmen! On July 29th the steamers captured forts on the Blue Nile. Gordon's loss in killed during five months was near 700. From March 17 to the end of July there was fighting every day. The falling were worthless, except on the steamers or behind ramparts. The black soldiers were valiant fighters. On the 28th of July Mahomet Ali Pasha led them against the rebel force established on the Blue Nile and put it to flight, killing a large number and capturing arms and ammunition. Besides the armored steamers, barges with torrets were used in the excursions. One of the steamers was captured from Saleh Bey by the Soudanese. General Gordon issued rations to the poor in Khartoum. He emitted paper money for purchases of supplies and the pay of the soldiers, and it passed current among the merchants. By the end of July prices had advanced 8,000 per cent.

The next dispatch received from General Gordon was dated August 26. He declared that he would not leave Khartoum until he had achieved the extirpation of all the garrisons but would try and persuade all Europeans to leave, laid the blood of Egyptians who might be slain to the charge of the English Government, and announced that he would surrender the Soudan to the Sultan as soon as a Turkish army arrived. In the same dispatch he announced the departure of an expedition to
and destroy Berber, and the intend-
y of Colonels Stewart and the Eng-
lish, Mr. Green, to report to the En-
semble all that had occurred, and
their opinions on the situation and the
measures. The capture of Berber
cause undertaken for the purpose
the river route and enabling them
d in a steamer to Dongola. With
ners and four nuggars Berber was
ad the rebel fire silenced, enabling
the fort in safety. At Abu Hamed
was sent back to Khartoum. Colonel
and the English and French consuls
ed with a large party of refugees
er and two nuggars. Overtaken by
, they cut loose the boats. Near
a cataract the steamer was wrecked.
The whole party, except two na-
melled by the Arabs after reaching
sheikhs offered them hospitality, and
eriously massacred them.

In an answer to some dispatch from
ng why he did not retire from Khar-
July 31, “I stay at Khartoum be-
Arabs have shut us up and will not
declaring: “I repeat, I have no wish
this country. My sole desire is to
prize of the Government in order
garrisons, and to put some ephemeral
it in position in order to get away.”
ng was critical at this time, for food
ng short, and the soldiers were evi-
dent. In the dispatch of August
ad that £300,000 be sent immediately
ould give them more satisfactory
he paper notes. The remainder of
re that Gordon was to take with
ve Soudan, £250,000 in all, was sent
as to the other, which fell into
of the enemy. His situation, through
cesses and the capture of provi-
med to improve after the depart-
ated companies. The rebels soon
third steamers and eighteen nung-
and and captured Shendi and Me-
erber and Djalleyen were also taken,
be was detailed to occupy Berber
command of Khalil Mouou Pasha,
was afterward burned. During the
mths of the siege, Gen. Gordon fa-
escape down the Nile of about
mostly invalids, and 2,000 officials,
etc., including their families and
. The refugees were received at
Giey Pasha, and looked after at
Col. Duncan.

a of the Mahdi.—The Mahdi threat-
ance upon Khartoum after the ar-
gordon. The time when he could
ge body of troops soon passed by,
could not take them away from
in the growing season. He was
by formidable rebellions against his
Gordofan. The many wives that he
ook to increase his political importance
and social influence impaired his sacred renown.
He was scoffingly nicknamed the “bride-
groom.” He had to withstand a conflict with
the not numerous but still formidable people
of Takala, who never recognized his divine
mission. He put to death their former king
and their religious chief for that reason. The
people proclaimed the next heir king, and
swore revenge, while the Mahdi set out in the
spring to destroy the Takalese. The head
sheik of the Kabbabish, Saleh, was a more
powerful adversary. Saleh’s brother, the for-
mer sheik, was treacherously murdered by
Mohammed Ahmed out of jealousy of his
influence. This act turned against the Mahdi
the most numerous Arab tribe in the Soudan.
Saleh bound his right hand to his breast, vow-
ing that he would only loose it to strike off
the Mahdi’s head. Mohammed Ahmed made
an enemy also of the slave-dealer, Abd-el-Sa-
mat, who had in his service several thousand
brave soldiers, by demanding tribute from him
after promising him immunity from all con-
tributions. Gen. Gordon’s successes at high
Nile, and the abandonment of the siege by the
neighboring tribes, induced the Mahdi to send
troops to Khartoum. As soon as the harvest
was in, he moved the bulk of his available
army, reported to Zebeh Pasha in August as
100,000 strong, with the intention probably
of taking Khartoum and then meeting the
English army of relief. He left behind only
a small force under Mahmoud Abd-el-Kader,
in El Obeid. A rising of the Kabbabish Arabs
caused him to turn back, when he set out in
October. Before the 1st of November he in-
vested Khartoum with a large army. To his
demand for a surrender Gen. Gordon replied
that he would hold the place as long as
years. The neighboring position of Omdurman was
taken from Gordon after some fighting. Gen.
Gordon was said to have destroyed the greater
part of Khartoum, inclosing the remainder in
a fort with a high watch-tower, to be making
his own powder, and still sending out his
steamers on the Blue Nile as far as Sinnar.
The progress of the rebellion was not
achieved by the movement of military forces.
The Mahdi has no standing army, and makes
no assumption of temporal sovereignty. He
relies more on proclamations and missionaries
than upon the exhibition of power. At first
dervishes and emissaries appear singly in a
neighborhood. They preach the restoration
of Islam in its purity, promise the abolition of
illegal taxation, and unfold the object of the
movement, which is the expulsion of the for-
ign rulers. When the people have been
worked up by this means, a quantity of arms
are sent. Some Arab tribe is found ready to
begin overt action and form the nucleus of an
insurgent host. When the revolt is in full
progress a lieutenant of the Mahdi comes
with arms and ammunition, and develops an army
and a plan of action.
EgyPhy's Expedition.—The English min-
their course toward Gen. Gordon
led by the political and financial rea-
impelled them to force upon the Egyp-
ternment the policy of abandoning the
They were inclined at first to repudi-
envoy, on the ground that, in estab-
lility rule at Khartoum and under-
ary operations, he had exceeded his
ns, which directed him to use pacific-
ly. When they first called Gen. Gor-
consultation he expostulated against
ment of Khartoum as injurious to
commerce, and to the anti-slavery
they assumed that he was now aiming
oration of Egyptian authority in the
or that that would be the result of
useful defense of Khartoum. They
ve been glad for him to retreat, but
le to leave to their fate the 60,000
hom he was sent to rescue. Every
Government recognized the neces-
sordon's defensive operations, and the
situation. His defense of Kar-
plied with the belief that he was
the military power of England, was
service in arresting the tide of rebel-
threatened to sweep into Egypt.
marm was nevertheless averse to an
for his relief, because if English
 treasure were spent in the Soudan
y of abandoning the country might
be given up, and the English protec-
Egypt might be indefinitely prolonged.
ly shown regarding the fate of Gor-
ceted the Government to telling at-
the Opposition and wide-spread
ispleasure, not confined to the friends
ation. At length Mr. Gladstone ac-
red an obligation to look after the
Gen. Gordon, and of those who had
greater danger by attaching them-
while declaring any responsi-
them in the Sonoda, on the Sony
intention to resist the rebellion of
which he described as the move-
people rightly struggling to be
April 20 a dispatch was forwarded
Gordon by a variety of channels, in
was desired to advise as to the time,
d strength of a relief expedition. Not-
an answer before the adjournment.
Mr. Gladstone asked, August 5, a
of credit of £300,000 in approval of
ention in the autumn. A relief expedi-
arranged the same month on plans
by Lord Wolseley. Although all an-
on Egyptian topography pronounced
Berber route the quickest and eas-
tartoum, the Government would sanc-
but the Nile route, as most in har-
th their purpose to confine their op-
the rescue of Gen. Gordon and those
with him. Gen. Wolseley suggested
its for river transport beyond the city
uch as he had employed in his Red
river expedition in Canada. As Gen. Ste-
phenson, commanding the army of occupation,
jected to this scheme, Lord Wolseley was
asked to take command of the expedition him-
self, and decided on an expeditionary force
of 10,000 men as sufficient for his purpose.
He arrived in Egypt September 9. The small
boats were built in England and Egypt, and a
body of 800 Canadian boatmen and 300 Kroo-
men from the west coast of Africa engaged.
In his letter of instructions, dated October 8,
the object of the expedition was stated to be
to bring Gen. Gordon and Col. Stewart away
from Khartoum. Unless it was necessary for
him to penetrate to Khartoum for this purpose,
he was not to advance beyond Dongola. That
was the sole definite object, though with re-
gard to leaving an organized government be-
hind, Gen. Wolseley was instructed to enter
into treaty with the local chiefs, and to promis-
se them liberal subsidies from the Egyptian
Government if they would engage to preserve
order, and keep down the slave-trade between
Wady Halfa and Khartoum. He was prohib-
ited from advancing beyond Khartoum for any
purpose, even for the relief of the garrison at
Sennar, which was within easy access on the
Nile. The boats, 900 in number, were light
enough to be carried around the rapids, and
designed to convey each ten soldiers with food-
supplies for 100 days. Stern-paddle steamers,
made in sections, were ordered for the transport
of stores. It would not be possible at high
Nile to draw steamers of not over five feet
draft over the cataracts. One steamer, the
Nasiri-Kheir, was got through with great diffi-
culty in the beginning of September. It was
high water about the middle of August. Be-
fore the transports, commissariat stores, etc.,
were prepared in Lord Wolseley's thorough
manner, the Nile had fallen so low that the ste-
rate arrangements for river-transport were al-
most useless. The general-in-chief arrived at
the second cataract October 5. The passage
up the river from Sarras, where the Canadian
double-bowed whale-boats were put into the
water, and Dongola, was slow and toilsome,
Nile nuggars were found as useless at least as
the small boats. On the 20th of November,
with 16,000 British troops in Egypt, there
were
only 8,000 south of Wady Halfa, of whom about
1,000 had reached Dongola. By December 10
there were 10,000 south of Korosko; on the 12th
Lord Wolseley joined the advance body
under Brig.-Gen. Sir Herbert Stewart at Korti.
Here Gen. Wolseley decided to abandon the
river route and cross the Bahiauia Desert to
Shendy, 180 miles. Gen. Stewart started with
1,000 men on canoes December 30. He occu-
pied the wells at Gadul, 97 miles from Korti,
January 8, and, leaving the guards intrenched
there, returned for re-enforcements and sup-
plies, setting out again on the 8th with a corps
of all arms. On the 10th of January Col. Burnaby left Korti with a supply of corn for Stewart's detachment. Another column was sent up the river to Abun Hamid, for the purpose of opening the route across the Nubian Desert from Korosko, or the Berber route from Sua-kin, for the transport of supplies and re-enforcements. Gen. Wolfeley's force at Korti when he divided it into three detachments was probably not over 5,000 men, as half of his army was still struggling against the eddies of the middle cataracta. On the 20th of January, 1868, came the disheartening intelligence that Gen. Stewart's column had sustained an attack of the enemy in greatly superior numbers at Abu Klea Wells, losing, out of about 1,500 men, 4 field officers, 5 line officers, and 65 rank and file killed, and 9 officers and 85 rank and file wounded. Among the killed was the dashing and experienced Col. Burnaby. Sir Herbert Stewart was wounded. The column stood its ground, formed in a single square, which was assaulted on all sides, and finally repelled the Arabs. A day or two later the intelligence came that Gen. Stewart had continued his advance and took up a position at Gubat, near Metenneh, opposite Shendy. He was supported here by a detachment sent by Gen. Gordon in his steamers. Col. Sir Charles Wilson embarked in a steamer for Khartoum. When he arrived there he was fired upon from the works, and soon convinced himself that the city had been taken by the Mahdi. On his return his steamer was wrecked below the Shublaka Cataract, and the party stranded on an island. From native accounts it appeared probable that the Mahdi introduced emissaries into the town who worked upon the religious feelings of the soldiers, that the enemy were admitted by one Faraz Pasha, the officer of the day, that 7,500 of the garrison deserted to the enemy, leaving 2,500 faithful to Gen. Gordon, and that these fought desperately until overwhelmed. Most accounts agreed that Gen. Gordon was killed.

EGYPT, EXPLORATIONS IN. (See Archi-ology.)

ELECTRICAL EXHIBITION AT PHILADELPHIA.

This exhibition, which was opened Sept. 3, 1894, under the auspices of the Franklin Institute in Philadelphia, illustrates the advancement of electrical science and its growing importance in the mind of the scientist, as well as its practical applications in domestic economy. Where these great buildings stand to-day, Benjamin Franklin, one hundred and thirty years ago, sailed his famous kite, and from the clouds drew the spark that kindled the New and the Old World with enthusiasm. After the inaugural ceremonies, the machinery was set in motion, the great central fountain spout- ed up, and the air was filled with the sound of innumerable electric bells and the peal of the electric organ. This exhibition can scarcely be called international, except by courtesy, for the foreign exhibits did not amount to 2 per cent., while the exhibits from New York State alone amounted to 80 per cent. Only ten years before, Prof. Tyndall, during one of his lectures, exhibited a curiosity in the form of an arc-lamp. The carbons were fed by clockwork; but, besides the fact that it required two or three days to set up and charge the battery, the mechanism was so clumsy that the lamp would fail once or twice during a lecture. At this exhibition, twelve engines of the combined capacity of 8,000 horse-power ran the dynamos that brilliantly illuminated the grounds and buildings, giving in the aggregate 1,500,000 candle-power. The two forms of lamps in practical use are the arc and the incandescent. The source of light in an arc-lamp is in the stream of incandescent particles carried by the electric current from the positive to the negative pole across an intercalary necessary to complete the circuit. The source of light in an incandescent lamp resides in some resisting medium, as carbon, introduced into the circuit. To prevent the destruction of this carbon, it must be enclosed in a vacuum.

Arc-Lamps.—The exterior illumination was made by arc-lamps of the Brush Company; the great lamp on the tower was said to be of 100,000 candle-power. There were exhibited arc-lamps manufactured by the Brush, the United States, Fuller, Maxim, Thompson-Houston, Gérard, Van Depoeil, and Western Companies. The difference between these various lamps is simply a difference of mechanism for moving the positive carbon-rod so as to keep the distance between the points of the carbon-rods constant, and consequently the arc of the same length and the light steady. All these lamps show much perfection in mechanism, and produce, as a rule, very steady light. There were arc-lamps mounted in numerous ways for various purposes; among them, a search-light, to be used on shipboard, attracted a great deal of attention. The arc was formed in the focus of a parabolic reflector, which could be turned around a vertical axis, its intense brilliancy giving great penetrating power in fog. Another arc-lamp was constructed as a head-light for locomotives, and furnished with a current supplied by a small dynamo in the cab, run by a rotary steam-engine. The mechanism of this lamp was remarkably perfect, as was necessary to give a steady light on a locomotive running at full speed. In the department of arc-lighting, a lamp involving a new idea was exhibited; unlike the ordinary lamp, the negative carbon, which wears away by what is known as reflex action, is replaced by a point of iridium set in a wrought-iron rod and protected from the heat of the current. Iridium is practically infusible, even in the intense heat of the arc. A carbon is fed to this iridium point through a tube by two grooved rollers worked by magnets. This mechanism enables the lamp to burn in any position, which is an advance upon other lamps. Some specimens of zircon, which may be substituted for iridi-
his lamp, were exhibited. This min-
ond in large quantities in Henderson
C., where it was first brought to light,
A thought to be worthless. Since it has
ed the remarkable property of being in-
it can be used instead of the more ex-
metal, iridium.

omous lamp on the top of the tower
are that leaped three quarters of an
a carbon-rod being also three quarters
in diameter. Most of the arc-lamps
round the building were surrounded by
ground-glass globes, for the purpose of
f the light. The arc-lamps that illu-
the fountain were so arranged that
colored glass could be interposed, in
coloring the fountain and producing
saftful effects. The principal lighting
he building was also done by arc-lamps,
ging along each of the high arches
ng the roof. The illumination through-
building was as brilliant as sunlight.

ecent Lamps.—The little incandescent
,000 in number, which were strung
ere, were manufactured by Swan, Max-
ard, Edison, Weston, and Bernstein.
showed about 1,000, arranged spiral
nder twenty feet high, some surround-
hite and others by colored bulbs, mak-
test beautiful effect. To the casual
ey are all much alike, haying in com-
lament of carbon bent in various shaps
ed to leading wires, which are of
, as they pass through the glass bulb
loses the filament, in which a high
produced. The point in which the
cent lamps differ one from another is
material composing the filament, and in
. This little filament has many ene-
gine most formidable of which is called
r carriage; that is, the carbon-parti-
carried from the positive side of the
the negative, causing the filament to
d radially until it breaks, and the lamp
ed in. The Edison lamps and any con-
t incandescent lamps are valuable to
sition to their power of resisting this
r carriage. Edison, after a long se-
xperiments, decided in favor of a mate-
and, of all the hundreds of fibers that
, a certain species of bamboo found in
oved the best. The process by which
rs are carbonized differs with each pat-
Edison cuts the strips of his bamboo
les long by one eighth of an inch wide,
ety-fourth of an inch thick. This strip
in loop-shape around a mold. While
izing, he keeps it in place by weights
it to contract. Several of these loops
ed in a plumbago mold and exposed to
heat for about four hours; when taken
n carbon-loop is clamped to the leading
sealed in a glass bulb from which the
hausted. On the Swan lamp, used by
ah Company in the United States, or-
cotton-thread is employed, to which

solidity is given by plunging it into sulphuric
acid diluted with one third its volume of water.
This "parchmentizes" the cellulose of the
thread, making it homogeneous. The prepared
thread, bent into a horseshoe-shape with a spir-
al in the middle, is carbonized by placing it in
carbon-dust and raising to orange heat. The
lamp is completed by inclosing the loop in a
translucent glass globe in which a vacuum is
produced. This lamp gives sixteen to twen-
ty candle-power (an ordinary kerosene-burner
gives five to six candle-power). The electrici-
cal resistance of this lamp is about forty ohms,
while Edison's is 140.

Hiram S. Maxim's lamp has the general fea-
tures of those described above, except that the
 filament used is stamped from a flat sheet of
paper, in the shape of a letter M, and carbon-
ized between sheets of thin paper in iron molds,
and afterward treated to render it as homoge-
neous as possible, which is effected by heating
the filament to incandescence in a carbona-
ceous atmosphere. The gas is decomposed
by the heat of the incandescent filament, on
which the liberated carbon is deposited. The
thinnest parts become most heated and de-
compose the greatest amount of gas, and con-
sequently receive the heaviest deposit. This

ed build up the carbon evenly, which is
the great object in making the filament.

The incandescent lamps covered by the Wes-
ton patents were exhibited in great profusion
at the exposition. The carbon of these lamps
has a zigzag shape, and is made from cellulose
by a process not yet made public. The result-
ing material is, before carbonizing, a translu-
cent, elastic substance, and produces an exceed-
ingly strong, metallic-looking carbon, capable
of resisting very high temperatures for a long
period of time. The Weston Company also exhibited an
incandescent lamp of one hundred candle-
power. It did not differ from their regular lamp
in any particular, except that it was of a larger
size, the loop being about six inches long.

The Bernstein lamp also exhibited among the exhibits. The carbons of this lamp are tubular
and bent into the form of a loop. They are
made by carbonizing a finely woven cotton or
silk fabric. The Gérard lamp's filament con-
sisted of two fine carbon rods having the leading
wires cemented to one end of each rod.
The two other ends are cemented together.
This is burned in a vacuum and looks like the
letter V, when the lamp is hanging downward.
A miniature lamp for dental and surgical op-
cerations was exhibited. This is only half an
inch long, and has a carbon-loop of paper.

The currents used for incandescent lamps
are usually of lower electro-motive force than
are used in the arc-lamp. The lamps in all
systems are connected in multiple arc, and any
number can be burned on one circuit. About
twenty-four incandescent lamps were fed by
the Brush storage-battery. Each gave a steady,
soft light of about fourteen candle-power.

Dynamos.—Numerous dynamos were exhibi-
ed, embodying improvements in construction, in winding the armature, and in the arrange-
ment of the field-magnets, all covered by pat-
teus issued to Weston, Maxim, Edison, Houston-Thomson, Brush, Wallace, Van Depool,
Bernstein, Ball, and Daft. All have in com-
mon an armature whose foundation is wrought-iron, with coils wound parallel to the axis of ro-
tation, and mounted so as to be revolved in an intense magnetic field. As the copper wires, dur-
ing the revolution, cut the lines of magnetic force, an electric cur-
rent is produced.

Among the modern improvements exhibited in connection with this point was a regulator attached to the Houston-Thomson dynamo; the brushes that collect the current from the commutator are attached to a yoke pivoted on an axis; a lever from this yoke bears an armature at the end that faces near the pole of a large magnet, which is magnet-
ized by the current from the dyna-
mo. When the current is above the average, the magnets are strong enough to pull the brush-
es around the commutator, and away from the point where they would collect the largest amount of electricity, and this tends to bring the current back to the normal. When the current is less than the normal, the magnet is weaker, and the brushes ap-
proach the point on the commu-
tator where the maximum amount of current is given off. This regulator always tends to bring the current back to the normal, and is exceedingly sensitive. Judging from the lamps burning on that circuit, the current must be remark-
ably steady. The generating armature is globular, and the copper wires are wound in three coils around a great circle, intersecting each other with an angle of 38°. The ends of these coils are con-
ected to six commutator strips on which the movable brushes rest. The commutator revolves in a magnetic field produced be-
tween two cylinders, wound so that the two concave ends between which the globular ar-
mature revolves are the north and south poles. When the copper wire in the armature cuts the south pole, it produces there a negative current, and at the same time the wire on the other side of the armature is cutting the north pole and producing positive electricity. Instead of having one armature for both kinds of electricity, Ball’s unipolar machine had an armature for each kind of electricity, one rotat-
ing in a magnetic field of north polarity, and the other on the same shaft, rotating in a field of south polarity. Wallace’s exhibits were es-
pecially interesting from an historical point of view. His old machines, made in 1861, which were the first dynamos made in this country, have permanent magnets and a great clumsy armature. The evolution of the present dyna-
mo from that is only one of perfection in me-
chanical details; the principle underlying the machine has always been the same. Edison in his large dynamo replaces the copper wires with a strip of copper, which reduces the inter-
nal resistance, a very important factor in large plants. The dynamo is the most economical
ELECTRICAL EXHIBITION AT PHILADELPHIA.

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former of energy we have, being thirty times more efficient than the boiler, and nine times more efficient than the steam-engine.

Storage-Batteries. — The storage-batteries attracted a great deal of attention, principally because of the late improvements, which seemed to promise of practical use in the economy of storage of power. This, however, is not important.

A storage-battery gives only about 40% of the power put into it, and the lead of which the battery is built soon dissolves, and the battery becomes useless. The important of these batteries was one exhibited by the Brush Company. It consists of sixty-one cells, each of which is composed of six plates of cast-lead, the central one being oxygen plate, and those on either side hydrogen. The plates measure sixteen by sixteen, and the two outer ones are connected, and the middle plate is connected with the end plate of the next cell; so the hydrogen and oxygen plates alternate. This is known as "connecting in series." The action within the cell while storing electricity is chemical. It causes one atom of PbO, with which the positive or hydrogen plate is coated, to pass over to the negative lead plate, there producing PbO. This renders both plates alike. Other chemical actions take place; but this transference of the oxygen-atom from the peroxide to the lead is the essential action. This, however, occurs in the presence of sulphuric acid, which unites with the newly formed oxide of lead, producing the sulphate of lead in a white film, insoluble in the dilute acid. We have chemically the following changes: Pb + PbO becomes PbO + PbO, and then PbO + H2SO4 becomes PbSO4 + H2O. This is the chemical action that takes place when discharging; and when there is no trace of electricity flowing from the terminals the battery is in its original condition.

Several motors for sewing-machines were run by the batteries manufactured by the Brush Company, and a room in this exhibition was lighted very satisfactorily with currents supplied by these batteries.

Since the dynamo is a reversible machine—that is, instead of power being applied to the pulley to develop electricity, electricity may be sent through the armature to cause it to rotate and give out power—several motors were exhibited, varying from one hundredth of a horse-power up to six horse-power. Mr. Daft exhibited a motor with a Siemens armature. The speed of the armature's shaft was reduced by an endless screw working into a cog-wheel. On the shaft with this cog-wheel was mounted a pulley, and this ran the printing-press that printed the "Electrical World." One of the motors used for sewing-machines was invented by Mr. Diehls, of the Singer Company. The speed of revolution of the armature is here reduced by a new device. Instead of introducing resistance into the circuit, as with every other motor, the north and south poles of the electro-magnets that act on the armature are made to separate by a lever worked by the feet. This increases the distance between the poles and the armature, and consequently decreases the magnetic effect on the armature, the speed being proportional to this effect. The Cleveland motor is simply a small dynamo. On the same shaft with the armature is a grooved pulley, which is belted to the little wheel on a sewing-machine. This is started by pressing on a pedal. The harder you press, the faster the motor goes, for it is connected with a switch that cuts out resistance in the main current. It is stopped instantly by releasing the pedal. It is said that it can produce one half more work in a day when the electric motor is substituted for foot-power.

Telephones.—The Bell telephone exhibit was historically very interesting. The original apparatus of Bell, when compared with that of Dolbear and Ries, showed a surprising way what is called the simultaneousness of inven-
tion. The rough experimental apparatus of
Bell looks absurdly clumsy when placed beside
that which experience has shown to be the
most convenient form. The different forms of
apparatus exhibited by Bell show a gradual
growth from the primitive conception of the
small dynamos, the armature of which is turned
by the hand. This replaces the battery for-
merly used, which requires frequent attention
and easily goes out of order.

The microphone is also exhibited in this sec-
tion. But the most interesting instrument to
be seen here is Prof. Bell’s radiophone. This
has been recently improved by the discovery
that selenium is not the only substance in which
electric resistance is changed when acted on by
an intermittent ray of light, but that other
substances, and some to a much greater degree,
are thus affected. The material that he found
gave the most marked variations was carbon.

An experimental demonstration of this quality
was given by means of an apparatus that tran-
lated the vibrations of an intermittent ray of
light into the corresponding sound-vibrations.

A plate of glass is covered with silver-foil, and
this divided into two parts by removing the
foil along a sinuous line running across the
plate, the whole being coated with a film of
damp lampblack. Each half of the foil is then con-
nected with one pole of a battery. In the cir-
cuit, at some convenient place, Mr. Bell insert-
ed one of his receiving telephones. This doc-
tored lampblack surface was exposed to an
intermittent ray of light. At the telephone
note could be distinctly heard corresponding in
pitch to the number of vibrations of the light
ray. A practical application of the principle
involved was effected by adding another step to
these already demonstrated. Instead of allow-
ing an ordinary ray of intermittent light to fall
upon the lampblack surface, a mirror is pivot-
ed with a rigid arm, which is placed in contact
with a diaphragm of a transmitting telephone
in such a way that every movement of the dia-

principle to the present commercial form. In
the same space with the Bell exhibit a switch-
board was shown, which is capable of connect-
ing any one of the 8,000 subscribers on that
board to any other one. Magneto call-bells,
exhibited by this same company, are simply
plung will cause the mirror to move, and consequently the ray of light to be intermittent upon the lampblack. Words spoken into the telephone are first translated into light vibrations, and these are retranslated into sound—a device that manifestly may be used as of in war times.

MIRRORS.—Numerous devices for detecting the burglar were exhibited, one of which was a matting to be placed under the carpet or on the floor, inside doors and windows. At night, when the electric current is switched on, a step upon the matting will cause the ringing of the electric bell. Great numbers of annunciators for hotels were also exhibited. An ingenious arrangement for indicating time was shown. The apparatus was meant to be used in telephone exchanges, and was arranged that every five minutes it would signal the correct time indicated by a clock in the central station, to every subscriber at that exchange.

Cables and Wires.—The cable and insulated wire exhibited by the Callender Company were especially fine. The new compound used by them seems in all respects to rival gutta percha, allowing them to produce cables of high insulation at a greatly reduced cost. The phosphor bronze wire, also to be seen in this exhibit, deserves notice, since it is coming rapidly into general use. Wires of this metal, besides having greater tensile strength, weigh about one eighth as much as iron wire of the same electrical resistance. This admits of great economy of poles, both in size and number.

The problem of underground conductors has been forced upon inventors suddenly, by the decision that within city limits wires must be buried. This problem is by no means simple, where the telegraph is concerned. It is not so hard to do this where speed may be sacrificed. The efficiency of the telephone is impaired when its wires lie near those of a working telegraph. It was found in one instance in France, when a telephone cable ran parallel with a telegraph cable for half a mile, separated at the nearest point by about 100 yards, that the telegraph message could be distinctly heard in the telephone receiver.

Synchronous Telegraphy.—This was one of the novel things at the exhibition, and attracted a great deal of attention. The claims for this invention were received with incredulity; but, as the exhibit shows, twenty-four instruments telegraphing at once through one wire, the fact must be accepted as proved. This result is effected by taking advantage of the fact that, for an appreciable though very short time, a piece of wrought-iron retains its magnetism after the current that has produced it stops flowing. In the helix around the wrought-iron core, and consequently it holds the armature for a moment. During this moment, a revolving contact has made and broken eleven other connections, and come back to the same line again, before the armature has been released.

This contact-wheel makes about thirty contacts a second with the same wire. The receiving is identical with the transmitting instrument, the wheels carrying the revolving contacts moving synchronously at both ends of the line. This movement is regulated by two tuning-forks of the same pitch, the wheels going through the same arc during each swing of the tuning-forks. Its effect is to make and break each
one of the twelve circuits in one thirtieth of a second, this time not 'being sufficient to allow the armature of each receiving instrument to be affected. This is the product of the inventive genius of P. B. Delany.

Electric Railway.—A crowd was always gathered about the electric railway, which was in full operation on a track about 400 feet long, between the main building and the annex. The line is too short to admit of a test for economy. It deserves attention from its novelty of design and easy management. The radical difference between this system and others now in practical working, in different parts of the world, is not such as to give the one at the electrical exhibition any economic advantage. It consists of a new method of conducting the electricity from the point of generation to the locomotor. In the system exhibited at the Electrical Exhibition, the conductor is composed of insulated tubes placed near to and parallel with each rail on which the locomotor runs. One of these tubes is connected with the positive and the other with the negative pole of the dynamo used as a generator. In a slot under the bottom of each tube, glides, as the locomotor advances, a contact-rod leading to the motor, and this connects it electrically with the generating dynamo. This arrangement, it is claimed, will give a nearly perfect contact in bad weather.

A switch and signal system, to be used on ordinary railroads, showed promise of practical value, though the invention possessed no new or peculiar electrical features. It was a combination of electrical annunciators and bells with a system of pneumatic tubes, working pistons in cylinders to close and open switches, and display signals. The mechanism is ingenious, but scarcely belongs to the department of electricity, though a model railroad, showing the working of this system, occupied much room in the exhibition.

Miscellaneous.—There were many other exhibits, which cannot be here mentioned in detail, for want of space. And because they are closely related, they do not actually belong to electrical science and were merely auxiliary, or else did not differ radically from instruments already familiar—such as a mercury vacuum-pump exhibited by Weston; Brackett's dynamometer; Ayerton and Perry's volt.- Am.- and ohm-meters; Elliott's well-known electrical instruments; a new form of magnetometer; Mangin's projector for throwing a beam of light from an electric lamp in any desired direction; new gas-engines; balanced locomotive to show the effect of cushioning the piston; and Siemens's regenerative gas-burner. Among the exhibits was a torpedo-boat about twelve feet long, which could be steered from the shore and made to reach any point not more than four miles distant. In shape the torpedo was like a cigar, sharp at both ends. It was steered by means of electro-magnets, so arranged as to throw the sudder either one way or the other as the current was reversed. In the back part of the torpedo were three conductors inclosed in one insulator and forming a small light cable four miles in length, wound upon a bobbin. This cable played out as the torpedo advanced. The propeller was revolved by an electric motor, which could also be managed from the shore; the current supplying the motor was furnished by batteries on shore. The torpedo is ballasted so as to be almost entirely submerged; a little guide—which by night is a dark-lantern facing toward shore, and by day a red buoy—alone appearing above water. At the forward end of the torpedo is the conical dynamite cartridge, the part containing the fulminate cap being forward. When this point strikes any obstruction, it explodes the dynamite.

There were exhibited, in a room adjacent to the large lecture-room, a great number of Patent-Office models of electrical apparatus. These were loaned by the Patent Commissioner, and formed a most valuable exhibit. A number of magneto-thermo panacesas were admitted to the exhibition, probably in consequence of a misnomer, since they could properly be classified under the head of "faith-cures" rather than of electrical phenomena, for to generate a current of electricity was wholly out of their province. The exhibition closed on Oct. 11, 1884: the daily average attendance was 5,407, and it was a financial success.

ELESSLER, FANNY, danseuse, was born in Vienna, June 23, 1810; died Nov. 27, 1884. She made her début in the ballet corps at the age of six, gave great promise, and was instructed by the celebrated Anmar. Her education was continued under the direction of Baron Frédéric de Gentz, and in 1827, with her sister Thérèse, who was two years her senior, she appeared on the stage at Naples. In 1830 they appeared on the railroad, where they met a most enthusiastic reception, and Fanny especially found a host of admirers and lovers among the wealthy and noble. The triumph was repeated in Vienna, and in 1834 the sisters made their first appearance in Paris, in a ballet adapted from Shakespeare's "Tempest" by Nourrit. Here the furore reached its height. Tagliati was then at the head of the profession, but the popular verdict was that Fanny Elssler surpassed her, especially in the Spanish dances. The most famous critics exhausted their powers of eulogy on the new danseuse, and a millionaire offered her his hand. M. Brissonat drew her portrait in these words: "An inimitable delicacy, grace, exact and ingenious discernment, agility, a conqueyry always active, always ardent, the art of fascination, a sensual intelligence reflected from the whole organization, in short, a delicious affectation—these are the characteristics of Fanny Elssler. Her person is in keeping with her talent. Her form is tall and slender, her features fine and animated, with a sprightly and alluring expression: her aspect mild and endearing, saying all without boldness. Her very defects attract one.
her frail appearance is, as it witness of the hidden fires in within. Fanny dances to and to charm. Taglioni as the dance of heaven; Slöder wins the love of mor the one is a sister of the the other is the most ador the daughters of earth.”

The sisters came to the States, where their fame spread them. Enthusiastic detached the horses and their carriage through the theatre was crowded after night, and like many European performers they a golden harvest in America. And they visited Russia, and danced again in Vienna, they bade farewell to the Thérése became the morwife of Prince Adalbert of in 1821, and died in 1878, as tall and powerful, was ly called “the majestic,” to a large extent Fanny’s xor. At the same time that er sister married, Fanny reth her large fortune to a near Hamburg, where she

most of the remainder of her life.

ENGINEERING. In consequence of the genexpression of all branches of industry, few orks were planned, either in this count abroad, during 1884, nor have any of enterprises begun years ago been to completion. But work is steadily in many quarters, carrying forward undertakings as the Panama Canal. The thing work has not been startled by at discoveries, though it has continued e good progress in the improvement of in methods and appliances, and in the effective use of materials. Concerning ter, the growing tendency in favor of r structural purposes may be particu noted. The metallurgist, the chemist, e engineer are working harmoniously successfully in defining the adaptability of material to specific purposes, in increasing stock of knowledge as to its character and the best methods of handling and r it. It is gradually but surely replac notably for bridge-work and in naval ears, a steady lowering of the price go in hand with greater uniformity and ity in quality.

Report of the Suez Canal.—The enlarge of the Suez Canal was definitely decided during 1884, after long-continued negot and a report by the International Coni Commission. Until now, only small could pass one another in motion, the near the banks being too small for larger. The latter have been forced to enter one of the “gates” provided at intervals, a system that greatly retarded navigation. The engineers of the canal have based their estimates of the needed width to secure uninterrupt sailing, upon the fact that the largest ship, the Austral, that has yet passed through the canal, has a forty-eight-foot beam and is 456 feet long. They assume that if vessels of such size are to pass one another in motion there should be a space equal to two clear beams between them, and an interval of thirty to thirty-five feet between their outer sides and the line of buoys. This means a channel about 300 feet broad at the bottom, which is consid included sufficient for the straight reach of the canal south of Port Said. For the curves and for the Suez end, where the tide of the Red Sea produces a current, an increased breadth of 262 feet is proposed, which would permit of a partial rectification of the curves. It is urged that such a width, giving a minimum channel of 115 feet for each vessel, instead of the seventy-foot width of course now insisted upon, would be ample, since the bed of the Clyde is only 220 feet broad, and still vessels pass one another in motion without serious trouble. By this enlargement of the canal, an increase in the speed to 64 knots an hour is believed to be readily attainable, and it has been estimated that the saving in the time taken to pass through the canal, when it is enlarged, will be about twenty-four hours. The cost of a channel twenty-seven feet deep has been estimated at £28,850,000, a sum that would be increased to £10,831,000 if the depth
is increased to thirty feet. During the past two years work has been progressing in the direction of widening the channel in the small lakes in the Kabetogama section, and some important work, to diminish the number of accidents by stranding, has been completed. The carrying out of the programme of these improvements will absorb the greater part of the year 1885.

The Forth Railway Bridge.—Work on the great Forth bridge, which was begun in January, 1885, by Messrs. Tancred, Arrol & Co., who took the contract for £1,900,000, has been thus far directed chiefly to the building of the three main piers—known respectively as the Fife pier, the Inch-Garfie pier, and the Queen's-ferry pier—upon each of which is to be built a huge cantilever stretching both ways. The total length of the bridge is about a mile and a half, including two 1,700-foot spans, two 675-foot spans, the shoreward halves of the outer cantilevers, fifteen 186-foot spans, and five 28-foot spans. The clear headway under the center of the bridge is 150 feet above high water. The Fife pier, which stands between high and low water mark, like the other main piers, comprises four columns carried down to the rock, of which three are completed, while the fourth is in progress. At the Inch-Garfie pier, which is partly founded upon a rocky island in mid-stream, one of the columns is complete and one is being built, while at the Queen's-ferry pier, which is at the edge of the deep channel, the work on the caissons is advancing. The latter are seventy feet in diameter at the bottom edge, have a double skin, and are stiffened with girders, which are subject to a heavy stress, owing to the fact that the range of the tide is fully twenty feet. These pneumatic caissons are provided with special facilities for landing material. In the case of one of the columns of the Queen's-ferry pier, the full depth to which the caisson is to be sunk is not less than ninety-six feet below high water. When in place, the caissons are filled with concrete up to low-water mark, above which cylindrical masonry piers, fifty-five feet in diameter at the bottom and thirty-six feet high, are carried up, forty-eight heavy steel bolts being provided to hold down the bed-plates and the superstructure of the main spans. The whole work is on a magnificent scale, and has thus far been carried out with much skill. It is expected that it will take five or six years more to complete the bridge.

One of the leading features in the design of the superstructure is the tubular struts of bitherto unequaled length, of which nearly six miles will be required in the completed bridge. Some of them are as much as twelve feet in diameter. As no machinery was in existence to deal with such work, a special plant was designed, which has been described by Andrew S. Bigger in a paper read before the Institution of Engineers and Shipbuilders of Scotland. It includes a heavy hydraulic press for bending the steel plates when hot, which as much as a ton and a half apiece, and pdf and drilling machines of special size.

The Isthmus of Corinth Canal.—According a recent report to the Isthmus of Corinth Company, by M. Bazaine, 1,300,000 cubic trees of earth had been removed at the close 1884, leaving about 8,000,000 cubic metres to be dealt with. There has been delay in building the workmen's houses, the erec

The Teanapanec Ship-Railroad.—The Isthmus of Tehuantepec lies immediately north of Isthmus of Yucatan, is the narrowest part of Mexico, and furnishes the most northern of the three routes proposed for joining the Pacific and Atlantic Oceans—the Panama, Nicaragua, and Tehuantepec. The latter secedes the advantage of affording the most direct course from China, Japan, Australia, New Zealand, California, and the whole Pacific of North America, to New York and Europe.

The following table of distances will show lengths of a few of the principal main courses by different routes:

<table>
<thead>
<tr>
<th>Route</th>
<th>Total Distance</th>
<th>Route</th>
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<tbody>
<tr>
<td>New York to Hong-Kong</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eido Cape Horn</td>
<td>10,089</td>
<td>Eido</td>
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<tr>
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<td>Eido</td>
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<tr>
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<td>15,568</td>
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<tr>
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<td>Panama Railroad</td>
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<td>Isthmus of Tehuantepec</td>
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<td>Liverpool to San Francisco</td>
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<td>eido Cape Horn</td>
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<td>Eido</td>
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<td>Panama Railroad</td>
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</tr>
<tr>
<td>Isthmus of Tehuantepec</td>
<td>8,376</td>
<td>Eido</td>
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The ground has been frequently surveyed with the idea of cutting a canal; notabl
The bridge was completed in 1865, has two 185-foot arch-spans, and with its approaches is 1,528 1/2 feet long. The foundations of the western abutment were white-oak piles, driven through twenty-seven feet of silt down to a five foot layer of gravel and bowlders, covering the bed-rock. The heads of the piles were im- belded in beton to a depth of 2 1/2 feet, upon which was laid a platform on which the ma- sonry was erected. The thrust of the long, flat arch forced the whole western abutment through the yielding material on which it rest- ed, and though temporary relief was sought by placing wooden struts at water-line from the abutment to the arch pier, and from the pier to the base of the approach, it was decided to seek other means of saving the bridge from destruction. The abutment had moved eight inches, and the central pier four inches, and the problem was to arrest any further move- ment without disturbing the traffic of the rail- road that was running under one of the ap- proach arches, or endangering the stability of the abutment. The ingenious plans of Messrs. Anderson and Barr were adopted, which con- sisted in building four iron 8-foot cylinders, resting upon the bed-rock, and extending up- ward at an angle of 45° through the silt to the abutment, into the base of which they were stepped. These cylinders were to be filled with cement as soon as sunk, in order to ren- der them solid supports of the abutment, and take up the thrust of the arch. The length of two of the four underground struts com- pleted in 1864 was 65 and 63 feet. The cylin- ders are sunk with the aid of compressed air, by digging out a space large enough to admit of placing one plate, which is then bolted on to those already in position. Thus, plate by plate, and ring by ring, is got into place, until the cylinder reaches bed-rock, when the work of laying the concrete begins. The concrete used is a mixture of one part of cement, two parts of sand, and four parts of broken stone. Communication between the interior of the cylin- der and the outer air is effected by means of an air-lock fourteen feet long and five feet wide, divided into three compartments. The electric light is used for the work in the cylinder.

The Nicaragua Canal.—The discussion of the treaty proposed between the United States and Nicaragua has directed attention to the pro- jected canal, which has always been a favor- ite one with our government engineers, who during the past thirty years have made elabo- rate and conflicting reports in reference to it. While the treaty has been defeated, the Gov- ernment has sent another expedition to Nicara- gua, under the direction of A. G. Menocal, of the navy, to make a resurvey of the location, on which the estimates of former surveys may be revised and verified. The cost has be- en variously estimated at $75,000,000 and $140,000,000, the latter figure being that of Major Walter McFarland, in his reports to the United States Interocianic Canal Commission,
dated Nov. 18, 1874, and Jan. 12, 1875. The total length of the canal would be 172 miles, of which 119 miles would be furnished by lakes and rivers, in which there is already sufficient depth of water, or in which such depth can be obtained easily. This utilization of existing water-ways is one of the great advantages of the canal, and it has the additional advantage of being about 800 miles farther north than the Panama route. Its disadvantages are, that the passage would require at least three days, and that there would be fifteen locks, the failure or injury of any one of which would obstruct the entire line. Another great disadvantage would be, that the harbor of Greytown, or San Juan del Norte, on the Atlantic end, is irretrievably ruined. Major McFarland believes that the only method by which an artificial harbor can be formed at that point, which may be expected to be permanently valuable for canal purposes, is to carry the canal boldly out through the harbor to the sea, into thirty feet of water, and by constructing outside of it, at a convenient distance from its extremity, a detached breakwater, so situated as to form a deep-water harbor behind it. The construction of an adequate harbor at the Pacific terminus, at Brico, would also involve a very large expenditure, because there is only a slight indentation of the shore-line at that point. From Greytown to San Carlos there would be 42 miles of canal, followed by 83 miles of slack-water navigation, secured by dams, on San Juan river, which would bring the navigation to Lake Nicaragua. Then it is proposed to cut channels from either shore to the 28-foot curve, the cut in the soft material to be protected by a combination of ordinary and sheet piling. The level of Lake Nicaragua, at its highest stage—the summit level of the canal—is 107 feet above mean tide in either ocean. Between the lake and the Pacific side, two routes have been proposed. O. W. Chilis, in his report, chose the route by the Rio Lajasa, because the highest point of it is only 49 feet above the level of Lake Nicaragua. Commander Lull, and Major McFarland after him, pronounced in favor of the Rio del Medio route, although the summit is 184 feet above the level of the lake; because, although the cutting would be deeper, the line would be straighter and shorter, because deep water would be found nearer its lake terminus, and because the crossing of many troublesome streams would be avoided. While it is generally admitted by engineers that the route of the Nicaragua Canal is practicable, a far more searching investigation of details must be made before any reasonably approximate estimate of its cost can be made.

The New Croton Aqueduct.—The question of an adequate increase in the water-supply for the city of New York has attracted a good deal of attention, and several plans have been proposed. After a careful study, it has been decided that the Croton river water-shed affords more than enough for any demand likely to be made upon it for a long time to come, its area being 688 square miles, on which the annual rainfall is over 46 inches. Making allowance for evaporation, absorption, and leakage, this would supply daily about 425,000,000 gallons of water, while, with the present population, the carrying capacity of the old aqueduct is about 100,000,000 gallons a day. As yet no decision has been reached as to the best means of collecting and storing the possible supply of the future, but the weight of expert evidence is in favor of building an enormous dam, 200 feet high at its highest point, at Quaker Bridge. Such a dam, while it would cost fully $4,000,000, would increase the area of Croton Lake to 3.825 acres, and elevate its surface about 84 feet above the present level. At a rate of consumption of 200,000,000 gallons of water, it would take 160 days to exhaust the quantity for which storage-room would be thus provided. While the details of the construction of this dam have not yet been determined on, work has begun with the building of a new aqueduct from Croton Lake to Harlem river. Substantially this aqueduct is to be a tunnel, lined with masonry, 264 miles long, with an average grade of 0.7 foot per mile. Thirty-three shafts of an average depth of 101 feet afford access to the working levels and a means for the removal of débris. At five points—notably in crossing Pocantico river and Sawmill river—the aqueduct emerges from under ground and is carried along in open cut. For the tunnel-work, two sections have been adopted, dependent upon local circumstances. The first is a horseshoe arch, with inverts bottom, having a total height in the clear of 12-53 feet and a width of 13-60 feet, lined with 12 inches of masonry. The second form is that of a true circle, ranging from 14 feet in diameter in the clear, with 16 inches of masonry, to 10-5 feet, with 12 inches of masonry. The reason for choosing the circle is to permit the diversion of a certain amount of water carried by the aqueduct into storage-reservoirs in the vicinity of Woodlawn Cemetery, to supply the annexed district. For the smaller quantity flowing beyond this point, a smaller conduit, having a diameter of 13-25 feet, is sufficient until Harlem river is reached, which is crossed by an inverted siphon. Through the sudden change in the grade, the water in the tunnel would receive a dangerous acceleration, and, to diminish the shocks, the friction of the flow of the water is increased by decreasing the diameter to 10-5 feet. By these variations in the diameter of the tunnel, the passage of a uniform quantity of water at a controllable speed is secured. In passing through difficult ground, the greatest care is taken to guard the tunnel against any collapse, and to resist the percolation of water through the brick-work with the aid of a water-proof plaster. In order to prevent the entrance of the aqueduct of water that is under pressure,
and thus obtain the additional supply of many springs tapped by the tunnel, small square openings are provided at intervals in the masonry lining. These openings are called "waste
weirs." All springs tapped, which are not under sufficient pressure to add to the volume of water flowing through it, are collected in a drain carried along under the masonry to points along the tunnel where the water can be got rid of, since it would otherwise wash away the backing of the masonry. These points are called "blow-offs," or "waste-weirs," and serve also the important function of permitting the emptying of a section for repairs, etc., without discharging the water from the entire length of the aqueduct. The points selected for these waste-weirs depend, of course, on the topography. At the selected point, the aqueduct merges into a rectangular chamber of two stories, the upper being entirely above the crown of the tunnel arch. The width of this chamber about corresponds to the maximum diameter of the tunnel. Alongside of this two-story chamber is a second one of similar description, which communicates with the first by four gates reaching from the top to the bottom of the chamber, and each of which is independent of the others. A breast-wall, in the second chamber, over which the escaping water flows when any of the four gates are opened, can be raised at will by the use of plants sliding in grooves, so that the level of the overflow may be varied, or the water may be entirely discharged by opening gates in the breast-wall. In the first chamber is built a pier of masonry, to serve as an abutment for massive gates, which may be lowered, and by closing similar gates at the farther end of the tunnel structure, the portion of the aqueduct between them may be emptied without drawing any water from any of the other sections along its length. In order to reach the tunnel level for purposes of excavation and working during construction, there is provision for thirty-three shafts. Some of these, when the tunnel is completed, will be under pressure of a head of water for a part or the whole of their depth; in others the water will rise only a little, if at all, above the crown of the tunnel arch. The former are lined with a greater thickness of masonry and at convenient points brick arches are thrown across the shaft, and heavy-ribbed iron plates are provided to prevent the escape of water. At several points in the shaft it is intended to give standing-room for the men when examining and cleaning. In order to allow of the escape of air imprisoned under pressure when the aqueduct is filled after having been emptied, there is an air-pipe leading up through the shaft, fitted with a valve. There are also drain-valves to allow the water in the shaft to escape into the aqueduct when the latter is being emptied, thus enabling access to be had to it through the shaft. These valves are operated by water-pressure, in which the water would not rise above the crown of the aqueduct tunnel, are simply carefully lined with masonry braced by arches, and are allowed to remain open. They too are provided with weepers to let in the water of any springs that may be tapped.

Panama Canal.—The management of the Panama Canal enterprise continues to be the object of very sharp criticisms, often bearing on their face the bias of the objectors. These strictures are met with uniformly roseate accounts of progress, on the part of the projectors of the canal, which, from their character, do not inspire unlimited confidence. It is a difficult matter, with such wide differences not only in opinions, but in statements of fact, to represent accurately the present status of the enterprise, or to forecast its near future. M. de Lesseps, at the meeting of the company on the 28th of July, 1884, assured the stockholders emphatically, and he has since reasserted it, that the canal will be opened to navigation before the close of the year 1888. He said then that careful study had revealed the fact that the amount of work to be done is smaller than was estimated, the natural basin of the Chagres river in its upper part being much greater than was at first believed. On the other hand, American engineers that have visited the works have reported, with singular unanimity, that, at the present rate of progress, the predictions of the projectors can not be fulfilled, and they all agree in pronouncing the estimates of cost far below the sums that will be required. Charles Colquhoun, Secretary of the American Committee of the Universal Interocianic Panama Canal Company, in a paper read before the Franklin Institute, Philadelphia, says the excavations necessary to complete the canal will be, for cutting the canal and the ports proper, 143,000,000 cubic yards, and for the lateral cuts 13,000,000 cubic yards, a total of 156,000,000 cubic yards, of which 53,000,000 will be dry excavation of earth and rock. Of this work, 10,294,882 cubic yards had been completed up to Sept. 1, 1884. It is urged that, now that a good deal of the expensive and slow preliminary work has been accomplished, the excavation will progress much more rapidly. The following figures are submitted to show the fallacy of the argument that, because only a fraction of the work has been done thus far, it will take a correspondingly long period, at that rate, to finish it. In the first four years, previous to Jan. 1, 1884, 5,610,778 cubic yards had been excavated, while in the first eight months of 1884 the quantity excavated had been 6,614,104 cubic yards.

The African Interior Sea.—It does not seem that the death of Col. Boulaire, the originator of the scheme for an inland African sea, will lead to its abandonment. A party of engineers and hydrographers, under the direction of Commandant Landes, of the Saint Cyr Military Academy, have gone to Tunisia, with the object of finishing the surveys for the creation
of a port in the Gabes Bay at the mouth of the Oued-Meliah river. Into this river it is proposed to carry the canal that is to establish connection between the Mediterranean and the "chottas."

The Washington Aqueduct.—With the object of increasing the water-supply of the city of Washington, extensive improvements are being made, which consist, first, in the extension of the Washington Aqueduct by a tunnel 20,715 feet long; second, the completion of a dam over the Great Falls, entirely across the Potomac; third, the construction of a new distributing reservoir in a valley east of Howard University; fourth, the laying of cast-iron mains, 75 and 48 inches in diameter, from the new reservoir to the heart of distribution. The tunnel, it is estimated, will cost $548,100. Work was begun in 1888, by sinking four shafts along the line of the tunnel, their depth being respectively 69, 58, 187, and 162 feet. With the object of obtaining the necessary fuel-supply cheaply, the plant is placed on the Chesapeake and Ohio Canal. This involves long lines of pipe. It is believed the tunnel will be completed at the close of 1888.

The Suakin-Barber Pipe-Line and Railroad.—The Soudan conflict has forced the English Government to undertake a work that will be followed with considerable interest by engineers. Some idea of the magnitude of this undertaking in the face of an enemy may be gathered from the following description of the character of country and its water-supply: From Suakin, on the Red Sea, the foot-hills are reached at the wells of Hondouk, 9 miles, and the mountains are entered at the O-Taou well, 15 miles. About 20 miles from Suakin, and at an altitude of 1,000 feet, the small valley of the Sinkat is reached, where are the wells of Hambour. Twelve miles farther is the divide between the Sinkat and O-Mareg valleys, which would oppose various obstacles to rapid railroad-building. Then for 25 to 30 miles the route lies through small valleys, passing the Dhibil wells, and about 60 miles from Suakin a short steep and narrow pass, the summit of the line, 3,000 feet high, is reached, between Wady Ahmed and Wady Haratree. This pass would present the greatest obstacles to railroad-building. After attaining the valley of the Haratree, the first large wells, those of Tamai and Salalaat, 62 and 75 miles from Suakin, are reached. At 87 miles from Suakin is a steep, windling pass, which leads into Wady Kekreeb, followed by 30 miles of barren plains to Wady Ariab, 118 miles from Suakin. The military road is to be built to this point. Beyond it the first wells are at O-Bark, 54 miles, and from the latter to the Nile, 68 miles, there is no water. As a preliminary work, undertaking, a pipe-line to furnish the water-supply has been projected. It is to consist of two lines of 4-inch mains, with pumping-stations at intervals of 25 to 30 miles.

EVANGELICAL ALLIANCE. The Eighth General Conference of the Evangelical Alliance met in Copenhagen, Denmark, September 1st. Thirteen hundred and eighty delegates were in attendance, of whom more than 900 were from Denmark, upward of 300 from Sweden, 22 from Norway, 91 from Great Britain, 56 from Germany, 10 from France, 15 from Switzerland, 10 from Holland, a considerable number from the United States and Canada, and small delegations from Belgium, Italy, Spain, Austria, Greece, and Russia. Four of the bishops of the State Church were present at the opening session. A preliminary meeting was held on the evening of August 30th, in the great hall of the University, at which the Rev. Dr. Kalkar, of Copenhagen, presided and delivered an opening address. To this responses were made by representative delegates from the National Evangelical Alliances of different countries, of whom the Lord Mayor of London spoke for the British Alliance, and the Rev. Dr. John Hall for the United States. The hymns were sung in the English, Danish, and German languages, each delegate using the one most familiar to him, at the same time.

At the opening of the regular sessions of the Conference, Monday, September 1st, reports were made on the state of religion in Denmark, by Dean Vahl; in Sweden, by Pastor Oeberg; and in Finland, by Prof. Raberg. These reports were interpreted at a sectional meeting of the English-speaking delegates, held in the afternoon. At this sectional meeting, the following resolution, in recognition of services given by a former King of Denmark to a Christian missionary enterprise, was unanimously adopted:

Resolved, That this meeting of the English and American sections of the Evangelical Alliance, assembled in Copenhagen, and consisting of Christian brethren of various denominations of the Christian Church in Great Britain and America, desire to take the earliest opportunity permitted them of expressing to His Royal Highness the gratitude they feel to Frederick IV, ancestor of the present King of Denmark, for his gracious interposition on behalf of missionaries of the Gospel in Hindostan. They cannot forget the eminent services of such men as Ziegenbalg and Schwartz in southern India, who were the first to introduce the Gospel into that vast dependency of Great Britain; but they desire especially to signalize the generous service, rendered with the sanction of his sovereign, by the representative of the Danish Crown, at Serampore, in the province of Bengal, when, by the action of the East India Company, the missionaries of the Baptist Missionary Society were threatened with deportation from the country. On that occasion protection was given to the persecuted missionaries, and in the face of threats from the Indian Government, the Governor of Serampore, General Bie, persisted in shielding the missionaries, who had taken refuge under the Danish flag, from further persecution, and in giving opportunity for the planting of the Gospel in India, which has now, under more auspicious circumstances, attained to vast and increasing magnitude. The Christian of Great Britain, and of all lands, can not but remember with the deepest gratitude the services thus rendered by the Crown of Denmark, and beg to express their profoundest wishes and prayers for the prosperity and progress of the Danish monarchy and people under the reign of its present gracious sovereign, to whose family the Crown of Great Britain and its people are so closely allied.
EVANGELICAL ALLIANCE.

At the closing general session a resolution was recorded, that "the Evangelical Alliance, while reserving its opinion regarding the methods adopted by the Salvation Army in promoting their evangelistic work, protests against the violations of religious liberty which have taken place on the occasions of certain meetings of the Salvation Army in Switzerland."

Complaints of interference by French priests with the Protestant missions in Madagascar were referred to the French and British branches of the Alliance for such action as should seem proper. Memorials sent in by some Danish pastors concerning the restrictions under which they were suffering from the authorities of the State Church of Schleswig-Holstein, now a part of Prussia, were referred to the officers of the North-German branch. A protest that the Evangelical Alliance had adopted at its session in Basle against the opium-traffic was renewed and referred to the British branch.


The British Branch. — At the Annual Conference of the British Branch of the Alliance, held October 28th, the Secretary reported a considerable increase of members, and the formation of new branches at Pekin, China, and at Singapore. Meetings had been held for promoting the principles of the Alliance at forty towns in England. One of the most interesting and important departments of the work of the Alliance was the arrangement for a universal week of prayer in January. This season of prayer was now observed throughout Europe, in North and South America, North, South, and West Africa, Australasia, the Pacific islands, and Asia. Many demands had been made for efforts of the Alliance in behalf of religious liberty.

EVENTS OF 1884. The most striking feature in the history of the year 1884, abroad, was the effort of the European nations to seize upon the still unclaimed uncivilized portions of the globe. Out of this policy of expansion grew a necessity for an understanding as to the conditions of sovereignty, which enriched the public law of Europe with the results of two conferences of the powers. A general industrial and agricultural depression produced greater suffering and discontent among the laboring population of Europe than in the previous year, and considerable unrest in the United States also. Several of the governments of Europe proposed measures for the partial solution of the labor questions. Wars in China and the Soudan grew out of the tendency to colonization recently developed among the European powers. In the United States the incidents connected with the presidential contest overshadowed all other events. Abundant harvests did not suffice, at the current prices of produce, to revive commerce and industry from their stagnant condition. The noteworthy occurrences of the year at home and abroad are chronicled below in the order of their dates:


2. Suit against the Louisiana lottery district against the Federal Government. Railroad collision near Toronto; 25 persons killed.

3. Resumption of negotiations between Prussia and
the Curia. Conviction of the Marquis Rays, the colonial sudder, in Paris.

4. Spanish treaty of commerce with the United States in relation to the West Indies concluded.

5. Burning of a convent in Belleville, Ill.; 27 lives lost. Fighting between the French and the Chinese in Tonquin; China prepares for war.

6. The King of Annam ratifies the treaty with France.


10. The sensation, in relation to the family life of Prince Frederick Charles, transients in Berlin.

11. The new Egyptian Cabinet announces the emancipation of the negro slaves.

12. Close of the Boston Exhibition. The Hungarian Poor's second time the mixed marriage bill.

13. Arrival of the damaged steamer Celtic in England. Wreck of the steamer Huail Tuen, bound for Hong-Kong; 300 lives lost.


18. Canovas del Castillo suspends the session of the Spanish Cortes.


20. The House of Representatives pass a bill to repeal the iron-clad oath. The House Committee decide that the Texas Pacific Railroad land grants are fraudulent. The Croatian Diet dissolved amid great excitement.

21. The Committee on Foreign Affairs in the Senate is charged to look into the exclusion of American citizens from the English Channel. The House passes the Government relief bill. Confessions of the murder of Schenck in Vienna.


23. Passing of the bill relating to the office of Clerk of the Senate, and of the president'scession bill, by the United States Senate. Mining accident in Colorado; death of 57 miners from fire-damp.

24. Senator Hoar's bill to provide for a vacancy in the presidential office passed by the Senate. Assassination of the detective officer Bloch in Vienna. A deputation to the English ministry calls attention to the housing of the poor. Sinking of the Simla in the English Channel.


27. The Austrian House of Deputies rejects the bill to declare German the state language. The French Chamber votes the extraordinary budget.


29. Railroad accident near Indianapolis. Resignation of the Socialist party from Vienna, and issue of a decree suspending constitutional rights in the capital and environs. Failure of a banking-house in London, with $4,000,000,000 liabilities.

February 1. The temperance education bill passes the New York State Senate. Bill to restore General Fitz-John Porter to the army passes the Senate. The spinners in Fall River go on strike. The Ferry ministry sustains a defeat in the Chamber and the Senate. Lynching affairs in Ohio, Nebraska, and Georgia.

30. Morrison brings in his tariff bill in the House of Representatives. The House of Commons passes an arrangement with M. de Lesseps in reference to the Suez Canal. The French Chamber passes an act authorizing the sale of new securities for the working-classes.


33. Flight of the new civil Law of Troy; 20,000,000 of peculations.

34. Mexican land-grant bill passes the Senate.

35. Death of black man in California.


37. Final passage of the Great relief bill in Congress. Congress appropriates $300,000,000 in aid of the sufferers from Western floods. The Austrian Government lays before the Reichsrath a bill of exceptional measures against the Anarchists. Fresh arrests of Socialists in Oestrich.


41. The Portuguese Chamber of Deputies votes the project of constitutional reform.

42. General Ignatieff made Governor of the Russian Trans-Caucasian possessions. The French Government interpellated on the subject of Madagascar.

43. The McPherson currency bill passes the Senate.

44. Congress receives an address of thanks for the Lasker resolutions from the Liberal Deputies of the
EVEN TS OF 1884. (MAR CH, APR IL.) 319


1. Senate passes the bill for the construction of a steel naval vessel. First report of the Civil Committee presented to Congress. Problem rejected by the New York State Assembly.

2. Cabinet crisis in Italy.

3. Meeting of the Peruvian Congress; Iglesias as provisional President. Arrest of the Anarchist in Vienna. Capture of Tokar by the French.

4. House of Representatives passes a bill protecting the survivor of the Mexican War. New York City bill signed. The Supreme Court decides on the legality of the act of 1878 to release postal tenderers. The prolongation of the act on behalf of Prussia in the German Reichstag is discussed. Adoption of the act in Iowa.

5. German railways.

6. Yellowstone Park by 5,000 square miles. Resolution of the Committee on the Repeal of the Organic Act passed by the Prussian Deputies.


8. Correspondence with Germany in relation to the German Reichstag on account of its refusal to reconsider the Lasker resolutions of the United States. German liberal party formed by the Progressists and the Socialists.

9. Stock in the Kansas City Railroad.

10. Correspondence with Germany in relation to the Lasker affair. The Prussian President promises to refer the case to the Senate. The French advance against the Comanche.

11. Porter bill passed by the Senate. An amendment approved by the Iowa State Senate.

12. The Virginia girl-murderer, and wife, sentenced to death. Prince Bismarck makes a speech at the railway works of the King of Abyssinia.

13. Queen Victoria's visit to the Dalhousie. The bankruptcy law carried in the Senate. The general strike railroad bill passed the New York Legislature.

14. The House of Representatives passes a bill creating a bureau of labor statistics. Dr. Nachtylaj sent to the West Coast of Africa by the German Government.

15. Fall of Shendi in the Soudan, and massacre of the garrison.


18. Murder of the policeman in London near Vienna.


20. The Italian ministry in their resignations.


22. Earthquake in the Pacific coast.

23. Congress grants $25,000 for the sufferers from the inundations in the Mississippi valley. Minister Sargent nominated to the St. Petersburg mission.

24. Austrian troops in the Russian border. Prince Bismarck calls upon Russia to join the Customs Union.


26. A treaty signed between Denmark and Spain.

27. Reconstruction of the Italian Cabinet.

28. The Danish Folketing rejects the project of national defense.


32. Proposed introduction of ministerial responsibility rejected by the German Bundesrat. The stamp duty in Mexico creates dissatisfaction.

33. The Blair school bill carried in the United States Senate. The restoration of the old wool tariff defeated in the House of Representatives. Establishment of a colonial association in Berlin. Biancheri elected President of the Italian Chamber.

34. Minister Bratianu in Bulgaria offers his resignation.

35. The Democratic State Convention in Pennsylvania declares in favor of protection and the candidacy of Randall for President.

36. Three men arrested for dynamite crimes in England. The Merry Terriers acknowledge the sovereignty of the Czar.

37. Tilden and Hendricks decline to become candidates. Attempt on the life of the President of Guatemala. Taking of Hunghao by the French in Tonquin. Admiral Hewlett's visit to the court of the King of Abyssinia.

38. Journey of the Prince and Princess Imperial of Austria to Constantinople.


40. Queen Victoria's visit to Darmstadt.

41. The bankruptcy law carried in the Senate. The general strike railroad bill passed the New York Legislature. An encyclopaedia of the Pope against secret societies, in particular the Freemasons.

42. The House of Representatives passes a bill to create a bureau of labor statistics. Dr. Nachtylaj sent to the West Coast of Africa by the German Government.

43. Fall of Shendi in the Soudan, and massacre of the garrison.
tions to the Egyptian financial conference at London led to the powers.
26. A committee of the Senate reports a bill relating to interstate commerce. Marine collision on the coast of Massachusetts. The bill against the manufacture and sale of artificial butter signed by Governor Cleveland.

May 1. Ex-Senator Kellogg acquitted of complicity in the Star Route frauds. Republican State Conventions in Rhode Island, Minnesota, Oregon, Colorado, Maryland, and North Carolina.
5. The Morrison tariff bill defeated in the House of Representatives. Germany and France protest against the Anglo-Portuguese Congo Treaty.
7. The House of Representatives appropriates $1,000,000 for the New Orleans Exhibition.
8. Inquisitions in Louisiana.
10. The Tinten Treaty concluded between France and China.
13. Mexico ratifies the treaty with the United States. Wrecks of the steamer, and a vessel.
15. Majority of the Conservative Council of State under the presidency of the Crown Prince. The House passes a bill against immigration under labor contracts. France annexes Cambodia. The French Chamber passes the bill to legalize divorce.
16. The German Reichstag adopts a measure to establish compulsory trade associations and apprentice-
EVENTS OF 1884. (JULY, AUGUST, SEPTEMBER.)

3. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
4. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
5. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
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17. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
18. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
20. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
22. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
23. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
24. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
25. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
27. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
28. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
29. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
30. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
31. Revolt in Mongolia. Demonstration against the Russian occupation of Outer Mongolia.
27. In Iowa the courts decide that the purchase of spirits is not punishable under the prohibition laws.

October 1.
1. Opening of the Prime Meridian Conference in Washington.
2. Gordon's troops recapture Berber.
4. The French occupy Kauluo, but are repelled at Tamanak.
5. German annexations on the slave coast.
6. Intelligence arrives of the murder of Col. Steward.
7. Meeting of the French Chambers.
8. The English Government decides to increase the strength of the navy.
11. Official announcement of the presidential vote of New York State.
12. Mining disaster in Pennsylvania; 14 persons killed.
13. The Scott law in Ohio declared unconstitutional. McCulloch appointed Secretary of the Treasury, and Gresham District Judge by the United States Supreme Court.

November 1.
2. Election disturbances in Lorainville, Pa. The result of the German elections leave the Government in the minority.
3. Presidential election.
5. A dynamite-factory near Reading blown up; ten lives lost. Insurrection of the Skye Croaders in Scotland.
7. Several Rhode Island spinning-factories stop work.
8. Opening of the Plenary Council at Baltimore.
9. The county suffrage bill passed by the British House of Commons.
10. The Mexican Congress begins the discussion of the bill for the conversion of the debt.
11. The Russians march into Khiva.
15. Assembly of the German Reichstag. Governor Cleaver resigns on the negro question.
16. Labor disturbances in the Hocking valley. Demonstration of Spanish students against the clergy.
17. Adjournment of the discussion on the conversion of the debt in Mexico.
18. Demonstration in Hungary in honor of the rehabilitation of General Gyorgy.
19. Compromise between Gladstone and Salisbury on the suffrage question.
Henry was an English statesman, born in 1833; died in Cambridge, Nov. His father was a magistrate in Salisbury. The boy was educated at King's College, London, and at Trinity Hall, Cambridge, where he was graduated with high honors in 1856, and obtained a degree. In 1858, while he was out shooting from a gun accidentally discharged, he was totally blinded. Nevertheless he continued his studies, and scarcely had he been addicted to riding, rowing, and skating as before. He devoted himself especially to political economy, and his reputation as an economist was established by his published articles on political economy. In 1868, he published a "Manual of Political Economy" in an enlarged edition. The Economic Position of the Laborer," in 1869, "Pauperism and Remedies," in 1873, and "Speeches on Current Positions" in 1874. In 1878, he published "Free Trade Protection," in 1877. In 1878, he was elected Lord Rector of the University of Glasgow.

Henry Fawcett, an English statesman, born in 1833; died in Cambridge, Nov. His father was a magistrate in Salisbury. The boy was educated at King's College, London, and at Trinity Hall, Cambridge, where he was graduated with high honors in 1856, and obtained a degree. In 1858, while he was out shooting from a gun accidentally discharged, he was totally blinded. Nevertheless he continued his studies, and scarcely had he been addicted to riding, rowing, and skating as before. He devoted himself especially to political economy, and his reputation as an economist was established by his published articles on political economy. In 1868, he published a "Manual of Political Economy" in an enlarged edition. The Economic Position of the Laborer," in 1869, "Pauperism and Remedies," in 1873, and "Speeches on Current Positions" in 1874. In 1878, he published "Free Trade Protection," in 1877. In 1878, he was elected Lord Rector of the University of Glasgow.

Fawcett, Henry.Financial Review of 1884. The financial crisis of May substantially fulfilled the popular surmises that events of this character are decennial in their occurrence, as from the panic of 1878 to that of this year there was a period of ten years and eight months. It was expected in 1883, and doubtless much of the depression in that year was due to the fear that it might be precipitated by some accident; but the fact that it did not then occur, and that the shrinkage in stocks and staples had been so great during the previous two years and a half, led some to believe that the catastrophe might happily be averted. Those who took
a hopeful view were encouraged by the evidence of commercial stability generally displayed, the weak houses having, one after another, succumbed to pressure from natural causes, while the survivors, by the practice of strict economy and by conservative management, had firmly entrenched themselves so as to withstand almost any shock. The manufacturing industries were also upon a solid foundation, as is shown by the fact that so few failures among them occurred during the year. Neither merchants nor manufacturers had been expanding their business, credits had been curtailed, stocks of goods reduced, and there appeared to be a general understanding patiently to wait for positive indications of a permanent improvement in the demand before taking any decisive step. The result showed the wisdom of such a course, and, although the failures of the year involved liabilities amounting to $340,000,000, most of them were financial, and many the direct result of stock speculations. Clearly, therefore, this was not a commercial crisis. Those who observed that the depression in industries and trade began to be felt when tariff reforms were first agitated by Congress, and who recalled the fact that at least one of the panics had been brought about by changes in the revenue, regarded it as probable that the next crisis would result from such legislation; and this may have contributed to the depression in trade, which was one of the underlying causes of the panic. Those who felt that the stability of our currency depended upon the suspension of the coinage of the standard silver dollar, claiming that compulsory production of $2,000,000 of these per month would, at no distant day, and perhaps suddenly, change the metallic basis from gold to silver, watched the progress of silver coinage with anxiety, and regarded it as almost certain that the next panic would be a currency panic, while the coinage of the silver dollar may have aided, it did not actually produce the catastrophe, for the flurry in February, caused by the suggestion that the Treasury might soon be compelled to ask the banks to accept silver certificates, had only a temporary effect upon the markets. The panic was due to a variety of causes, none of which was entirely controllable. It may be said to have been the natural result of the inflation, which began with 1878 and ended by the middle of 1881. The shrinkage in stocks of bonds, which continued for two years and a half, not only embarrassed the vast army of speculators, but it crippled banking and commission houses which had been carrying a large portion of the load as collateral on loans, and caused such losses among capitalists and promoters of railroad enterprises as to make them unable or unwilling to revive or reorganize their properties when these were almost on the verge of bankruptcy. By far too many of the banks at the opening of 1884 were loaded with comparatively dead assets, which they were holding in the hope of ere long being able to convert into cash. That this is true is shown by the revelations following the collapse of the Metropolitan and some other banks of the country. The utter disregard of the rights of stockholders of railroad corporations as shown in the almost unprovoked war between rival lines and among pools, was a remote contributing cause of the panic, for it created such an unfavorable impression abroad as to induce the return of vast amounts of our securities, thereby increasing the burden upon capital at a time when the load was almost insupportable. The faith in the banking system of the country and in the machinery provided for the periodical and unannounced investigations into the condition of the banks was rudely shaken by the disclosures attending the management of the Marine, Second National, and Metropolitan banks. This shock precipitated the crisis. Perfection is impossible in any system, but obvious errors in bank management can, and doubtless after this recent experience will, be corrected. The New York associated banks are, so to speak, the bulwark of the entire banking system of the country. Their methods of management must be carefully scrutinized, not only by the Government officials, but by the association and rules established and enforced, which will promptly arrest any irregularities or faults of administration, to the end that confidence in individual banks may be as unswerving as it is in all the institutions when associated for mutual protection.

The following tabular survey of the economical conditions and results of 1884, contrasted with those of the preceding year, is taken from the "Commercial and Financial Chronicle":

<table>
<thead>
<tr>
<th>1883</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colon and currency in United States, November 1</td>
<td>$1,329,855,990</td>
</tr>
<tr>
<td>Mercantile failures</td>
<td>112,674,179</td>
</tr>
<tr>
<td>Imports of merchandise, twelve months</td>
<td>697,094,315</td>
</tr>
<tr>
<td>Exports of merchandise, twelve months</td>
<td>705,164,116</td>
</tr>
<tr>
<td>Imports of gold and silver, twelve months</td>
<td>78,295,215</td>
</tr>
<tr>
<td>Exports of gold and silver, twelve months</td>
<td>87,589,440</td>
</tr>
<tr>
<td>Railroads constructed, miles</td>
<td>6,078</td>
</tr>
<tr>
<td>Gold coinage of sixty-six railroad companies, twelve months</td>
<td>290,946,385</td>
</tr>
<tr>
<td>Wheat raised, bushels</td>
<td>430,005,000</td>
</tr>
<tr>
<td>Gross income of sixty-six railroad companies, twelve months</td>
<td>1,271,086,000</td>
</tr>
<tr>
<td>Cotton raised, bales</td>
<td>87,575,975</td>
</tr>
<tr>
<td>Corn raised, bushels</td>
<td>6,174,599</td>
</tr>
<tr>
<td>Gross income of sixty-six railroad companies, twelve months</td>
<td>8,425,000</td>
</tr>
<tr>
<td>Hard coal produced, tons (2,000 pounds)</td>
<td>51,709,000</td>
</tr>
<tr>
<td>Anthracite coal produced, tons</td>
<td>500,196</td>
</tr>
</tbody>
</table>
The prices of leading staples on or about the 1st of January, 1885, compared with prices at the same date in 1884 and 1888, were as follow:

<table>
<thead>
<tr>
<th></th>
<th>1888</th>
<th>1884</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton, middling uplands, per pound</td>
<td>104A</td>
<td>82 82 43</td>
<td>85 85 41</td>
</tr>
<tr>
<td>West, American No. X, per pound</td>
<td>20 00 20 00</td>
<td>19 50 19 50</td>
<td>19 50 19 50</td>
</tr>
<tr>
<td>Barrels of meal, No. 1, per 100</td>
<td>25 00 25 00</td>
<td>19 50 19 50</td>
<td>19 50 19 50</td>
</tr>
<tr>
<td>Wheat, No. 2 red winter, per 100</td>
<td>1 00 1 104</td>
<td>1 05 1 104</td>
<td>1 05 1 104</td>
</tr>
<tr>
<td>Barrels of flour, No. 3, per 100</td>
<td>64 64 64</td>
<td>58 58 58</td>
<td>58 58 58</td>
</tr>
<tr>
<td>Pork, barrel</td>
<td>18 87 18 87</td>
<td>16 75 16 75</td>
<td>16 75 16 75</td>
</tr>
</tbody>
</table>

The Banks and the Money-Market.—Money was almost unprecedentedly cheap in 1884, the exception being during the crisis in May, when banks positively refused to loan, even upon Government bond collateral, and consequently money commanded 3 per cent. per diem commission and interest. On the 21st of June there was a sudden demand for money at 15 per cent., due to disquieting rumors circulated by the bears in the expectation of unfavorably influencing the stock-market, but after a 15 per cent. rate on the following business day, the inquiry gradually subsided, and the extremes for money thereafter for the remainder of the year were 4 per cent., and flat, bankers' balances being frequently left over at the close of the day free of interest, the lenders preferring the collateral to the money. A distinction must necessarily be made between loans by banks and by brokers. The banking institutions were not liberal lenders of money after the May panic, carefully discriminating against any but the choicest stock and bond collateral, and refusing to discount mercantile paper unless it was of unquestioned character. Single-name paper was almost unsaleable for the greater part of the summer, and this extremely conservative policy on the part of the banks generally undermined several commercial houses, and it is alleged caused the failure of one prominent dry-goods firm. The steady liquidation in the stock market and the almost entire absence of non-professional trading made the demand for money on call, and this will account for the liberal rates at which bankers' balances were offered. Those of the banks that loaned upon stock collateral rarely did so below 2 per cent., and, as they exacted the best security, borrowers who could not furnish it resorted to the Stock Exchange. After the panic the New York Clearing-House Association appointed a committee to consider "whether the methods of business, as conducted by the several members of the association, are uniform and correct in their operation with the public, and equitable to all the banks which are thus bound together in the Clearing-House Association." This committee subsequently reported in favor of refusing longer to pay interest on balances of interior banks, claiming that these deposits were periodically attracted hither by a rate of interest higher than that which could be obtained at home, and that the banks receiving these deposits were tempted, by this plethora of funds, to make injudicious loans, thereby imperiling their own safety and that of others. At the earliest indication of danger these deposits would be withdrawn, thus deranging the money market and inflicting serious injury upon speculative and other interests. The committee's report was not adopted, but later in the year the banks generally agreed to reduce to 2 per cent. the interest thereafter to be paid on deposits of their correspondents in the interior. This action, however, did not cause the withdrawal of funds from this center to any extent, mainly for the reason that there was so little demand for crop purposes, that the supply at the West and North was abundant without drawing upon the New York balances. The ebb and flow of money incident to the movement of crops, which in previous years has been an important feature of the money market, was in 1884 almost insignificant. The influx began as usual with the beginning of the year, but it was arrested by the middle of February in consequence of the silver scare which at once caused a hoarding of gold, the withdrawal of deposits by interior banks, and stimulated exports of gold to Europe. The country institutions did not return the funds so withdrawn, and when the crisis came in May they withdrew the greater part of their balances, retaining them until confidence was fully restored at this center. Even then, only a portion came back, so that, when the cereal crop was ready to move, there was an abundance of funds at the rate for this purpose. This exceptional movement is indicated by the course of deposits in the associated banks. The year opened with $329,950,300, and there was a steady increase to $338,544,400 by the middle of February, part of which was accounted for by the gain in this interval of $15,997,000 in loans. Influenced by the fear that silver certificates might be forced upon the banks in settlement of debit balances due the Clearing-House by the Sub-Treasury, the deposits were drawn down to $333,215,600 by the beginning of May. The changes in loans in the interval between February 9 and May 8 were shown by an advance from $341,919,100, on the first-named date, to $351,087,300 March 15, and then a decrease to $341,990,500 by May 8. The movements in the surplus reserve were first an advance from $8,311,350, at the beginning of the year, to $8,094,400 by February 9, and then a decline to $500,000 by May 8. Specie was of course most directly influenced.
This stood at $29,977,000 at the opening of the year, rose to $77,866,500 by February 28, and fell to $25,997,100 by May 3. The exports of gold to Europe during the three months ending with the close of April amounted to about $32,000,000, indicating the absorption of the $31,869,100 drawn from the banks, besides part of the supply that came from the Treasury in this interval. On the 8th of May the bank return showed an average of $341,990,500 loans, $55,997,100 specie, $24,119,800 legal tenders, $333,218,600 deposits, and $14,417,500 circulation. On May 24 it indicated a loss of $28,812,500 loans, $10,487,100 specie, $5,086,100 legal tenders, $38,640,500 deposits, $100,700 circulation, and $7,413,126 surplus reserve. From this point of extreme depression the recovery was gradual, and by December 6 the statement showed an average of $288,044,800 loans, $86,494,600 specie, $38,270,400 legal tenders, $328,870,300 deposits, $111,587,200 circulation, and the unprecedented sum of $42,297,450 surplus reserve. The restoration of confidence, so far as the associated banks were concerned, was speedy, as is indicated by the resumption of cash and deposits after the 9th of May. This was materially if not wholly aided by the action of the banks in the crisis. On the announcement of the suspension of the Metropolitan National Bank, May 14, the Clearing-House Association was convened and arrangements were made to issue loan certificates for Clearing-House purposes, on the basis of 75 per cent. of the assets of the banks, the object being to unite all the institutions so as to prevent runs upon individual banks, and to enable them to settle their balances with the certificates instead of with cash. The total issue between May 15 and June 6 was $24,915,000, and all, except $5,390,000, which were held by the Metropolitan National Bank, were retired by October 8. The issue of certificates and the united action of all the banks accomplished the desired object, and the excitement incident to the panic rapidly subsided. The collaterals turned over by the Metropolitan Bank as security for its certificates consisted in part of real estate, which was eventually sold, and part railroad mortgages and chattels belonging to the president of the institution. The latter have not been entirely converted, and some time may elapse before all the certificates issued to this bank can be retired. It should be stated that of the eighty-two Clearing-House banks only twenty took out certificates, and several did so solely as a precautionary measure.

The discounts for prime commercial paper were 6 to 4 per cent. in January; 4 to 4 until the middle of May; 6 to 5 to the end of July; 6 to 5 for the ensuing three months, and 6 to 4 for the remainder of the year. Single-name paper was more freely accepted during the autumn and early in the winter, but banks gave preference to that made solely in the way of trade.

The condition of the New York Clearing-House banks, the rates for money and exchange, and prices for United States bonds on or about Jan. 1, 1885, as compared with the preceding two years, are shown in the following summary:

<table>
<thead>
<tr>
<th></th>
<th>1883</th>
<th>1884</th>
<th>1885</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York City Banks:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loans and discounts</td>
<td>$111,973,500</td>
<td>$92,956,400</td>
<td>$93,574,400</td>
</tr>
<tr>
<td>Specie</td>
<td>7,027,100</td>
<td>6,663,100</td>
<td>6,875,200</td>
</tr>
<tr>
<td>Circulation</td>
<td>17,485,500</td>
<td>16,845,500</td>
<td>16,819,000</td>
</tr>
<tr>
<td>Net deposits</td>
<td>91,566,600</td>
<td>70,738,000</td>
<td>86,573,108</td>
</tr>
<tr>
<td>Legal tenders</td>
<td>59,944,900</td>
<td>59,479,100</td>
<td>65,382,500</td>
</tr>
<tr>
<td>Legal reserve</td>
<td>76,910,900</td>
<td>80,196,000</td>
<td>82,515,053</td>
</tr>
<tr>
<td>Reserve held</td>
<td>76,910,900</td>
<td>80,196,000</td>
<td>82,515,053</td>
</tr>
<tr>
<td>Surplus reserve</td>
<td>$8,273,600</td>
<td>$8,769,500</td>
<td>$9,464,713</td>
</tr>
<tr>
<td>Money, Exchange, Silver:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call loans</td>
<td>8 3/4%</td>
<td>1 7/8%</td>
<td>1 7/8%</td>
</tr>
<tr>
<td>Prime paper, sixty days</td>
<td>6 3/4%</td>
<td>0 3/4%</td>
<td>0 3/4%</td>
</tr>
<tr>
<td>Silver in London, per ounce</td>
<td>50d.</td>
<td>50d.</td>
<td>50d.</td>
</tr>
<tr>
<td>Prime sterling bills, sixty days</td>
<td>4 61/2%</td>
<td>4 61/2%</td>
<td>4 61/2%</td>
</tr>
<tr>
<td>United States Bonds:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$4, registered, option United States</td>
<td>1041/2%</td>
<td>1041/2%</td>
<td>1041/2%</td>
</tr>
<tr>
<td>$6, currency, 1866</td>
<td>192</td>
<td>184</td>
<td>181</td>
</tr>
<tr>
<td>4%, 1871, common</td>
<td>115</td>
<td>1145</td>
<td>1175</td>
</tr>
<tr>
<td>5% of 1857, common</td>
<td>119</td>
<td>1192</td>
<td>1192</td>
</tr>
</tbody>
</table>

Appendix is the Clearing-House statement of totals at the beginning of each quarter of 1884, and at the end of the year:

<table>
<thead>
<tr>
<th>DATE</th>
<th>Loans and discounts</th>
<th>Specie</th>
<th>Circulation</th>
<th>Net deposits</th>
<th>Legal tenders</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 5</td>
<td>$381,820,000</td>
<td>$63,377,000</td>
<td>$14,764,000</td>
<td>$289,639,000</td>
<td>$22,925,500</td>
</tr>
<tr>
<td>March 29</td>
<td>$461,292,000</td>
<td>$64,968,000</td>
<td>$14,394,000</td>
<td>$294,694,000</td>
<td>$21,405,000</td>
</tr>
<tr>
<td>April 29</td>
<td>$391,164,000</td>
<td>$78,928,000</td>
<td>$14,167,000</td>
<td>$289,511,000</td>
<td>$21,155,000</td>
</tr>
<tr>
<td>September 27</td>
<td>$395,674,000</td>
<td>$81,710,000</td>
<td>$11,818,000</td>
<td>$292,772,000</td>
<td>$28,992,000</td>
</tr>
<tr>
<td>December 27</td>
<td>$303,825,000</td>
<td>$62,377,000</td>
<td>$13,764,000</td>
<td>$289,639,000</td>
<td>$22,925,500</td>
</tr>
</tbody>
</table>
Exchange.—The merchandise imports were $57,888,466 below those for the exports of domestic and foreign were $46,863,814 less than for the year. The excess of merchandise export imports was $120,076,072, against 900 in 1883. There was an excess of over imports of species and bullion of 10 in 1884, against an excess of imports of the same of $4,365,878.

The excess of exports over imports and its amount in 1884 was $120,724,022 in 1883, ws that, deducting $100,000,000 to dbt, insurance, undervaluations, etc., apparent trade balance at the beginning of the year, there was left only a very small balance in our favor. The outward movement of breads was checked early in by speculative manipulation of the market, the chief distributing centers, and tled feeling at the Stock Exchange, from the collapse of the North River Iron Company, and the further decline in and Transcontinental Northern Induced the return of securities from the exchange with the gold-exporting point during January in February the suggestion that no Department would soon have to lift balances at the Clearing-House with silver certificates, tended to alarm the sterling point, and it was strong during March, April, and by the end of the month $32,000,000 gold had been withdrawn. The panic in May, by suddenly raising the rate for money, unsettled ex-rhich fell sharply and so low that ordered out from France and London market did not react after money eased, because of a pressure of bills caused by a Canadian gold loan, negotiated in London, pressed to the gold-importing point, and the hither was moderate during these months.

The fall in sterling was arrested t, but it was again approaching the in October, when the Bank of England to check withdrawals and accumulation, advanced the rate of discount 6 per cent. This effectually stopped exports and imports, but the money, and at the same time to realize a fair profit in the difference between the purchase price and that sold result from the sale of the bills at maturity. At first these operations attracted little attention, but they gradually increased in magnitude, and this demand for long sterling tended to absorb nearly all the offerings of bankers and commercial banks, keeping the rates very close to the gold-exporting point for the remainder of the year.

Manufacturing Industries.—In 1884 industrial enterprises were depressed, iron, cotton, and woolen mills suspending operations as the demand fell off, while other manufacturers presented to their employees the alternative of closing the mills or reducing wages. The laboring classes almost uniformly accepted the reduction, and toward the close of the year they were rewarded for their sacrifice, most of the mills resuming operations, although on a restricted scale. The production of pig-iron was cut down from 4,628,000 tons in 1883 to 3,884,000 in 1884, but prices did not improve, and one feature of this industry was competition in the Pennsylvania markets of Southern iron, mostly from Alabama, which was made possible by the decreased cost of manufacture.

The production of anthracite coal was reduced from 31,793,027 tons in 1883 to 30,718,298 in 1884, and toward the close of the year it was determined to substitute for the plan of restriction, which had been in force for the previous six years, the policy of allotment, each company being allowed to produce monthly quotas on the basis of 80,000,000 tons a year for all the producers. Railroad-building progressed more rapidly than might have been expected, it being stimulated to some extent by the low price of material and labor. The total mileage of the year was about 4,000, representing, at $30,000 a mile, including equipment, a capital outlay of $120,000,000, against about $200,000,000 in 1883. A very large amount of foreign and domestic capital was invested during the year in grazing-land and the establishment of cattle-ranches.

The crops.—The cereal crops were almost unprecedented in magnitude, and of superior quality. The Agricultural Bureau's estimate of the production of wheat was 512,763,900 bushels, against 420,154,500 in 1883 and 422,516,000 in 1882. That of corn was 1,779,392,482 bushels—the largest ever grown—against 1,551,066,885 in 1883; and that of oats was 588,028,000, against 471,302,400 in the previous year. The cotton crop was somewhat below early expectations by reason of drought in Texas, but the latest estimates place the yield at about 5,900,000 bales, against 5,714,052 in 1883. The very favorable outlook for a large yield of fall-sown grain caused a sharp fall in wheat in March, supplies that had been carried through the winter by speculators being thrown upon the market. This established comparatively low prices by the time the crop of winter wheat was gathered, and induced the prompt marketing of the harvest. The European cereal crops were also large, and supplies pressing on the London market from almost.
every quarter forced the price to the unpre-
cedented figure of 31s. 6d. per quarter. This
decline in Europe naturally affected our mar-
kets, and producers of spring wheat in the ex-
treme Northwest who, raising almost nothing
else, were obliged to sell, had to dispose of
their product below the cost of production.
In
the
winter-wheat
belt,
however,
where
corn is also raised, the farmers were more
fortunate. The demand for the last-named staple
became so urgent in September that deliveries for that
month were cornered, and the price forced to
$1 per bushel. This enabled those who had
the remnant of the previous crop on hand to
sell it at good prices, thus supplying their cur-
rent requirements for money, and leaving them
free to hold their wheat for better prices.

Toward the close of the year wheat reacted to a
figure which drew out moderately large sup-
plies of both spring and winter grain, the ex-
ports were comparatively liberal, and the con-
dition of the markets became more satisfactory
to the producer. Taking the prices on the first
of January each year, and the total yield for
the previous season, we have the following ap-
proximate results in quantities and values:

<table>
<thead>
<tr>
<th></th>
<th>1883</th>
<th></th>
<th>1884</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>410,000,000</td>
<td>$1.19</td>
<td>$471,000,000</td>
<td>315,000,000</td>
</tr>
<tr>
<td>Corn</td>
<td>1,000,000</td>
<td>.94</td>
<td>940,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Cotton</td>
<td>5,714,000</td>
<td>.10</td>
<td>571,400</td>
<td>5,000,000</td>
</tr>
</tbody>
</table>

Railroads.—Early in the year the granger
roads suffered from the effects of the light
crops of 1883; the line west of Chicago and in
the Colorado pool began to cut rates, and the
competition of new roads was seriously felt.
The movement of the old crops of corn and of
new winter wheat in the spring months aided
in a partial recovery in traffic, but thereafter
business fell off, and the depression in trade
which prevailed through the summer and early
in the fall had a marked influence upon rail-
road earnings. One important feature was the
war between the New York Central and the
New York, West Shore, and Buffalo, which first
took the form of cutting passenger rates, and
resulted in the reduction of the tariff in this
State to one cent per mile. Later, there was
a cut in freight rates, and by October all the
roads directly controlled by Mr. Vanderbilt,
and the Grand Trunk, Erie, Delaware, Lack-
swagenia and Western, and the Baltimore and
Ohio, became involved in the contest. The
last-named road, having had its New York
passenger connections cut off by the refusal of
the Pennsylvania to haul its trains, formed an
alliance with the West Shore, furnishing it
with a western outlet over the Niagara Falls
short line, and the Grand Trunk also facilitated
the business of the West Shore to a greater or
less extent. This had a demoralizing effect
upon the passenger and freight traffic passing
over the American trunk lines. The losses
resulting from this competition compelled a
reduction of dividends by the New York Central
and seriously embarrassed the Erie, and more
or less all the lines running to the seaboard.
The following shows gross and net earnings of
the principal trunk roads:

<table>
<thead>
<tr>
<th></th>
<th>1879-'80</th>
<th>1880-'81</th>
<th>1881-'82</th>
<th>1882-'83</th>
<th>1883-'84</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania :</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross earnings</td>
<td>$41,860,078</td>
<td>$44,146,193</td>
<td>$43,078,094</td>
<td>$35,963,326</td>
<td>$30,566,821</td>
</tr>
<tr>
<td>Net earnings</td>
<td>15,000,025</td>
<td>17,414,878</td>
<td>15,682,629</td>
<td>19,006,101</td>
<td>15,568,010</td>
</tr>
<tr>
<td>New York Central :</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross earnings</td>
<td>$33,575,919</td>
<td>$20,845,006</td>
<td>$20,658,281</td>
<td>$25,770,723</td>
<td>$30,145,947</td>
</tr>
<tr>
<td>Net earnings</td>
<td>10,598,119</td>
<td>7,092,927</td>
<td>5,745,004</td>
<td>7,887,156</td>
<td>4,580,139</td>
</tr>
<tr>
<td>Erie :</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross earnings</td>
<td>$12,942,088</td>
<td>$20,712,500</td>
<td>$20,377,774</td>
<td>$22,029,864</td>
<td>$21,287,545</td>
</tr>
<tr>
<td>Net earnings</td>
<td>4,147,094</td>
<td>7,459,073</td>
<td>6,807,661</td>
<td>7,357,368</td>
<td>5,275,858</td>
</tr>
<tr>
<td>Baltimore and Ohio :</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross earnings</td>
<td>$19,291,760</td>
<td>$19,663,977</td>
<td>$19,988,975</td>
<td>$19,789,987</td>
<td>$19,248,887</td>
</tr>
<tr>
<td>Net earnings</td>
<td>7,594,970</td>
<td>7,078,999</td>
<td>6,704,686</td>
<td>6,705,328</td>
<td>5,750,882</td>
</tr>
</tbody>
</table>

The Stock Market.—The year 1884 opened with
depression, the result of the unsettled feeling
prevailing at the end of the previous year, and
this was intensified by collapse of railroad en-
terprises, the New York and New England and
the North River Construction Companies be-
ing placed in the hands of receivers in quick
succession. The failure of the last-named com-
pany was largely due to the embarrassments
of men prominently identified with it who had
suffered severe losses by the decline in Oregon
and Transcontinental and the Northern Pacific
securities, and a further sharp fall in the mar-
ket value of the latter naturally followed the
suspension of the North River Construction
Company. Immediately thereafter New York,
West Shore, and Buffalo first mortgages de-
clined rapidly, as it was seen that a receiver
for that property was inevitable. The whole
market sympathized with this downward move-
ment, and the bears freely made speculative sales,
and thereby created a large short interest. To-
ward the close of the month a syndicate of banking operators was formed for the purpose of making a large loan Transcontinentally, on its pledge of stock assets held by it, embracing the Northern Pacific and Oregon railway and Navigation shares. This aided sharply turning upward the properties above named, the bears covered their short contracts, and a firm tone was imparted to the market, which continued through February until the close of that month, when the market began to feel the influence of the large and continued withdrawals of gold for boarding and shipment caused by what is known as the "silver scare" elsewhere referred to. The reaction from this cause was, however, not important, and the bears were not permitted to take advantage of it, for a combination in Delaware, Lackawanna, and Western partially cornered that stock on the first of March and compelled recovering of short contracts at heavy losses. This was followed by a squeeze in New York Central about the middle of the month, and the bears were so greatly demoralized by these events that their adversaries succeeded in disposing of a very large amount of the stock which they had bought during the period of depression early in January. The inclination of the market in April was downward with occasional reactions, the natural results of the closing out of the short interest, and of the timidity of the bears, who were slow to take advantage of the apparent indifference of the bulls as to the course of prices. There was not the least indication during the first few days of May that a crisis was impending, even the suspension of the Marine National Bank, and the failure of Grant & Ward, which occurred on the 5th, caused little more than a slight shock in the market, for it was quickly ascertained that the bank had none of the banking firm only a slight interest in stocks. The full details of the close relations existing between the bank and Grant & Ward were gradually made public, and then the Erie stocks and bonds were chiefly influenced because of the disclosure that the railroad company had collateral with the bank and the sum which would be temporarily tied up by the disaster. The market was irregularly recovering from this shock, when a rumor came in the afternoon of the 18th that there had been a large defalcation in one of the up-town banks. This was accompanied by free selling of stocks by a house not regarded as prominent in the market, and in the closing moments of the business day the excitement became intense because of the news that the Continental Bank had, for its own protection, refused to certify checks of the house referred to. Later in the afternoon the rumor of defalcation was confirmed by the statement that John C. Eno, president of the Second National Bank, was a defaulter to the amount of over $2,000,000, a greater part of which had been lost in Wall street speculations. The bank examiner made an investigation, reported the amount required to be made good to save the bank from insolvency, by the directors of the institution promptly came to its relief, and the bank resumed business the next morning. The shock of this enormous defalcation precipitated the panic. The stock market opened on May 14 intensely excited, although it was then known that the Second National Bank had resumed business, and that the embarrassments of Mr. Enos brokers would not involve other firms. Within an hour a run commenced on the Metropolitan National Bank, which compelled the closing of its doors before noon. Some of the deposits in this institution belonging to interior banks had previously been withdrawn because of distrust excited by the failure of the Marine Bank, and also for the reason that the president, Mr. George I. Seney, was known to be largely interested in unprofitable railroad operations, and it was suspected that the affairs of the bank were more or less involved by his individual transactions. The run on the morning of the failure was directly caused by the embarrassments of the stock firm of Nelson, Robinson & Co., in which Mr. Seney had an interest, and the suspension of this house so intensified the excitement that the bank was compelled to succumb. Then followed in quick succession failures of other stock firms, and a wild panic ensued. Rumors of trouble in other houses and banks had the usual paralyzing effect, and induced bankers energetically to pursue such a course as would insure their own safety. In this emergency the Clearing-House Association was convened and measures taken for the relief of the banks which are referred to elsewhere. As the result of this action, the Metropolitan was enabled to resume business the next morning, but confidence in it was so far shaken that, notwithstanding a change of president, the bank gradually lost its business, and it went into liquidation six months later. The measures taken by the Governor and the courts were effective, and the fact that the institutions of this city were thereby united as one materially aided in restoring confidence, and the panic, so far as the banks were concerned, speedily ended. The stock houses that were involved by the inability of their customers to respond to the demands for margin were forced to suspend, and bankers carrying deposits, who could not meet the demands of their creditors, made assignments. These failures, and those of banks and houses in the interior, continued to be reported almost daily for more than a week, and then less frequently for about a month, having more or less of an unsettling influence upon the market. The extremely low prices to which stocks fell during the week of the panic encouraged purchases for investment, but these were made cautiously, and they were not important enough in amount to do more than temporarily steady the prices of the dividend-paying specialties. Stocks held by banks as collateral
for loans were pressed upon the market when the demand for margins was not heeded, and frequently these sales gave color to reports that stock-houses or individual speculators were embarrassed. The bears early in June renewed their demonstrations, and the tendency was very decidedly downward for the remainder of the month, the most notable feature being a fall in Union Pacific, aided by the enforcement by the Government of the provisions of the Thurman act. The market became so largely oversold that the bulls, taking advantage of the circumstances, sharply advanced it on the 28th, causing a panic among the bears in their endeavor to cover their shorts. During July and August, with the assistance of powerful combinations, who made the most of the abundant present and prospective yield of the cereal crops, the market was pushed upward, but toward the close of the last-named month these cliques sold out, and left stocks in a languishing condition. The benefit of the enormous crops was to a large extent counteracted by the cutting of rates, and by disagreements in the various pools, and also by the unfavorable condition of the coal-trade, and the default by the Reading. The presidential canvass was intensely exciting in October, greatly interrupting business, and the dispute regarding the result had a depressing effect upon the market early in November, and until the question was definitely settled by official announcement of the vote in this State. Then came a partial recovery, followed by an irregular decline, mainly due to the fact that Mr. Vanderbilt had sold a large amount of the stocks of roads with which he is identified, and also aided by the liquidation of the speculative pools in Delaware, Lackawanna, and Western, and other properties. There was no decided support to the market for the remainder of the year, which closed amid great depression.

Among the incidents which at the time of their occurrence influenced the stock speculation, may be mentioned the retirement of Mr. Henry Villard from the presidency of the Northern Pacific Railroad Company, early in January; the shrinkage of the almost unprecedented amount of $4,500,000 gold to Europe, March 8th; the panic in Chicago caused by the fall in wheat during the week ended April 5th; the suspension early in May of James R. Keene, owing to unfortunate speculations; the payment, May 12th, by order of Mr. Vanderbilt, of the Reading loan, for which 50,000 shares of Central New Jersey were pledged, and the sale early in October of this stock; the collapse, in May, of the Bankers' and Merchants' Telegraph enterprise, caused by the failure of Mr. Dimmock, its financial promoter; the unsuccessful stock-pool in Louisville and Nashville, which resulted in the resignation of Mr. C. C. Baldwin, the president, toward the close of May; the retirement, in June, from the presidency of the Union Pacific, of Mr. Sidney Dillon, who was succeeded by Mr. Charles F. Adams; the purchase, early in July, by the Missouri Pacific, of the June loan of the Texas Pacific, New Orleans division, thus preventing actual default; the absorption, in July, by the Chicago and Northwestern, of the Blair system of roads, previously leased, and the issue of $14,707,600 common stock and $1,966,600 per cent. debenture bonds, and the assumption of $111,149,600 bonds and obligations; the failure of the Wall Street Bank, August 10th, caused by defalcations by the cashier; the issue of $10,000,000 debenture bonds by the New York Central, in August; and the retirement of Hon. H. J. Jewett, President of the Erie, who was succeeded, in October, by Mr. John King, Jr.

The total sales of all stocks for the year 1884 were 90,416,858 shares, against 86,697,905 in 1883, 113,720,665 in 1882, 113,392,484 in 1881, 97,200,000 in 1880, and 74,166,653 in 1879. The transactions in Government bonds during 1884 amounted to $14,939,700, and in State and railroad bonds to $308,815,850. The following is a list of quotations of leading stocks on about Jan. 1, 1883, 1884, and 1885:

<table>
<thead>
<tr>
<th>Year</th>
<th>New York Central</th>
<th>Erie</th>
<th>Lake Shore</th>
<th>Michigan Central</th>
<th>Rock Island</th>
<th>Illinois Central</th>
<th>Northwestern, common</th>
<th>St. Paul, common</th>
<th>Delaware, Lackawanna, and Western</th>
<th>Central New Jersey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1883</td>
<td>126</td>
<td>504</td>
<td>119</td>
<td>92</td>
<td>112</td>
<td>105</td>
<td>116</td>
<td>116</td>
<td>106</td>
<td>104</td>
</tr>
<tr>
<td>1884</td>
<td>126</td>
<td>504</td>
<td>119</td>
<td>92</td>
<td>112</td>
<td>105</td>
<td>116</td>
<td>116</td>
<td>106</td>
<td>104</td>
</tr>
<tr>
<td>1885</td>
<td>126</td>
<td>504</td>
<td>119</td>
<td>92</td>
<td>112</td>
<td>105</td>
<td>116</td>
<td>116</td>
<td>106</td>
<td>104</td>
</tr>
</tbody>
</table>

The following is a list of some of the speculative stocks, with the prices which they brought some time during 1888, and those to which they fell in December, 1884, and in that year:

<table>
<thead>
<tr>
<th>Stock</th>
<th>High. 1883</th>
<th>Dec. 1884, lowest. 1884.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada Southern</td>
<td>718</td>
<td>29</td>
</tr>
<tr>
<td>Erie</td>
<td>650</td>
<td>20</td>
</tr>
<tr>
<td>Louisville and Nashville</td>
<td>560</td>
<td>29</td>
</tr>
<tr>
<td>St. Paul</td>
<td>106</td>
<td>76</td>
</tr>
<tr>
<td>Ohio Central</td>
<td>106</td>
<td>76</td>
</tr>
<tr>
<td>Lake Erie and Western</td>
<td>538</td>
<td>56</td>
</tr>
<tr>
<td>Wabash</td>
<td>576</td>
<td>135</td>
</tr>
<tr>
<td>Wabash, preferred</td>
<td>576</td>
<td>135</td>
</tr>
<tr>
<td>Ohio and Mississippi</td>
<td>496</td>
<td>176</td>
</tr>
<tr>
<td>Texas and Pacific</td>
<td>48</td>
<td>12</td>
</tr>
<tr>
<td>Western Union</td>
<td>456</td>
<td>40</td>
</tr>
<tr>
<td>Indiana, Bloomington, and Western</td>
<td>573</td>
<td>11</td>
</tr>
<tr>
<td>Missouri, Kansas, and Texas</td>
<td>545</td>
<td>152</td>
</tr>
<tr>
<td>Northern Pacific, preferred</td>
<td>505</td>
<td>16</td>
</tr>
<tr>
<td>Denver and Rio Grande</td>
<td>518</td>
<td>100</td>
</tr>
<tr>
<td>Nashville, Chattanooga, and St. Louis</td>
<td>744</td>
<td>56</td>
</tr>
<tr>
<td>Memphis and Charleston</td>
<td>565</td>
<td>26</td>
</tr>
<tr>
<td>Richmond and Danville</td>
<td>79</td>
<td>48</td>
</tr>
<tr>
<td>Richmond and West Point Terminal</td>
<td>69</td>
<td>18</td>
</tr>
<tr>
<td>Chesapeaks and Ohio</td>
<td>738</td>
<td>46</td>
</tr>
<tr>
<td>Chesapeaks and Ohio, second preferred</td>
<td>97</td>
<td>7</td>
</tr>
<tr>
<td>Oregon and Transcontinental</td>
<td>59</td>
<td>12</td>
</tr>
<tr>
<td>Oregon Railroad and Navigation</td>
<td>100</td>
<td>60</td>
</tr>
<tr>
<td>Omaha</td>
<td>56</td>
<td>26</td>
</tr>
<tr>
<td>Omaha, preferred</td>
<td>56</td>
<td>26</td>
</tr>
<tr>
<td>Missouri Pacific</td>
<td>104</td>
<td>68</td>
</tr>
<tr>
<td>Union Pacific</td>
<td>104</td>
<td>68</td>
</tr>
</tbody>
</table>
The Governor, in his message to the legislature of 1884, presenting the financial

91; county special tax, $188,965.04; total county tax, $382,589.64; net State tax, after
deducting insolvencies, etc., $286,498.26.

The State now has 1,504 schools in operation,

9,381, an increase in each of 100 per cent. in the

past eight years. The average daily attendance

is 35,381; number of children between six and
twenty-one years old, three counties

missing, 66,738. The principal of the school

fund, derived chiefly from the sale of lands

known as the "sixteenth section," has in-

creased in an unprecedented manner during

the past four years. In his last message the

Governor placed the school fund on hand Jan.

1, 1881, at $246,900. There were $9,000 of

railroad bonds in the fund at that time, but as

their validity or value had been questioned

they were not included in the estimate. Since

that period their value has been settled, and

being added to the fund makes $355,900 as

the principal of the school fund, which had

slowly accumulated from 1846 up to Jan. 1,

1881. The increase in the past four years has

been $292,084.20. This makes the total

common-school fund $476,184.25, yielding an

income of $27,314 annually, which is apportioned
to the counties yearly.

Under the Agricultural College grant of Con-

gress, Florida received 90,000 acres of land,

which were sold for $81,000, and the pro-
cceeds of the sale were invested in $100,000 of

Florida bonds. The interest has been invested,

and the principal now amounts to $155,800,

which produces an annual income of $9,297.
The trustees of the fund located the college at

Lake City. The building has been completed,

and the college is now in operation.

The last Legislature passed an act to provide an Institute for the Blind and Deaf and Dumb in this State, and designated the members of the Board of Education and the Governor as a board of managers, who were directed to secure suitable grounds and buildings. The city of St. Augustine gave five acres of land, and $1,000 in money, to have the Institute located at that point. The location is admirably suited for such an asylum, and is healthful and accessible. The buildings, which are commodious and of handsome architectural design, are completed and ready for use.

The two seminars, one at Gainesville and the other at Tallahassee, are in a prosperous condition, and are annually increasing the number of their pupils. They have now a fund of $91,400, producing an income of $5,568, which is divided semi-annually between the two.

A university has also been established at Tal-

ahassee by the energy and liberality of Chancel-

lor J. Kost; but it is still in its infancy.

In this connection (reminds the Governor) I can but repeat what I said in a former message, that while popular education is a duty belonging to the respective States, and a matter of local policy which should be under the management of local government, yet, owing to the peculiar condition of both, our resources are insufficient to furnish all the assistance
required for the education of our large illiterate popu-
lacion. The Right of Congress to contribute to gen-
eral education in the several States has not been ques-
tioned, and it is to be hoped that the General Govern-
ment, appreciating the great necessity for such a
course, will still further add to the educational re-
sources of the country, to be applied through the
agency of the various State organizations.

The following statement shows the number
of miles of railroad and their value, together
with the value of rolling-stock owned by the
different companies, as assessed March 1, 1884.

<table>
<thead>
<tr>
<th>MILES OF MAIN TRACK</th>
<th>NAME OF COMPANY</th>
<th>Value of road-bed, including side and main track</th>
<th>Value of rolling-stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>St. John's and Halifax Railroad Company</td>
<td>$24,000 00</td>
<td>$2,500 00</td>
</tr>
<tr>
<td>8</td>
<td>Pensacola and Perdido Railroad Company</td>
<td>60,000 00</td>
<td>30,000 00</td>
</tr>
<tr>
<td>46</td>
<td>Pensacola and Mobile Railroad and Manufacturing Company</td>
<td>17,917 00</td>
<td>12,000 00</td>
</tr>
<tr>
<td>11</td>
<td>Louisville and Nashville Railroad Company</td>
<td>29,720 00</td>
<td>20,000 00</td>
</tr>
<tr>
<td>114</td>
<td>South Florida Railroad Company</td>
<td>500,415 00</td>
<td>350,704 00</td>
</tr>
<tr>
<td>62</td>
<td>South and Indian River Railroad Company</td>
<td>44,042 00</td>
<td>32,199 00</td>
</tr>
<tr>
<td>100</td>
<td>Pensacola and Atlantic Railroad Company</td>
<td>1,050,000 00</td>
<td>821,993 00</td>
</tr>
<tr>
<td>139.5</td>
<td>Florida Southern Railway Company</td>
<td>600,000 00</td>
<td>380,000 00</td>
</tr>
<tr>
<td>85</td>
<td>St. John's and Lake Eustis Railway Company</td>
<td>105,750 00</td>
<td>18,000 00</td>
</tr>
<tr>
<td>410.5</td>
<td>Florida Railway and Navigation Company</td>
<td>8,082,190 00</td>
<td>2,100,575 00</td>
</tr>
<tr>
<td>84</td>
<td>Jacksonville, St. Augustine, and Halifax River Railroad Company</td>
<td>171,880 00</td>
<td>80,000 00</td>
</tr>
<tr>
<td>501</td>
<td>Jacksonville, Tampa, and Key West Railroad Company</td>
<td>410,000 00</td>
<td>150,000 00</td>
</tr>
<tr>
<td>506</td>
<td>Florida, and Western Railroad Company</td>
<td>180,770 00</td>
<td>100,000 00</td>
</tr>
<tr>
<td>87</td>
<td>East Florida Railway Company</td>
<td>285,872 00</td>
<td>150,000 00</td>
</tr>
<tr>
<td>158</td>
<td>Live Oak and Knowidale Boll Railroad Company</td>
<td>150,154 00</td>
<td>80,000 00</td>
</tr>
<tr>
<td>46</td>
<td>Chatlakhoochee and East Pass Railroad Company</td>
<td>80,875 00</td>
<td>60,000 00</td>
</tr>
<tr>
<td>10</td>
<td>Green Cove Springs and Melrose Railroad Company</td>
<td>20,000 00</td>
<td>10,000 00</td>
</tr>
<tr>
<td>13</td>
<td>St. John's Railway Company</td>
<td>60,500 00</td>
<td>40,000 00</td>
</tr>
<tr>
<td>28</td>
<td>Jacksonville Street Railroad Company</td>
<td>5,425 00</td>
<td>5,000 00</td>
</tr>
</tbody>
</table>

Total assessed value of road and rolling-stock | $7,504,479 61 | $5,350,929 27

* Operated by the Louisville and Nashville Railroad Company.
* Operated by the South Florida Railroad Company.
* Operated by the Savannah, Florida, and Western Railroad Company; they made no return of rolling-stock.

Reclamation of Lands.—The Atlantic and Gulf
Coast Canal and Okeechobee Company, under
their contract with the State for the reclamation
of lands in the southern portion of the Penin-
sula, since 1881 have steadily prosecuted the
work of constructing drainage-canals, and
improving the natural river-system, and have
added mechanical appliances by which the
completion of the work will be materially hast-
tened. A brief summary of the operations of
this company shows a completed canal for drainage
and navigation, connecting the head-
waters of the Caloosahatchee and Okeechobee,
intercepting in its course Lakes Flirt and
Heppchase, the latter being a fresh-water
lake about five miles in diameter, hitherto
practically unknown. This canal penetrates a
portion of the State hitherto inaccessible and
develops a large territory. The ledge of lime-
stone through which Caloosahatchee river at
Fort Thompson forces its way has been suffi-
ciently removed to provide a channel commen-
surate with the demand of navigation. The
company is engaged in shortening Kissimmee
river, much effective work having already been
accomplished. In some instances cuts of less
than one fourth of a mile reduced the distance
by the old river-channel almost three miles, Tiger
creek, connecting Lake Kissimmee with
Lakes Tiger, Rosalie, and Walk-in-the-Water,
on the west, has been shortened, deepened,
and improved. The water-shed of the upper
system of drainage has been permanently re-
lieved by the completion of a canal connecting
Lake Tohopekaliga with the drainage-system
south. This canal is supplementary to the
large cut, long since completed in Lake Cy-
press, by which the surface-level of Lake To-
hopekaliga, an area of 26 square miles, was
reduced many feet. The surface of the waters
in the valley of this interior tidal and lake
system varies from twenty-two feet at Lake
Okeechobee to seventy-one feet at Lake To-
hopekaliga above river-level, indicating that
the most depressed portion of the territory is
sufficiently elevated for an efficient drainage of
the whole. The work already accomplished
has opened up water-transportation for boats
of about 100 feet in length, connecting Punta
Rosa, at the mouth of Caloosahatchee river,
on the Gulf, with Kissimmee City, a point
about centrally located in the peninsular por-
tion of the State. Over 40 miles of canal and
river improvements have been made, besides
the removal of numerous obstructions. The
expenditure has aggregated over $380,000.

The magnitude of this enterprise (says the Go-
nor) and its destined influence upon the future
of the State can scarcely be realized. The reclamation
of millions of acres, containing some of the
most valuable sugar-lands in the United States, with
suitable climatic conditions for the successful growth
of all tropical fruits, is the harbinger of an era of
population, wealth, and prosperity.

Coast-Line Canal.—The Florida Coast-Line
Canal and Transportation Company, organized
to secure inland water communication from
St. Augustine to Biscayne Bay, by connecting
Matanzas, Halifax, and Indian rivers, on the

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large cut, long since completed in Lake Cy-
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Canal and Transportation Company, organized
to secure inland water communication from
St. Augustine to Biscayne Bay, by connecting
Matanzas, Halifax, and Indian rivers, on the
FLORIDA. 333

cost, is prosecuting its work. The
force has been concentrated on the work
to connect Matanzas and Halifax rivers
by canals, eight and thirty feet wide, and improve-
ded rivers, lagoons, and creeks to
the depth, about 40 miles, leaving still a gap-
es, including Smith's creek, the ridge
Matanzas and Halifax rivers, about
quarters of a mile, and a small por-
tion. It is estimated that this work will
be completed by the autumn of 1885, and
will then transport passengers and
and from St. Augustine, and the
settlements on Halifax and Hillsbor-
ors. By spring or early summer, work
in on the "Haulover," thus connecting
river, and insuring a transportation line
St. Augustine and Lake Worth, or
Inlet, 220 miles.

for the insane.—During the past two
years alterations and additions have been
some of the buildings of this institu-
tion. In January, 1883, 130; and at present
addition, 50 are supported by
by the homes, making a total of 207.

With regard to these, the Govern-
the following information:
ave been well fed and cared for, and have
ed medical attention and the services of a
The Adjutant-General, under the direc-
tion of Commissioners of State Institutions, ad-
bids for the hire of the convicts for the
years. No bids were received, and we were
with having them to support and guard, in
the expense of conveying those hereafter
from the county jails to some point where
be compelled to locate a camp. We have no
ury, and would have had to go to the expense
g suitable buildings, grounds, etc., for their
they are buildings, their support and
and transportation from the various county
have been an enormous expense. Under
stances, it was deemed to the best inter-
State to accept Mr. H. M. Wood's offer of
independent "conference at Gainesville. On Nov. 4, the Re-
publican candidates for presidential electors
received 28,081 votes; Democratic, 31,766;
scattering, 164. For Governor, the Demo-
cratic vote (Brevard and Dade counties want-
ing), was 31,830; Independent, 27,744. Two
Democratic Congressmen were chosen. The
Legislature, to meet in 1885, consists of 7 Re-
publicans, 17 Democrats, and 8 Independents
in the Senate, and 25 Republicans, 45 Demo-
crats, and 3 Independents in the House. A
majority of the voters pronounced in favor of
a constitutional convention, which will be pro-
vided for by the Legislature of 1885.

Temperance.—On the call of the Orange
County Local Option Alliance, a convention
of all interested in temperance reform and
maintaining the principle of the local-option
law was convened on July 4, in the Court-
House at Palatka. About fifty delegates
were present from the leading temperance organiza-
tions, representing nearly 1,000 members. The

or, and presidential electors. Among the reso-
ations passed were the following:

That we advocate a liberal policy on the part of the
General Government in the matter of public improve-
ments, and hold that the South has a right to demand
this until her water-ways and harbors are adjusted to
the needs of commerce to the same extent as other
sections of the country.

That we favor the calling of a Constitutional Con-
vention for the reformation of our present Constitu-

That it is the duty of the State to educate its chil-
dren, and that we favor a liberal provision for the
maintenance and development of our system of free
public schools.

That the recent remarkable growth of our popula-
tion is one of the most noteworthy indications of the
progress of the State, and that we encourage industrious
persons from all quarters to come and settle
among us, with the confident assurance of a

For Governor, Edward A. Perry was nomi-
nated, and for Lieutenant-Governor, Milton H.
Mabry. The nominee for Governor is a native of
Massachusetts, who settled in Pensacola when a young man, where he practiced law
before and after the war. During the war he
rose to the rank of brigadier-general in the
Confederate service. The Democratic can-
didates for Congress were Robert H. M. Dav-
son in the first district, and Charles Dougherty
in the second.

A Republican State Convention met in St.
Augustine on April 80, and chose delegates to the
National Convention. The following reso-

was among those adopted:

That we heartily sympathize with all classes of citi-
zens in this State who are opposed to the present
Bourbon administration, and trust that by mutual co-
operation its speedy overthrow may be accomplished.

Another Republican State Convention was
held in Tallahassee on July 24, which ratified
the nominations for State officers of the "In-
dependent "conference previously held at Live
Oak. The nominee for Governor was F. W.
Poake. The St. Augustine convention had been preceded by an "Independent Republican"
conference at Gainesville. On Nov. 4, the Re-
publican candidates for presidential electors
received 28,081 votes; Democratic, 31,766;
scattering, 164. For Governor, the Demo-
cratic vote (Brevard and Dade counties want-
ing), was 31,830; Independent, 27,744. Two
Democratic Congressmen were chosen. The
Legislature, to meet in 1885, consists of 7 Re-
publicans, 17 Democrats, and 8 Independents
in the Senate, and 25 Republicans, 45 Demo-
crats, and 3 Independents in the House. A
majority of the voters pronounced in favor of
a constitutional convention, which will be pro-
vided for by the Legislature of 1885.
delegates agreed to the formation of an organization to be called "The Florida State Temperance Association," and adopted the following resolutions:

That the friends of temperance reform in the State of Florida are earnestly requested to establish county, town, and city organizations in sympathy with this State organization, and report to the corresponding secretary, whereupon they shall be considered as forming a part of this Association.

If the members of this Association can not conscientiously, nor will they in any case, support candidates for public office, who will not sustain the local option law.

FOLGER, CHARLES JAMES, an American jurist, born in Nantucket, Mass., April 16, 1818; died in Geneva, N. Y., September 4, 1884. In 1830 his father and family removed from Nantucket to Geneva, which place became his home for life. He early manifested a love for books and study, entered Geneva (now Hobart) College at an unusually early age, and was graduated in 1856 with the highest class honors. He studied law with Messrs. Warden & Sibley, in Geneva, and was admitted to the bar in 1859. His first office was that of justice of the peace in his place of residence. He was appointed Judge of the Court of Common Pleas in 1844, and soon after was made Master and Examiner in Chancery. In 1861 he was elected County Judge of Ontario County.

He entered upon political life in the ranks of the Democratic party, being one of those known at the time as Silas Wright Democrats. In 1851 he was elected to the New York State Senate by the Republican party. This office he filled with signal ability for eight years, and was regarded as one of the leaders of the party. In the Constitutional Convention of 1867 he served on the Judiciary Committee. He was a warm personal friend of Senator Conkling, through whose influence he was appointed, in 1869, by President Grant, to the office of United States Treasurer in New York. A year later he was elected one of the Judges of the Court of Appeals for the State of New York, and on the death of Chief-Justice Church, in 1880, he was designated by Governor Cornell to act as Chief-Justice, and in November of that year he was elected by a majority of over 45,000 for the full term of fourteen years in the highest court of the State.

Judge Folger resigned his seat in the Court of Appeals to accept President Arthur's appointment of him, in 1881, as Secretary of the Treasury. In 1889 the Republican Convention nominated him for Governor of New York, but he was defeated by an overwhelming majority, because it was believed that the national Administration had practically dictated the nomination, and used unfair means in the convention. He took his defeat so much to heart that, in the opinion of those who knew him well, his health was seriously affected, and thereafter he steadily declined.

As a member of the Cabinet at Washington, Secretary Folger proved himself to be a wise and judicious adviser, as well as an able and efficient head of the department over which he presided. He was a man of solid rather than brilliant qualities. He possessed in large degree the judicial faculty, was a man of extensive attainments in his profession, and held the confidence of the country as a citizen of undoubted integrity and faithfulness. He continued at work up to the last; but within a few days of his death he sank so rapidly that his passing away took his friends and the community quite by surprise.

(See portrait in "Annual Cyclopaedia" for 1892, page 807.)

FRANCE, a republic in western Europe. The republic was proclaimed Sept. 4, 1870. The Constitution was adopted Feb. 25, 1875, by the National Assembly elected in 1871. The Chamber of Deputies is elected by universal suffrage under the scrutin d'arrondissement, which was adopted Nov. 11, 1875. Each arrondissement is represented by a deputy, and, if its population is in excess of 100,000, by additional deputies for each 100,000 or part of 100,000 beyond that number. The number of deputies in 1881 was 10,179,345. The number of deputys is 557. The Senate is composed of 500 members, 75 of whom are chosen for life, the Senate electing the successors of deceased members. The remaining 225 are elected, 75 every three years, by the departments and provinces. They are chosen by senatorial electors, elected to represent each of the communes and municipalities, together with the members of the Council General and the deputies of the department, who possess votes ex-officio. The Chamber of Deputies is elected for four years. The National Assembly meets annually on the second Tuesday in January, and must remain in session five months. The President of the Republic can call an extraordinary session, and is compelled to do so if one half of the members of the Chamber unite in demanding it. The two Chambers possess equal and concurrent powers of legislation; but all financial measures must originate in the Chamber of Deputies. The executive head of the republic is the President, who is elected for the term of seven years by a majority of the deputies and senators in joint session. The President has the disposal of the military forces, makes all appointments, civil and military, and can propose legislation; but all acts must be countersigned by the ministers, who are appointed by the President and are responsible to the Chambers.

The Government.—The President of the Republic is François P. Jules Grévy, born in 1813, who was a member of the Constituent Assembly of 1848, President of the Assembly from 1871 to 1873, and President of the Chamber of Deputies from 1876 to 1879; elected Jan. 30, 1879.

The ministry, constituted Feb. 21, 1883, is composed as follows: President of the Council
FRANCE.

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Commerce.—The special commerce of France, which comprises all imports free of duty, and those on which duty has been paid, and all the domestic exports and foreign exports that have paid duties, is distinguished in the official returns from the general commerce which embraces also the transit-trade. The special imports averaged 1,071,100,000 francs, and the exports 1,233,700,000 francs, in the decade 1847–56; the imports 2,200,500,000, and the exports 2,430,100,000 francs, in 1857–65; the imports 3,407,500,000, and the exports 3,306,400,000 francs, in 1867–75. In 1877 the imports were 3,369,800,000, and the exports 3,486,300,000 francs; in 1878, imports 4,176,200,000, exports 3,789,700,000; in 1879, imports 4,595,200,000, exports 3,261,300,000; in 1880, imports 5,038,300,000, exports 5,467,900,000; in 1881, imports 4,946,400,000, exports 2,618,400,000; in 1882, imports 4,972,100,000, exports 3,598,200,000; in 1883, imports 4,994,800,000, exports 3,524,900,000.

In 1888, 2,211,100,000 francs of the import and 2,312,500,000 francs of the export trade was with European countries—England furnishing 688,500,000 francs of the imports and receiving 910,000,000 francs of the exports; Belgium furnishing 457,400,000 francs of the imports and receiving 485,500,000 francs of the exports; Italy furnishing 398,800,000 francs of the imports and receiving 181,300,000 francs of the exports; Germany furnishing 383,200,000 francs of the imports and receiving 384,900,000 francs of the exports; Switzerland furnishing 115,100,000 francs of the imports and receiving 220,400,000 francs of the exports; Spain furnishing 348,200,000 francs of the imports and receiving 158,700,000 francs of the imports; and Russia, Austria, and Turkey furnishing respectively 814,100,000, 124,100,000, and 138,500,000 francs of the imports. The total import trade with North and South America was 1,116,500,000 francs, 207,400,000 coming from the United States, 60,100,000 from Brazil, and 67,200,000 from the Argentine Republic; the total exports to America, 650,000,000 francs, of which the United States took 382,100,000, the Argentine Republic 84,600,000, and Brazil 78,300,000 francs. The imports from Asia amounted to 318,500,000 francs, from Africa 123,400,000, from other countries 28,400,000 francs; the exports to China 17,000,000, to Africa 60,100,000, to other countries 8,900,000. The total value of the imports from foreign countries was 4,788,700,000 francs, of the exports to foreign countries 3,248,000,000 francs. The imports from Algeria were 128,900,000 francs in value, the exports to Algeria 161,800,000 francs; the imports from all the colonies 244,500,000, the exports to all the colonies 219,600,000 francs.

The imports of cereals in 1888 were of the value of 500,558,000 francs, of fermented liquors 410,799,000 francs, of colonial goods 483,641,000 francs, of tobacco 29,485,000, of fruits,
seeds, and roots 265,847,000 francs, of animals and animal food products 986,289,000 francs, total imports of articles of consumption 1,885,559,000 francs; the exports of fermented liquors 318,487,000 francs, of animals and provisions 275,985,000 francs, of colonial goods 182,837,000 francs, and the total exports of articles of consumption 917,770,000 francs. The imports of textile materials amounted to 959,990,000 francs, of timber, etc., 428,508,000 francs, of hides and leather 243,378,000, the total imports of raw materials 1,855,108,000 francs; the exports of textile materials 819,659,000 francs, of hides and leather 217,101,000 francs, of all raw materials 610,842,000 francs. The imports of textile manufactures were 260,377,000 francs, of metal wares and machinery 162,943,000 francs, of all manufactured articles 571,965,000 francs; the exports of textile manufactures 930,986,000 francs, of hardware and machinery 165,732,000 francs, of jewelry and art manufactures 145,193,000 francs, of leather and fur manufactures 141,841,000, of all manufactured articles 1,626,785,000 francs; the imports of miscellaneous articles 621,728,000, the exports 889,517,000 francs. The import of specie in 1889 amounted to 148,200,000 francs, the export to 298,200,000 francs.

Navigation.—The number of vessels entered at French ports in 1888 was 84,065, the tonnage 15,288,105, against 15,448,281 tons in 1882; the number sailing under the French flag 9,694, tonnage 4,461,886. The total number cleared was 23,663, tonnage 8,798,736, against 7,886,608 tons in 1882.

The merchant navy at the end of 1888 consisted of 14,409 sailing vessels, of 841,596 registers, and 653 steamers, of 377,759 tons, employing altogether 92,379 persons. There were 2,987 vessels engaged in the fisheries, 2,399 in the coasting trade, 1,743 in ocean commerce, and 929 in port service or yachts.

Railways.—The total length of lines open to traffic in 1888 was 28,804,000 kilometres, of which 28,387 kilometres were lines of general interest, 2,064 kilometres of these belonging to the state, 1,921 kilometres were lines not chartered, 2,903 kilometres were lines of local interest, and 213 kilometres were industrial lines.

The Post-Office.—The number of stations in 1881 was 6,158; the number of letters in 1880 was 605,781,096, postal-cards 54,564,936, letters with declaration of value 14,918,724, newspapers, circulars, etc., 728,584,985. The receipts in 1881 were 123,472,000 francs, expenses 81,598,988 francs.

Telegraphs.—The number of stations in 1888 was 4,373; the length of the state lines 75,091, of wires 232,451 kilometres. The number of messages forwarded in 1888 was 28,174,547, of which 22,006,705 were domestic and 4,167,728 international.

The Colonies.—The following table exhibits the area of the French colonies and protectorates, their population in 1881, the births and deaths in 1880, as far as reported, the commerce in 1881, and the colonial budgets for 1884 of some of the colonies:

<table>
<thead>
<tr>
<th>DEPENDENCIES</th>
<th>Area, square kilometres</th>
<th>Population</th>
<th>Births</th>
<th>Deaths</th>
<th>Imports, Exports</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>In Asia:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>French East Indies</td>
<td>300</td>
<td>271,589</td>
<td>9,561</td>
<td>7,773</td>
<td>3,206,000</td>
<td>2,370,000</td>
</tr>
<tr>
<td>French Cochin-China</td>
<td>71,480</td>
<td>1,269,517</td>
<td>19,751</td>
<td>20,817</td>
<td>41,400,000</td>
<td>17,720,000</td>
</tr>
<tr>
<td>Tonkin</td>
<td>162,380</td>
<td>1,540,000</td>
<td>21,906</td>
<td>20,817</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Celebes</td>
<td>60,261</td>
<td>1,500,000</td>
<td>15,000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>In Africa:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General and dependencies</td>
<td>220,000</td>
<td>391,008</td>
<td>5,929</td>
<td>5,829</td>
<td>19,734,000</td>
<td>21,069,000</td>
</tr>
<tr>
<td>Gold Coast and Gambia</td>
<td>4,980</td>
<td>8,000</td>
<td></td>
<td></td>
<td>7,000,000</td>
<td>1,418,000</td>
</tr>
<tr>
<td>Soko</td>
<td>4,935</td>
<td></td>
<td></td>
<td></td>
<td>4,935,000</td>
<td>431,000</td>
</tr>
<tr>
<td>Roussea</td>
<td>2,051</td>
<td>173,954</td>
<td>4,729</td>
<td>6,846</td>
<td>29,078,000</td>
<td>48,318,000</td>
</tr>
<tr>
<td>Mayotte</td>
<td>886</td>
<td>10,000</td>
<td></td>
<td></td>
<td>2,070,000</td>
<td>3,094,000</td>
</tr>
<tr>
<td>Rossel-Blanci</td>
<td>6,400</td>
<td>2,386</td>
<td>88</td>
<td></td>
<td>2,386,000</td>
<td>379,000</td>
</tr>
<tr>
<td><strong>In America:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>French Guiana</td>
<td>191,418</td>
<td>27,885</td>
<td>456</td>
<td>579</td>
<td>9,179,000</td>
<td>644,000</td>
</tr>
<tr>
<td>Martinique</td>
<td>997</td>
<td>167,181</td>
<td>6,447</td>
<td>4,319</td>
<td>28,789,000</td>
<td>4,258,000</td>
</tr>
<tr>
<td>Guadeloupe and dependencies</td>
<td>1,270</td>
<td>200,771</td>
<td>4,877</td>
<td>6,171</td>
<td>20,880,000</td>
<td>21,510,000</td>
</tr>
<tr>
<td>St. Pierre and Miquelon</td>
<td>265</td>
<td>5,594</td>
<td>173</td>
<td>88</td>
<td>5,594,000</td>
<td>926,000</td>
</tr>
<tr>
<td><strong>In America:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Cadizania and dependencies</td>
<td>19,900</td>
<td>67,584</td>
<td>68</td>
<td>68</td>
<td>36,308,000</td>
<td>9,058,000</td>
</tr>
<tr>
<td>Tahiti and dependencies</td>
<td>18,658</td>
<td>24,000</td>
<td></td>
<td></td>
<td>24,000,000</td>
<td>2,081,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>723,000</td>
<td>12,356,117</td>
<td></td>
<td>4,508,000</td>
<td>20,949,000</td>
</tr>
</tbody>
</table>

Algeria.—The area of Algeria is 667,065 square kilometres. The area of the three departments of Algiers, Oran, and Constantine is 318,834 square kilometres. Their population in 1881 was 8,310,412. The population comprised 233,597 French, 38,665 naturalized Israelis, 2,560,866 native Musulmans, and 199,944 foreigners; of the latter number 114,820 were Spaniards, 33,693 Italians, 15,402 English and Maltese, 4,301 Germans, and 228 of other nationalities. The population of the principal towns in 1881 was as follows: Algiers, 70,747; Oran, 58,550; Constantine, 38,379. The births in 1882 were 14,018 in number, the deaths 11,740. The net immigration in 1880 was 17,456.

The receipts of the Treasury in 1888 amounted to 98,650,100 francs, the disbursement to 88,267,424 francs, including 8,879,000 francs of extraordinary expenditure.
eral commerce in 1883 amounted to 30 francs of imports, and 342,300,000 francs of exports, against 294,600,000 francs and 143,600,000 francs of exports. Three quarters of the import trade is half of the export trade was seen. 

Length of railroads in operation in the of 1883 was 1,737 kilometres, not 205 kilometres on Tunisian territory; 1,570 kilometres of telegraph lines, 5,532 kilometres; 13,855 kilometres.

By the treaty of Kasr-el-Said, consigned to 1881, a French protectorate was ceded to Tunisia. Decrees for the execution of the treaty were issued April 32, 1882. by Sidi Ali Pasha, who succeeded his Sidi Mohammed, Oct. 28, 1882. 

By the command of General Dandoy, the Tunis is 115,848 hectares. The population is about 45,000 and 75,600 Arabians, 25,100 Greek Catholics, 100 Protestants the rest Mohammedans. Tunisia, the contains about 125,000 inhabitants.

Receipts of the Egyptian government in 1882 amounted to 904,444 francs, the expenditure to 30 francs. The consolidated debt is 900,000 francs, amount, the floating debt, 10,000. A decree was issued by the government in 1884, and a law enacted by the chambers, June 8, 1884, regulating the and amortization of the Tunisian debt in accordance with the convention of 1883. The Tunisian army has been increased, and mixed companies are in the formation. The value of the imports as 46,153,954 piaster, of the exports 5,592,535 piaster (two piasters = 11 3/4 cents), constituted more than twice the thirds of exports, the other articles being ess, olives, sponges, dates, leather, fish, etc. The length of railroads in 245 kilometres, of telegraph lines.

—By the treaty of Aug. 21, 1883, confirmed by the convention of June 24, 1884, the kingdom of Annam acknowledged the sovereignty of France, which henceforth sent it in its external relations. The functionaries continue to administer the affairs under the supervision of the authorities, except in the departments and public works and in which require a single head or the joint of European agents or engineers. in foreign countries are placed under the protection of France. Thou-s, the 92, receives a French garrison. Report of Quinhone, the ports of Ton- 

kingdom of Annam, exclusive of the Ch'in, ceded to France, contain Ch'in, two provinces to which China annexed to France, and also the tributary Laos and the area of the independent Mô tribes. The area is about 268,300 square kilometres, the population about 6,000,000. The capital, Hô, contains 20,000 inhabitants, or with its suburbs 50,000. The religion of the mass of the population is a worship of tutelary divinities; the educated classes are believers in the doctrines of Confucius. Buddhism is also tolerated. There are in the neighborhood of 430,000 Christians under six Roman Catholic bishops.

The value of the commerce of Haiphong in 1881 was 2,171,428 taels. The principal articles of export were silks, raw silk, lac, tin, medicines, cotton, edible fungi, oil of aniseed, etc. The leading imports were cotton, yarn, shoes, iron, Chinese pottery, mirrors, opium, potatoes, petroleum, etc. Commercial intercourse exists only with China.

The Army.—By the recruiting law of July 27, 1879, personal military service is declared obligatory on all Frenchmen capable of bearing arms for five years in the active army, four in the active army reserve, five in the territorial army, and six in the territorial army reserve. The effective in 1884 was as follows: Infantry of the line, 288,464 men; chasseurs à pied, 18,130; zouaves, 10,480; Algerian tirailleurs, 8,428; the Foreign Legion, 5,700; African light infantry, 4,140; drill companies, 1,330; total infantry, 284,787 officers and men, with 3,287 horses. Cuirassiers dragons, chasseurs, and hussars, 65,240 men; chasseurs d'Afrique, 4,102; spahis, 3,292; remount companies, 5,038; total cavalry, 68,732, with 61,692 horses. Mounted artillery, 298 batteries, 25,422 men, and 14,307 horses; mounted and flying artillery, 103 batteries of the former and 57 of the latter, 23,563 men and 14,644 horses; foot artillery, 96 batteries, 13,104 men; artillery pontonniers, 8,014 men; musicians and artificers, 2,945 men; 12 detached batteries in Africa, 2,391 men; total artillery, 70,379 men, with 31,039 horses. Engineers, 11,007 men. Train, 11,994, with 9,918 horses. Milled corps of Frenchmen and natives in Tunisia and Tonquin, 8,864 men. Staff and administration, 28,557. Gendarmerie, 25,511 men, with 18,013 horses. Total effective of the active army, 510,338 men and 124,989 horses. The infantry are armed with the Gras rifle, a kind of Chassepot with metallic cartridges. The cuirassiers carry revolvers, the other cavalry regiments muskets. The field artillery has breech-loading cannon of cast-steel, 80 and 90 millimetres thick.

The present organization permits of putting into the field 24 complete army corps in the first line and 9 in the second line, besides about 1,330,000 men exempted or employed in the auxiliary services and without military instruction, who would bring the total war effective up to 8,758,164 men. The active and territorial armies have on their lists the following numbers: active army, 704,714 men; active army reserve, 510,394 men; territorial army, 582,533 men; territorial reserve, 625,633 men; total, 3,438,164 men. Their present
FRANCE.

The strength is approximately 1,277,400 infantry, 85,478 cavalry, 180,000 artillery, 46,000 engineers, and 5,000 pannoniens, in all 1,590,876 men, or, with the train, administrative and sanitary corps, etc., about 1,800,000 men.

The Navy.—In the beginning of 1888 France possessed 25 large battleships, of which 20 were ironclads of the first rank, and 13 of the second rank; 27 vessels for coast-defense, 16 of them coast-guard, and 11 floating batteries; 67 cruisers of the first, second, and third classes; 17 avisos; 10 screw and 12 paddle fleet avisos; 21 gunboats of the first and second classes; 61 transports; 26 small gunboats, and 31 torpedo-boats; and 63 sailing vessels. There were on the stocks 8 ironclads of the first class and 2 of the second, 3 coast-guards, 2 armored gunboats, 6 cruisers, 2 avisos, 3 screw and 6 paddle-wheel fleet dispatch-boats, 5 transports, and 11 torpedo-boats. The navy is manned by 1,590 officers and 41,927 men, not including 3,940 in the auxiliary services, 18,770 marine infantry, 4,661 marine artillery, etc. The period of service is five years in the active service, and four in the reserve.

The finances.—The ordinary budget of 1888 showed a deficit of 80,414,080 francs, and that of 1888 one of 46,125,100 francs. During the period from 1870 to 1888 the normal receipts exceeded the normal expenditures by 684,412,761 francs, but the expenditures, on account of the surplus, exceeded this amount by 2,004,276 francs. The accounts of 1884 have not been made up. The budget for 1885 places the expenditures under the principal heads at the following amounts:

**EXPENDITURES.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public debt</td>
<td>1,277,092,989</td>
</tr>
<tr>
<td>Potations</td>
<td>86,179,411</td>
</tr>
<tr>
<td>Legislation</td>
<td>17,197,350</td>
</tr>
<tr>
<td>Justice</td>
<td>86,944,800</td>
</tr>
<tr>
<td>Public Worship</td>
<td>52,955,966</td>
</tr>
<tr>
<td>Ministry of Foreign Affairs</td>
<td>14,588,900</td>
</tr>
<tr>
<td>Ministry of Interior</td>
<td>70,551,229</td>
</tr>
<tr>
<td>Ministry of Finance</td>
<td>90,145,910</td>
</tr>
<tr>
<td>Ministry of Posts and Telegraphs</td>
<td>8,933,485</td>
</tr>
<tr>
<td>Ministry of War</td>
<td>206,396,590</td>
</tr>
<tr>
<td>Ministry of Marine and the Colonies</td>
<td>394,490,805</td>
</tr>
<tr>
<td>Ministry of Commerce</td>
<td>13,337,268</td>
</tr>
<tr>
<td>Ministry of Agriculture</td>
<td>95,458,190</td>
</tr>
<tr>
<td>Ministry of Public Works</td>
<td>154,692,875</td>
</tr>
<tr>
<td>Administration and collection</td>
<td>809,140,311</td>
</tr>
<tr>
<td>Reinstallations</td>
<td>203,360,000</td>
</tr>
<tr>
<td>Total ordinary expenditures</td>
<td>8,048,544,744</td>
</tr>
<tr>
<td>Expenditures from extraordinary sources</td>
<td>208,121,318</td>
</tr>
<tr>
<td>Total expenditures</td>
<td>8,256,666,063</td>
</tr>
</tbody>
</table>

The receipts of 1885 are estimated in the budget as follows:

**RECEIPTS.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land tax</td>
<td>177,920,000</td>
</tr>
<tr>
<td>Personal property and head taxes</td>
<td>67,992,000</td>
</tr>
<tr>
<td>Door and window tax</td>
<td>42,970,000</td>
</tr>
<tr>
<td>Patents</td>
<td>204,902,000</td>
</tr>
<tr>
<td>Other direct taxes</td>
<td>207,800</td>
</tr>
<tr>
<td>Royalties, superannuities, fines, marriage-tax, etc.</td>
<td>28,554,950</td>
</tr>
<tr>
<td>Direct and special taxes of Algeria</td>
<td>18,110,974</td>
</tr>
<tr>
<td>Registration, stamps, and domains</td>
<td>789,016,190</td>
</tr>
<tr>
<td>Forests</td>
<td>85,684,864</td>
</tr>
<tr>
<td>Customs and excise duties</td>
<td>818,989,000</td>
</tr>
<tr>
<td>Kroece duties</td>
<td>1,207,920,000</td>
</tr>
<tr>
<td>Total receipts</td>
<td>8,048,785,977</td>
</tr>
</tbody>
</table>

**Receipts from extraordinary resources.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total receipts</td>
<td>8,256,666,063</td>
</tr>
</tbody>
</table>

The expenditures, on account of the public debt for 1885, are set down as 1,277,107,033 francs, including pensions, indemnities, etc. The new 44 per cent. rentes amount to 805,540,369 francs; the old 44 per cent., 87,433,294 francs; 4 per cents., 444,086,693 francs; 5 per cents., 362,397,038 francs; interest and amortization of the capital of the budget of extraordinary resources, 258,068,000 francs; other terminable debts, 146,883,415 francs; military pensions, 64,576,000 francs; civil pensions, 57,988,000 francs; other pensions and annuities, 24,042,755 francs.

The Tonquin and Formosa Campaigns.—The military action of France in the East (see China and Tonquin) awakened little enthusiasm at home. Only on the occasions of important military or diplomatic events did the public show much excitement. The Government was sure of the support of its regular majority. The Monarchists approved vigorous action, while the Radical groups opposed the Tonquin policy of the Government altogether. After the Bao Le affair, which was portrayed as a treacherous ambuscade, subsequent to the conclusion of a formal peace, the people were generally in favor of reprisals, provided the finances of the military organization were not weakened. After the bombardment of Fochow, they would have been satisfied at the conclusion of peace. The continuation of hostilities outside of Tonquin seemed due to hopes of gaining possession of the fertile island of Formosa, with its coal mines and harbors. The Chamber was always willing to vote the credits demanded. The majority was in favor of pursuing the operations with unlimited spirit. A difference arose between the other members of the Cabinet and Gen. Campenon, who declared that the French army could not spare more than 6,000 men without jeopardizing its mobilization. To meet the difficulty, he proposed the formation of a new colonial army, which would release the regular troops in Algeria and furnish 15,000 men as a second reserve for distant expeditions. The scheme would cost 9,000,000 francs the first year and 5,500,000 in subsequent years. When the Government had increased the force in Tonquin to about 18,000 men by enlisting volunteers and sending Algerian troops, it was considered dangerous to call for more volunteers. A final vote of confidence in the colonial policy of the Government was given Nov. 28, and a credit of 60,000,000 francs was voted.

The Protectorate in Tunisia.—The capitulations
FRANCE.

been done away with, and the debt by the republic, nothing stood in of the complete establishment of the rate. With the conversion of the debt, rational Financial Commission ceased. A decree was signed by President Oct. 4, creating a staff of French civil officers, who are responsible to the Government. The administration of sty is to remain in native hands under department supervision by French officials. Provision of the debt was intrusted to financial establishments in France. The bonds were exchanged for others of slight value of 500 francs, issued at 493 and bearing interest at 4 per cent. raitin objected to the abolition of the tions, but agreed before the 1st of Jan- 84, to yield up the right of consular ion, while maintaining the financial tions that limit the duties on imports cent. ad valorem. Germany, Austria, y waited for the action of England, id their acquiescence as soon as she w her opposition.

and Morocco.—The independence of was guaranteed by the powers in a ce held in 1880 at Madrid. In France it has been made that the boundary between Algeria and Morocco, con the treaty of March 18, 1845, was not ty. In 1884 the French Government er its protection the Sherif of Wazan, in conflict with the Sultan of Morocco, who possesses great influence and leads one sect. This act awakened distrust on and Madrid, and led to a demand sanations. The French Government that its relations with the Sultan of were altogether friendly, and that it ed no designs of territorial aggran. The influence of the French repres, M. Ordonez, in Morocco was a cause as forebodings, especially in Spain. induing Sidi Hadji, the Sherif of Wazocome a French subject, he exercised influence over the Government, and he Sultan to state some of his arbi tyranny, thereby winning the good will of the people, who look upon him as their protector. His energy and the cial arrangement with Sidi Hadji, whose rivals that the Sultan, caused the man of the latter and a state of feel might lead to complications such as h Government declares that it wishes.

Man of Cambodia.—The kingdom of was virtually annexed to Cochinchina taken under French administration. A protectorate had existed sin 1881 the consent of King Norodom 650,000 francs a year for French prov was obtained. On the 4th of June, governor Thomson, of Cochinchina, with a fleet at Phnom-Penh, and the

next day demanded that the King should hand over the administration of customs. At the second conference with the King the latter refused to entertain the proposal, and, when the governor next came, the King denied him an audience, on the plea of sickness. On the 17th French troops, which had been sent for, took possession of the royal palace. The go- ernor with his staff entered the King's apart- ments and compelled him to sign a treaty un- der the threat of banishment. On the 6th of August the King sent a protest against the ratification of the treaty, which went far be- yond the customs convention, and placed the entire direction of the government in the hands of the French. This change in the terms was justified on the ground that the King had insulted the French representative, for which repairation was necessary. The ad- ministration of the finances, justice, and public works was placed by the treaty under the control of the French Government.

Annexations in Africa.—In the spring the French took possession of the port of Obock, at the entrance of the Red Sea, which was brought under the protectorate of France in 1862. On the west coast Porto Novo, which has been nominally French territory for several years, was regularly occupied. The action of France in the Congo region is noticed elsewhere (see CONGO, INTERNATIONAL ASSOCIATION OF THE). In Madagascar operations were confined to blocking the ports of the Hova after the bombardment of Mahanovo in May (see MADAGASCAR).

International Conventions.—A convention for the protection of submarine cables was signed at Paris on March 14 by the plenipotentiaries of twenty-six states. The convention remains in force for five years from a date to be agreed upon by the contracting powers, and is then to be renewed by tacit agreement from year to year. If any power withdraws at the end of one of the terms, the compact is still binding on the rest.

The ratifications of the convention of March 20, 1888, for the protection of patents and trade-marks were exchanged June 6 at Paris. The states composing the international patent and trade-mark union are England, Belgium, Brazil, Ecuador, Spain, Guatemala, Italy, the Netherlands, Portugal, San Salvador, Servia, Switzerland, and Tunis. England, Ecuador, and Tunis gave their adhesion to the convention June 6.

Relations with Germany.—The general agreement in policy between the French and German governments, and the support extended by the German Chancellor to the French contention in the diplomatic conflict with England, and to the Tonquin and Tunisian policy of France, were a source of weakness to the Ferry ministry. The prospect of a Continental alliance against England was distasteful to the French people, not only because it seemed to involve the ruination of the idea of revenge, and the
France.

Reacquisition of Alsace and Lorraine, but also because a falling out with England would injure French trade, while Germany, instead of affording any recompense, was successfully competing with France in her staple manufactures in all foreign markets. At the national festival on the 14th of July a German flag was torn down by the mob from the front of a hotel in Paris, an incident for which the Prime Minister made a formal apology to the German ambassador.

The Reorganization of French Defense.—The restoration of the French military establishment, after the disasters of 1870 and 1871, is almost completed according to the original plans, so that the French can soon be relieved of the extraordinary war budget. Up to Dec. 31, 1884, the credits voted for this purpose amounted to 2,982,971,451 francs. Of this sum 276,399,969 francs remained unexpended. The Minister of War proposed to expend 85,000,000 francs in 1885, and to distribute the remainder over the succeeding years. Of the 2,017,571,455 francs already expended, 1,089,130,387 went for arms and supplies, 589,865,125 for fortifications, 70,528,501 for provisions, 18,791,584 for hospitals and field hospitals, 35,427,710 for remount and saddlery, 218,890,092 for clothing, 24,550,692 for general expenses, and about 5,000,000 for various services. Some 132,000,000 francs are required for the completion of the system of fortifications.

The Municipal Elections.—The municipal elections of May 4 revealed a great gain of strength to the Radicals in the constituencies. The results showed them to be about equal with the Government party or Opportunists. In Paris the election turned upon the question of acquiring larger political powers for the municipality. A bill had already passed the Chamber, but was resisted by the Senate, which would divide Paris into four districts, each returning two members by scrutin de liste. The result of the elections indicated an early revival of the question of giving Paris a central mayor, and at last establishing the Commune. In 1880 the Municipal Council voted to establish a mayoralty, but the Government simply annulled the enactment. The autonomist idea was a paramount issue in Lyons and Marseilles also, and in all the large cities. This principle was the leading feature in the programme of Clemenceau, and the other Radicals. It had been advocated by Gambetta and Ferry when in opposition, yet when they came into power the almost absolute authority that the centralized system of French government places in the hands of the ministry seemed too important a political power to resign, so that they were easily convinced of the danger of such a step. Nothing would drive the French peasantry into the arms of the radicals sooner than the establishment of local self-government, especially in Paris, so jealous are they of the influence of the cities. Aside from this question, the Government lost largely in the elections on account of the Tonquin camp. The Radicals opposed the course of the government in Tonquin, Madagascar, and Tonking, setting their faces against the colonial ad

Revision of the Constitution.—The long-outstanding question of constitutional revision was brought to an issue in 1884. The Government had raised the issue by bringing in a programme of reform, principally by the abolition of the Senate, and by presenting to the people the option of retaining the existing institutions as they are, or of instituting a new system. The Radicals, who are more dissatisfied with this policy, which they considered the one which the government had previously advocated, now set themselves to give the people a new choice between two systems of government. The Constitution of 1875 is now considered the work of the reactionists, and the majority. While establishing universal suffrage, the election of the Chamber of Deputies, the government proposed to abolish the Senate, to replace it by a college elected for life by the voters themselves. Representation in the Senate was based upon the singular principle of equality of communes, very satisfactory to the peasants, who are jealous of the supremacy of the cities. The system of indirect election gave each commune a single delegate to the electoral college, chosen by the municipal council. The smallest hamlet had the representation of the city of Paris. M. F. M. representing the conservative mass of the Republican party, who dreaded a sudden toward radicalism, partly from a fear of religious and political innovations in themselves, partly because they were afraid of Republican institutions, was desirous of minimizing the constitutional changes. The revision bill was introduced in the Chamber of Deputies, and was modified by the constituents in the Senate, where it was adopted. The law of April 11, 1885, was the result. The law of April 11, 1885, was then submitted to the people, whether they would retain the existing institutions or adopt the new system. The former was adopted by a majority of 500,000. The people now have the choice of two systems of government, and if they do not agree on the present one, they have the right to try another.
r of municipal councilors. This would vote with 3,000,000 inhabitants but eight as many electors as villages of 800 in-
ists, which have 10 councilors, while
of 100,000 have 24 and Paris 80. To
possible dead-lock between the Cham-
. lery proposed to give the Senate a
tive veto over measures passed up from
mer, instead of the power of absolute
. Another clause of the bill carries
ide of the secular state by abolishing
ual public prayers in all churches, chap-
'synagogues at the opening of the legis-
ession. Another provision enacting in no case shall constitutional revision
into question the republican form of
ment possessed only the effect of a
ion in favor of the permanence of the
c. The law on the election of the Sen-
erry proposed to take out of the Con-
de and make an ordinary statute like the
al law for the Chamber of Deputies.
ements of the budget made by the Sen-
ero to be decided, on the return of the
, by the Chamber unless they in-
 expenditure and stipends arising from
uates, in which case an agreement
ouses would be necessary.
le on the revision proposals of the
ent, which were submitted May 24, end until July 3. M. Ferry moved the
1 of the Constitution only to satisfy the
> Left, and in fulfillment of a pledge
at section of the party. He made
sion that the scope of revision should
ed to the Government programme.
limit could be imposed on the Cham-
semble in Congress as a constituent
y. The Congress would be sovereign
power to alter the Constitution to
, or to frame a new one. An agree-
, however, made between the sec-
 the Republican party, and promises
o to the limit marked by gov-
ntment propositions. The advocates
 revision were aroused when the
 nature of the Government project
led. In the country at large there
 interest in the discussion. The sati-
avor of revision, which was started by
n when incensed at the rejection of
 de liste by the Senate, had died out
 ministry at last proposed a scheme of
. The Government bill went up to the
in the beginning of July. The clauses
eg life-senatorship, doing away with
ayers at the meeting of the Cham-
. lial declaring the republican form of gov-
: unrevisable, were agreed to, but the
ement of Article VIII of the
ition affecting the legislative powers
 was rejected. This clause pro-
ake away from the Senate its con-
r moner bills. An amendment of M.
ich left donations to the clergy and
 established institutions, subject
to the vote of the Senate, was accepted by the
Government. These ecclesiastical grants were
hterto the principal financial subjects in dis-
pone between the two Chambers. The House
 Deputies never went to extremes, but avoided
 a dead-lock by giving in to the Senate. The
advanced Republicans were not content to
leave the only controverted items in the budget
in the control of the Senate. The amendment
was accordingly withdrawn, and the clause
omitted from the revision bill.

The Congress, which met in the Palace of
Versailles August 4, thus received the moderate
scheme of revision proposed by the Govern-
ment only in a mutilated and emasculated form.
The constitutional amendments were reduced
to three—one declaring the republic estab-
lished forever, one abolishing public prayers
at the opening of the session, and one replac-
g life-Senators by Senators elected for the
ordinary term, in a manner to be finally deter-
mmed by the Senate itself in an ordinary bill
passing through the two Chambers. The Con-
gress sat during the period when the news of
the French reprisals in China threw the nation
into a state of anxious suspense. The sessions
passed off with few exciting episodes. The bill,
which was embodied in the identical resolu-
tions of the two Chambers, described by M.
Ferry himself as a "decapitated" measure, was
adopted, and the Congress adjourned August 13.

The electoral law of the Senate, the most im-
portant part of the revision programme, re-
mained to be dealt with by ordinary legislation.
The Senate began the discussion of the bill
revising its organization November 4. The
Congress had decided that life-senatorships
were to be abolished. The principal question
now to be considered was, by what manner of
election the 75 seats, converted into nine-year
senatorships, were to be filled. In the earlier
period of the discussion, when the Advanced
Left were clamoring for the abolition of the
Second Chamber altogether, the Senators
were inclined to the proposition, which was em-
bodyed in the report of the Senate committee,
of having the 75 Senators chosen by the same
electorate as the other 225. This electorate
was composed of the Councils-General of the
departments, the Deputies for each department,
and communal delegates—one representing each
commune, large or small. The latter descrip-
tion of electors was to be changed, so that un-
der the revised Constitution the more impor-
tant communes should be represented by a pro-
portionate number of delegates in the electoral
body. The Government proposition, which
originated in a suggestion of Gambetta, and
embodied the conclusions of the Congress of
Versailles, was to have the seats filled by the
joint votes of the two Chambers. This plan
would virtually give the House of Deputies the
power of appointing one fourth of the Sen-
ators. When the matter now came up for de-
cision, the power of conservative resistance
had regained force enough to impel the Senate
to insist on retaining the system of election by which the Life-Senators had been chosen. The Senate, in selecting its life-members, took them from a different class of men from those who secured election in the departments, or from the active politicians who would enter the Senate as the candidates of the ruling party in the Chamber. They were the most distinguished men who took an interest in public affairs, from the ranks of diplomacy, the law, literature, science, the press, and military life. By an unchanging custom, which prevailed since the Senate first counted a Republican majority, the vacancies as they occurred among the members for life were filled on what was called the principle of co-option from each of the three groups of the majority—the Left Center, the Pure Left, and the Advanced Left—in rotation. If the system of co-option were abandoned, these seats would all fall to the two latter sections of the party.

When the bill came before the Chamber of Deputies, M. Floquet offered an amendment, December 2, for the election of Senators by universal suffrage. Enough members of the Republican and Democratic Unions, which constitute the ministerial majority, joined their votes with those of the Extreme and Radical Left and the reactionary groups to carry the resolution by 267 to 320 votes. The bill thus amended was sent back to the Senate. As the fate of the Government, as well as of the bill, depended on reconciling the antagonistic views of the two Chambers and passing the measure before the 15th of December, when the warrants for the senatorial elections had to be issued, the Senate renounced the Lenoel amendment, made the new Senators elective by the Senate alone, rejected the Floquet amendment, and adopted the scheme of the Senate committee which had been adopted by the Government. When the bill came back to the Chamber, M. Forry made the rejection of the Floquet amendment a Cabinet question, and secured the passage of the bill, and at the same time a general vote of confidence, by a majority of 58. The measure, as finally approved, removes the 72 life-senatorships as they fall vacant with the 225 departmental senatorships. The scale of senatorial elections assigned to the municipalities proportions their voting power to the number of municipal councilors as follows: 1 delegate or senatorial elector to communities with 10 municipal councilors, 2 for 19 councilors, 8 for 15, 6 for 21, 9 for 28, 12 for 27, 15 for 30, 18 for 32, 21 for 34, 24 for 36, and 30 for Paris.

The Primary Education Bill.—The Chamber in March passed a bill debaring the clergy and members of religious orders from the direction of primary schools as teachers, inspectors, members of the educational councils or of the officially appointed school boards. This measure, introduced by Paul Bert, directs the Government to secularize the state schools entirely within five years, by appointing lay teachers in the place of the 8,000 friars and 20,000 who have 12,000 of the schools under the management, and partly control 6,000 other. It also forbids the lay instructors from accepting salaried employments in the churches.

The Divorce Law.—The Naquot bill to legalize divorce was passed by the House of Deputies in the session of 1885. Divorce of the most unrestricted kind was enacted under the First Republic, and afterward abrogated. Napoleon I re-established divorce, and availed himself of his decree to put away the Empress Josephine. M. Naquot’s bill repealed the act of 1814, which divorce was abolished after the restoration. The Senate passed the clause of the bill repealing the law of 1816 by a large majority, and, after considerable discussion, agreed upon a measure granting divorce for the causes of adultery, conviction of crime, cruelty, and other grounds. As judicial orders of separation have been granted at the rate of about 5,000 per year, there were a great number of suitors ready to be entered as soon as the law was in force. The attitude of the Vatican was defined in diplomatic note, sent immediately after the passing of the measure, in which the Pope reminded the Government that the Church has never sanctioned divorce, and that the infamity of marriage was a dogma of the Catholic religion. The Government replied that it new law had purely civil effects and was intended to set aside the law of the Church as to marriage, and that the Holy See could give its bishops whatever instructions it saw fit, as to the religious powers to prevent the operation of the law among Catholics.

The Mohammedans.—The French Government long had in contemplation the plan of relieving France of habitual criminals by colonization. The introduction of a comprehensive measure for this purpose was a part of the legislative programme for 1884. The prospect of such legislation caused excitement in Australia, as the pretext of agitation in favor of the annexation by Great Britain of the islands of the South Sea, which France and Germany in their colonizing mood might covet. The French authorities had, after the refusal of the Communards, sent certain classes of criminals, especially homicides, to New Caledonia. Under the humanitarian administration of Captain Falbe de la Barriere, the convicts in New Caledonia enjoy many liberties and in some cases make their escape in small boats, and in several instances reached the coast of Queensland, 1,000 miles distant. I carry out the idea of colonization, women from the French female reformatories, who were willing to marry the New Caledonian convict were sent out in annual parties. The criminal population on the island was already large enough to occupy all the fertile space not alienated by the Government. Under the pressure brought to bear by the British colonists, Lord Granville remonstrated with the French Government for planting a penal colony...
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In January, M. Ferry explained that the recidivists of New Caledonia were not positive criminals, and reminded that, in the event of any escape to Australia, extradition would be afforded, expressing at the same time his belief that the feeling in Australia was prompted by anti-thrifty. A bill was introduced by the Government into the French legislature in the autumn, to provide for the transportation of escaped criminals or persons convicted of repeated offenses of a certain class. This excited fresh interest from the Australian authorities. The Government continued negotiations in interest of the colonists, but did not assume an attitude that they desired, which would have prompted the French legislators as the measure in a most undesirable manner. M. Ferry insisted that it was purely a question. The object of the bill was not to remove the criminals from France, but to place them in a condition of comparability for the purpose of reclaiming them. Surbit, who was commissioned to report on the effect of the bill, advised keeping the men in restraint. Other inquiries showed there was not room in New Caledonia; there were only 166,000 hectares of arable land, for a large addition to the present population, which is about 6,000. In its Lord Lyons protested again against the recidivists bill in any form. When the bill was reported by the senatorial committee in its窜, the intentions of the Government as a destination of the recidivists had ed. Cayenne was declared to be a painful country, the failure of the former extending being due to mismanagement. Four of the recidivists were sent to be sent there, consider going to New Caledonia. The Governor of the island in charge of all the breach of trust, obtaining money on false pretenses, escape, enticing young persons for immoral purposes, and begging or vagabondage under various circumstances, who have undergone sentence a certain number of times within years for the same offense, or other crimes or misdemeanors. The prisoners are to serve a period of probation in the agricultural seminaries of France. The skilled artisans are sent to New Caledonia, and the rest to mines, to be employed by the colonists, or in factories. Land will be allotted to those who far for agriculture. Their families will be taught to them, and to the unmarried men for obtaining wives will be offered.

Sugar Tax—For the benefit of the beet-sugar-refiners, a bill was carried through the Chamber by the Government in imposing a sur-tax on foreign sugar. The remedies in the manufacture of sugar were suggested in Germany, in conjunction with the bounties, stimulated production, chiefly in country and in Austria, to such an extent as to produce a crisis in the sugar-trade throughout the world. This was consequently the branch in which the Government was first persuaded to grant the protection that was demanded by agricultural and industrial interest alike, particularly as the duty would shut out German competition for the French market. The new law raised the import duty on manufactured sugar from three to seven francs per metric quintal for a limited period, ending August 81, 1886. The French production of sugar increased only from 415,000 tons in 1875 to 420,000 in 1884, while the export declined from 250,000 to 150,000 tons. In Germany the manufacture increased from 290,000 to 925,000 tons, of which were exported; and in Austria from 285,000 to 600,000 tons, of which were exported. Those countries had wrested from France the trade with Italy, Spain, Greece, Roumania, Egypt, and the Levant, had established a demand for beet-sugar in England, and were now entering the home market. The machinery in the German refineries was acknowledged to be better than was used in the old-fashioned processes still followed in France, extracting 10 per cent of the weight of the beets in sugar, whereas in French factories only 5 to 7 per cent. was obtained.

The Tax on Wheat—The Government, like the German, has been subjected during the agricultural depression to a strong pressure from the land-owning interest to save it from the effects of American competition by protective duties. The prohibition of American pork was a concession to this class, which is more powerful than in Germany or in Great Britain, because it includes so large a proportion of the voting population of France. The desired duty on wheat would benefit a much larger class of agriculturists; but a measure that would enhance the cost of living while French industry was sorely pressed by foreign competition, and while wages were depressed and hundreds of thousands of workmen out of employment, would aggravate the crisis, and prove disastrous to the party that carried it through. All the legislation of 1884 was arranged with reference to the elections of 1885. The financial administration of the Government was its most vulnerable point. While agriculture, manufactures, and shipping were suffering from a crisis, the Government was exposed to complaints for not taking the right course to sustain agriculture and create new resources for industry, while spending 500,000,000 francs a year upon public works, and 100,000,000 upon public schools, and embarking in unprofitable colonial enterprises which had cost already 800,000,000. A comparison with the period when the country enjoyed prosperity under the Conservatives and Moderate Republicans, and the treasury was cautiously managed by men like Léon Say, was most likely to arise in the minds and influence the votes of the rural population who were clam-
or for a tax on foreign grain. The budget showed a deficit which could not be staved off by any transfer of accounts, and which would necessitate a new loan unless new sources of revenue were found. To impose new taxes for revenue purposes alone on the eve of elections M. Ferry frankly declared would be impolitic. For the double purpose of propitiating the farmers, and restoring the balance in the budget, the Cabinet was at last induced to propose an additional duty on imported grain. The duty of 5 francs per quintal demanded by the protectionists was considered a mischievous rate. The committee of the Chamber, which reported the bill in December, recommended raising the duty on wheat from 60 centimes to 3 francs 40 centimes, and on flour from 1 franc 30 centimes to 7 francs. The proposed duty on wheat is over 13 per cent. on its average value. It was argued that this would not raise the price of bread, but would be borne by the middle-men. The Government also proposed an import duty on cattle.

The Economic Crisis.—The Government was confronted with a new difficulty in 1884, arising from the suffering condition of the working-classes in the industrial centers, and especially in Paris. The subsidence of the building fever, and the decline in the export demand for the finished products of French skill and taste, produced an industrial crisis which lasted many months before the working-people demanded the intervention of the state for their relief. In January excited meetings began to be held in the Salle Lévis. The Anarchists and the disciples of Karl Marx denounced the bourgeoisie, and preached a social revolution, while the moderate Socialists, called Possibilists, asked for a donation of 25,000,000 francs to the syndical chambers or trades-unions of Paris to enable them to take more contracts. These trades-unions are co-operative associations, as well as organizations for the protection of the general interests of the workmen in the various trades. Some of them, the paviors' corporation, for instance, execute Government contracts and divide the profit among the laborers. Their business facilities were considerably augmented by the bequest some years ago of an estate which was to be kept as a fund, out of which they could obtain advances. The Possibilists also suggested that the Government should redeem the property of poor people held in pawn by the Mont de Pïsté. Deputy Tony Revillon presented in the Chamber an address of the breadless laborers assembled in the Salle Lévis, in which they demanded that the Government should provide work. A delegation of the unemployed which waited upon Dr. Clemencenau and his associates of the Extreme Left, when asked to say what remedial measures they desired, responded that it was the business of their representatives in the Legislature, not of the workmen, to devise legislative remedies. M. Langlois offered a resolution, which was adopted by the Chamber, in favor of an investigation, and the employment of every means by the Government for the amelioration of the condition of the working-class. The situation was aggravated by the strike in the coal-mines of Anzin, which left 2,000 families without food. This strike was brought on by reduction of wages below living rates. The sympathetic chambers of workmen throughout France came to the assistance of the strikers, who had the general sympathy of its people. Besides the dynamic outrages which caused much alarm in 1883, there was no disturbance. The Chambers passed a bill providing for boards of arbitration to settle future disputes between mine-owners and workmen. In April, when the company had worked off its accumulated stock, and the last means at the disposal of the miners were exhausted, the long strike at Anzin came to an end. In the summer demonstrations of breadless laborers took place in the open air. It was M. Ferry's policy to suppress such manifestations in the streets of Paris, while allowing full license of speech in-doors. A law against seditious cries and demonstrations on the public streets was carried in the early part of the session. On November 23, after a noisy meeting in the Salle Lévis, a collision with the police took place on the boulevard when the workmen attempted to form in procession. On December 7 another riotous meeting was held, in which a struggle took place for the chair, the conveners of the meeting being outnumbered by Socialists of a more radical cast. In May the police prevented the erection of a monument to the fallen communards on the spot presented by the Municipal Council in Père Lachaise cemetery. In the Paris Municipal Council the question of the price of bread was brought up by the working-class representatives. The different sections of the labor party cast nearly 38,000 votes in the municipal elections of 1884, three times as many as in 1881, the Possibilists scoring 38,604 votes, the Blanquistes 3,219, and the Guedistes, the noisy advocates of a social cataclysm, only 867. The poor complained that the 1,800 mustard-sellers of Paris, by combinations among themselves, kept up the price of bread, notwithstanding the fall in the price of wheat. They also neglected machinery and improved ovens, which would greatly lessen the cost of manufacture, content with the profits secured through the ring. The Socialist Councilors proposed that the municipality should establish public bakeries, and thus insure fair wages to journeymen, and provide the people with cheap bread. The Municipal Council, though not willing to go to such a length in State Socialism, adopted the underlying principle by returning to the ancient practice of fixing a maximum price for bread. The subject of securing improved dwellings for the poor by state intervention was also pressed before the Municipal Council by the representatives of the labor party. A
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Silk Industry. — The Lyons industry was seriously affected by foreign competition, and many of the pure silks out of the market. Silk manufacturers became merchants and suppliers of raw materials, while the weavers were left without employment and other occupations. Some of the manufacturers made the mixed goods, but 360 francs per quintal on cotton and 450 francs per quintal of wool, were not much benefited. When temporary admission was allowed, the prices of goods fell, and the weavers were better paid. When temporary admission was again given, the weavers were again well paid. The Government, in 1888, decreed the admission free of duty of fine yarns, and the weavers were chiefly used. When temporary admission was allowed, the prices of goods fell, and the weavers were better paid. When temporary admission was again given, the weavers were again well paid.

The Hugues - Morin Affair. — One of the most celebrated cases of recent years arose out of the irresponsible practices of the private detective agencies in furnishing testimony. A detective named Morin, in seeking evidence against a husband whose wife sued for a divorce, accused him of improper relations with a Mlle. Royannez who became the wife of Clovis Huguenot, the Radical Deputy for Lyons, a famous poet and orator. Madame Huguenot brought suit against her husband, but becoming dissatisfied with the adjournments of the case, she took the case to the Chamber of Deputies in consequence of which episode passed a measure for the regulation of the private detective offices. Madame Clovis Huguenot was tried and acquitted, although private vengeance is not usually condoned by public opinion or by the courts in France.

The Republic of Andorra. — The republic of Andorra is interwoven with a feud of the dark ages. About 1400 the Counts of Foix and Urgel ended a struggle extending through centuries by dividing the suzerainty over the Andorrans. These rights became vested in the Kings of France and in the Bishops of Urgel, and were exercised in the appointment of judges to prevent smuggling. The Bishop of Urgel complained that the French judges interfered in politics. There is a conflict between the local and feudal party and a party of liberal ideas imported from France. Hence the complaint of the Spanish prelate, and representations from his Government.

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FRERE, SIR HENRY BATTLE EDWARD, an English statesman, born in Wales, March 29, 1815; died at Wimbledon, May 29, 1884. He entered the service of the East India Company in 1833, from the preparatory school of Haileybury, where he was the first in his class. Reaching Bombay after an adventurous journey by the usual route through Egypt and the Persian Gulf, he was appointed to a laborious post in the revenue department at Poona, in which he was of service to Mr. Goldsmith in improving the system of collecting taxes. He there acquired a remarkable knowledge of the history and character of the Mahratta people. In time he succeeded to Mr. Goldsmith's post at Cawnpore. His method of revenue assessment among the Mahrattas was so successful, that it was applied to the whole of the Bombay
Presidency, and afterward to Mysore, Sinde, and Berar. He was unexpectedly called to the position of private secretary to Sir George Arthur, Governor of Bombay. The annexation of Sinde, through the military operations of Sir Charles Napier, raised an outcry among the East Indian civilians, many of whom considered the act inexpedient as well as unjust. Mr. Frere displayed tact and discretion during this controversy. In 1844 he married a daughter of Sir George Arthur. In 1847 he was appointed Sir James Outram's successor as Resident at Sattara. When the Rajah died Frere recognized his appointed heir as Rajah, but the Company, which had deposed the former Rajah and deprived him of the right of adoption, ignored its agent's act, and annexed the state. Mr. Frere was made Commissioner. Two years later, in 1850, he succeeded Sir Charles Napier as Chief Commissioner to Sinda. That barren country he improved by constructing canals, and by opening roads, and by making Kurrachee a seaport. When the mutiny broke out with the rising at Meerut, although he had but two English regiments among a Mohammedan population of two millions, he sent the best of them to hold the strong fortress of Moultan. He displayed the same foresight, vigor, and fortitude during the entire crisis. He repressed three attempts at mutiny among his native troops, and sent part of them to preserve tranquillity in the Punjab, and part into central India, saying, in a dispatch to Lord Elphinstone, that "when the head and heart are threatened, the extremities must take care of themselves." For his services during this period he was knighted. After the suppression of the mutiny, he was nominated to the Viceroy's Council, and went to Calcutta, where he assisted James Wilson in restoring the disordered finances. After Mr. Wilson's death he was Finance Minister until the arrival of Samuel Laing, whom he assisted in the completion of the work. In 1862 he was appointed Governor of Bombay. He started many works of public utility in the presidency. During his administration the death-rate of Bombay was reduced one half. He was Governor during the cotton-fever and the crisis that followed upon the ending of the American war.

In 1867 Sir Bartle Frere returned to England and was appointed to the Indian Council. His career in India was uniformly successful and fortunate, but the same success did not attend him in a new field of labor which he entered near the close of his life. After serving as Special Commissioner to the East Coast of Africa in 1872 and in May, 1873, negotiating the treaty with the Sultan of Zanzibar in which that ruler undertook to suppress slavery, he was appointed to accompany the Prince of Wales on his Indian tour and enlighten him in matters of Indian policy and history. In January, 1877, Sir Bartle Frere was appointed Governor and High Commissioner at the Cape of Good Hope. Here he showed the same vigor and political capacity that distinguished him in India, but neither the white nor the black populations of South Africa were to be molded to the will of a great administrator like the conquered people of India. He took up the scheme of a confederation of the states of South Africa, over which England should exercise a supreme controlling power. The idea had been suggested as a means of diminishing the responsibility of the English Government in South Africa, but with him it meant the extension and strengthening of imperial authority. The Zulu and Transvaal wars were the result of his policy. What he might have accomplished by the unlimited exercise of the military power of England remains a subject of historical speculation, for his action in South Africa was one of the main causes of the overthrow of the Disraeli ministry, a consequence of which was his recall and the reversal of his imperial policy.
GEOPHYSICAL PROGRESS AND DISCOVERY.

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GEOPHYSICAL PROGRESS AND DISCOVERY.

Ahem.—The young Scotchman, Joseph Thomson, has returned from his expedition to Victoria Nyanza, and has given in outline an account of the remarkable results of his work. He arrived at Zanzibar in February, 1888, and set out for Kilimanjaro, which he ascended to the height of 18,700 feet. Finding that he had fallen upon the track of Dr. Fisher, who had aroused the hostility of the natives, the wild and warlike Masai, he was obliged to abandon his plan of passing to the southwest of the mountain, and returned to Taveta. From here he chose a route passing to the east of Kilimanjaro, and advanced for the second time on the Masai country. After getting past the Masai of Lake Naivasha, he started, on the 6th of October, with thirty men, for the district of Lykia and Mount Kenia. Passing out of the meridional trough or depression that extends for many hundred miles southwest from the Red Sea, ending in Tanganyika, and abounds in charming lakes, the party ascended to the plateau of Lykia, which they found occupied by the Wa-Kaari. The landscape, with its splendid forests of coniferous trees, was more suggestive of middle Europe than of equatorial regions. A magnificent chain of mountains, extending from north to south, and rising about 14,000 feet, were crossed and named the Aberdare range. After the greatest trials, Mount Kenia was reached. It is a volcanic cone, whose uppermost 3,000 feet are characterized by glittering facets of snow. Measuring nearly thirty miles in diameter at its base, this extinct volcano rises from a thorn-clad plateau 5,700 feet in altitude. Up to a height of 15,000 feet, the angle is very low; but from here the mountain suddenly springs into a peak, the sides of which are steep, and the snow is not to be seen on many places. The unclad parts, showing through the white snow as black spots, give the summit a speckled appearance, and hence its Masai name of Donyo Egare. Mr. Thomson next proceeded to Lake Baringo, a glittering, lake-beadsprinkled sheet of water, surrounded by wonderful mountain scenery, evidently of an entirely volcanic nature. Here he rejoined his caravan, and resumed, on the 16th of November, with about one hundred men, his journey toward Kavirondo and Victoria Nyanza. In the large town of Kwa-Sundu, on the river Nzoia, he encamped most of his men, and proceeded with a small party. On the 10th of December he reached Victoria Nyanza, forty-five miles east of its outlet to the Nile. Both the fertile country of Kavirondo, a part of which lies where Victoria Nyanza is placed on our maps, and the regions nearer the lake, were densely populated. Thus Mr. Thomson succeeded in giving a definite place on the map to Mount Kenia and Lake Baringo, and in correcting former ideas of the location and form of Victoria Nyanza. Besides, he has had an opportunity to study some of the most remarkable negro tribes. At the base of Mount Elgon, forty miles north of the northeast coast of the great lake, he discovered a large number of caves cut into the compact volcanic rock, and occupied by whole tribes and their cattle. They were very high, and extended into utter darkness; their present inhabitants had no tradition as to their origin. They are hardly more than 100 miles from the English station in Uganda. Probably the most interesting feature Mr. Thomson met with was the cattle-breeding Masai, through whose country he passed during the first part of his journey. In physique, language, and religious beliefs they are quite distinct from the Bantu or negro stock farther south. Their customs are very remarkable. During the greater period of their lives the unmarried men and women live together in a kraal in an indescribable manner. The men are warriors; the women attend to the cattle and perform household duties. Their diet is very strict. For several days milk is their only food; then follows a period in which only meat is eaten. They drink the blood of the bullock; but spirits, beer, tobacco, and vegetables are strictly forbidden. The Masai man first marries late in life; then he goes no more to war, and is allowed to indulge in vegetable food and all kinds of drinks. Corpses are never buried. They are not a very tractable people, and it is difficult to cultivate friendship with them; but when once made it is genuine. Mr. Thomson made his way through all the wild tribes without the loss of a single man by violence, or the necessity of shooting a native. With broken health, but cheerful and much humored, he emerged from the wilderness on the 20th of April, 1884, having completed nearly 2,000 miles of travel, and returned to England.

The mountain-range of Kilimanjaro is the subject of a scientific expedition undertaken by Mr. H. H. Johnston, under the auspices of several societies. In the middle of June, 1884, the exploring party, consisting of 120 men carefully selected by Sir John Kirk, the Consul-General of Zanzibar, had reached Uvura, a station on a plateau, 5,000 feet in altitude, one of Mount Kilimanjaro's buttresses. Uvura will be the starting-point for future investigations, and the traveler has succeeded in obtaining ground at a moderate price. The plateau is beautiful, the sides being furrowed by profound ravines, the beds of wild torrents descending from the snow-clad summits. The natives have caused one of these streams to traverse the plateau, furnishing the expedition with ice-cold water. The climate is that of southern Europe, without the fervid midday
heat. The inevitable fever attacked Mr. John-
ston at Mombass, but he persevered in march-
ing at the head of his faithful and enduring
men, and soon regained his health in the brac-
ing and salubrious air of the mountains.

Robert E. Fiegl, discoverer of the sources of
Benue, has returned to Germany after some
years' explorations in the region of Adamana.
His travels during 1884 seem to have yielded
less satisfactory results. Want of money, ill-
ess, and other mishaps prevented him for a
long time from starting on his journey to the
Congo. Meanwhile he explored the sources of
several tributaries to Benue, and corrected his
map of this tract. Later, he endeavored to
travel along the river Nana toward the Congo,
but his plan was frustrated by a war between
the several tribes of the region. An attempt
to proceed from Bagno in a southwesterly
direction was resisted by the Prince of Ti-
bati. Thus Fiegl was obliged to return to Benue.
He feels convinced that this river is navigable
for 1,100 kilometres, and its chief affluents for
a distance of fifty to sixty nautical miles, at
least during five or six months of the year,
whereby the importance of Benue as a route of
commerce is greatly increased. He warmly
advises the German Government to take pos-
session of this region.

Later explorations having reached the result
that Africa is by no means so unhealthy and
uninhabitable as hitherto supposed, the atten-
tion of the great European powers has been
called to this vast continent, which offers many
advantages for successful colonization. With
this end in view, many expeditions have been
sent to the several parts of its extended area,
and German, French, Portuguese, and English
explorers are making investigations. Difficul-
ties as to boundaries, etc., have arisen, but will
undoubtedly be settled amicably.

Arctic Regions.—But meager reports of the
results of the Imperial Polar Expeditions
have appeared, and it seems that the exploring
parties met with unusual difficulties. Dr. A.
Bunge's observations of the flora and fauna in
the vicinity of the Russian station at the mouth
of the Lena are interesting. Of mammals he
noticed the ice-bear, the wolf, the fox, the lee-
fox (Canis lupus), the ermine, the walrus, the
dolphin, the mountain-sheep (Aegoeceros monta-
nus), and the reindeer, from spring to autumn.
Many fishes were found, but few insects, and
no mollusks. In April, 1884, the doctor began
to dig for a mammoth that, according to the
inhabitants, should lie buried on the shore of
Pootaks, near Borchaja, but the results are not
yet known. Another mammoth, it is report-
ed, was found at the river Moloda. The vege-
tation is remarkably poor, as the soil consists
almost entirely of sand. It is ascertainment
that the Lena at present reaches the sea through
about fifty arms, forming the famous Lena
Delta; frost, floods, and wind, however, are
constantly working considerable changes. The
climate is very severe, chiefly on account of the

ever-blowing wind; in December, 1883, the
thermometer showed — 40° C.

The Danish explorations in Greenland were
continued during 1884. In April Lient. Jensen
left Copenhagen to explore some hundred miles
of the unknown and unpeopled western coast
between the Sukkertop and Holsteinminde.
He was accompanied by the geologist Loren
zen and the artist Riis-Carstensen. Under the
command of Capt. Norman, the gunboat Fylls
made a very satisfactory voyage along the west-
ern coast to 70° N. Dr. H. Topset, the miner-
alogist, Prof. Warming, the botanist, and Th.
Holm, the zoologist, were on board, and valu-
able collections and observations were made.

A meteoric stone of considerable weight was
found, and, by extensive dredging and trawl-
ing, specimens hitherto unknown were brough-
to light. In this connection must be mentioned
the proposition of Prof. Fries to move to
Greenland the Lappa of the Norwegian Fram-
mark and the Swedish Lappmarks, who can
find no room beside the agricultural classes on
their present home. Their reindeer would fin-
ly—many of these along the coast, without bein-
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Many fishes were found, but few insects, and
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that the Lena at present reaches the sea through
about fifty arms, forming the famous Lena
Delta; frost, floods, and wind, however, are
constantly working considerable changes. The
climate is very severe, chiefly on account of the

ever-blowing wind; in December, 1883, the
thermometer showed — 40° C.

The Danish explorations in Greenland were
continued during 1884. In April Lient. Jensen
left Copenhagen to explore some hundred miles
of the unknown and unpeopled western coast
between the Sukkertop and Holsteinminde.
He was accompanied by the geologist Loren
zen and the artist Riis-Carstensen. Under the
command of Capt. Norman, the gunboat Fylls
made a very satisfactory voyage along the west-
ern coast to 70° N. Dr. H. Topset, the miner-
alogist, Prof. Warming, the botanist, and Th.
Holm, the zoologist, were on board, and valu-
able collections and observations were made.

A meteoric stone of considerable weight was
found, and, by extensive dredging and trawl-
ing, specimens hitherto unknown were brough-
to light. In this connection must be mentioned
the proposition of Prof. Fries to move to
Greenland the Lappa of the Norwegian Fram-
mark and the Swedish Lappmarks, who can
find no room beside the agricultural classes on
their present home. Their reindeer would fin-
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while during the summer the considerable amount of alluvium that the south-western monsoons carry from the Indian Ocean almost converts North Tibet into one continuous marsh. The country has no want of mammals and fishes, but few birds. The flora is poor. On the shores of both rivers live the Tungus, against whose attacks the explorers had twice to defend themselves. It is to be deplored that Col. Prawalsky did not reach the proposed end of his summer’s expedition, Tiamdo, which French and English travelers have reached from the south, but which no European has yet approached from the north. According to the latest news, it was the intention of the distinguished Russian to move his depot to Gast, in West Zaidan (circa 37° N.), and during the winter make excursions through northern Tibet.

The assertion of M. Paul Bert that man at an elevation of about 18,000 feet would become incapable of exertion, and that a little higher he would be unable to breathe, has been disproved by the energetic mountaineer, Mr. W. W. Graham, whose efforts to climb the steep summits of the Himalayas have been crowned by the ascension of Gobour (21,900 feet) and Kuhorn (34,015 feet). This bold Englishman holds the view that Mount Everest no longer can be considered the highest summit on earth, but must yield this honor to one of two mountains fifty miles northwest of it. (See Mountaineering.)

In Central Asia the Russians are exploring regions now. It will be remembered that Capt. Putjuta, with the geologist Iwanow and the topographer Bendersky, and a strong escort, started in 1883 from Oseh, to explore the Pamirs, where the sources of the Oxus lie. The leaders of the expedition separated after their arrival at Muschi, and went in different directions; yet the communication between them was kept up as much as possible, and at several places they met, but only to separate again. The results of their work are being published, and seem to be very valuable. The heights of numerous mountains and plateaus have been ascertained, considerable geological and botanical collections made, and Mr. Iwanow has drawn about one hundred maps. In St. Petersburg a preliminary map of the Pamirs has been published, whereby new light is thrown upon these regions, as it is in some respects in conflict with the latest English map. In this connection we must mention the botanist, Dr. Regel, who for years has traversed and retraversed this region, and who, after spending the winter in Tschakend, started in February, 1884, on a new excursion. He arrived in June, at Merv, having passed through the Desert of Tschardschul. It was then his intention to travel along the northern boundaries of Afghanistan to the Pamirs. Although botany is the doctor’s chief study, he is all the time making observations of great value in other fields. This excursion will probably be his last, as it is his intention to spend some years in publishing the results of his travels.

So far, no steps have been taken to realize the Russian project for diverting the Oxus into the Caspian Sea, which, in spite of the water received from the Volga, Ural, and other rivers, is rapidly drying up, in consequence of the great evaporation. There is strong evidence that, in the fourteenth and fifteenth centuries, an arm of the Oxus reached the Caspian Sea; but the old bed has almost disappeared, and the difficulties of its restoration are so many that the expenditure seems out of all proportion to any benefits to be expected.

Of the greatest importance to the study of Asia’s geography are the publication of a “Map of Asiatic Russia,” issued by the Russian Government, and a “Map of Asiatic Turkey,” by the German Professor H. Kiepert; the former being the outcome of eight years’, the latter of not less than thirty years’ work, and both of them giving the results of the latest explorations.

Central America.—The following figures will give an idea of the rate at which the canal works at Panama are proceeding: During January, 1884, 580,000 cubic metres were excavated; in February, 483,657; and in March, 615,851. A cubic metre is 1,308 cubic yards. The total quantity of excavation to be done in a length of 46-56 miles is estimated at 100,000,000 cubic metres, but will probably be far greater. At the end of March, 1884, 4,590,022 cubic metres were excavated. It is confidently hoped that the whole work will be finished in 1888, if the engineers succeed in overcoming the great difficulty presented by the river Chagres, which cuts the line of the canal nearly at right angles. The stream will be arrested by an enormous dike across a valley, and out of the reservoir so constructed the overflow will be led by two artificial channels. Another difficulty appears in the necessity of making a cutting 110 to 120 feet deep, and 400 feet wide at the top. Yet the great mechanical skill of the leaders of the enterprise, and the gigantic power of the machines employed, will undoubtedly overcome these and similar obstacles.

North America.—In 1883, M. Napoleon Comen called the attention of the Geographical Society of Quebec to the supposed existence of a great lake between Hudson Bay and Labrador, and the society at once procured the money necessary for the equipment of an exploring party, in charge of John Bignell and Mr. A. J. Lowe. The main expedition was, in June, 1884, preceded by Mr. F. H. Bignell, of Quebec, who accompanied by nineteen men, with great difficulty reached the northern boundaries of the Province of Quebec, the water-ashed between the rivers flowing into Hudson Bay and those flowing into Lake St. John and the St. Lawrence. The creek, however, is very small, nowhere more than six to eight feet in height, and at times most difficult to trace.
at all. Less than ten miles from this water-shed, or 850 miles from Lake St. John, the party reached Foam Bay, one of the two arms into which a long, narrow peninsula divides the southwestern extremity of the great Lake Mistassini, the very one referred to by M. Comeau. Eighteen miles farther on the lake, they arrived at a Hudson Bay Company’s station, and here provisions were left for the main expedition. From September 10 to 17, Mr. Bignell voyaged on the great lake, making 120 miles, without reaching its main body. It seems to stretch toward the northeast, how far could not be ascertained. Probably it is an expansion of Rupert river, as the great western lakes are an expansion of the St. Lawrence. Deep and numerous bays cut into the low-lying shores; beautiful and often large islands offer places of refuge, when the sea is running high; and the deep waters of the lake, in many respects so like Lake Superior, swarm with trout, salmon, pike, pickerel, perch, and various other fish. The surrounding region is well wooded; birch, poplar, balsam, and spruce being common, but yielding no merchantable timber. The soil rests on a limestone foundation, and is well suited for agricultural purposes, while outcropping rocks show promising mineral indications. Potatoes and other roots are raised at the Hudson Bay post; peas yield a fine crop, and oats will undoubtedly ripen during the short but warm summer. The climate is comparatively mild, the temperature ranging from 30° below to 100° above zero, and the Indians are peaceable, strictly honest, and of fine physique, but dirty and supersti- tious, though nominally Christians. The chase is dangerous, as wolves and black bears of unusual size and ferocity are common. On his return trip, Mr. Bignell failed to meet the main expedition, but it is believed they have arrived safely at the Hudson Bay Company’s post.

The full reports of Capt. Jacobson’s travels in northwestern America (1881–’88) have appeared in print. They give detailed accounts of excursions into Alaska, hitherto chiefly known through Mr. Stoney’s and Schwatka’s interesting explorations.

South America.—A member of the German expedition to South Georgia, Dr. C. von Stein- ner, went, in February, 1884, from Montevideo to Asuncion, with the intention to start in April for Cayabá, in the Brazilian province of Matto-Grosso, in order to pass along the river Xingu, still unexplored, as far north as the Amazon. In the company of his brother and Dr. Clans, and with an escort of Brazilian sol- diers, he left Ouyába on the 26th of May, and arrived a week later at Rosario. On the 28th of June, Aldes dos Bacairis, near Rio Paraná- tinges, was reached, and, in spite of troubles caused by the rough soldiers, the observations had proved of great interest, and important corrections of the maps hitherto drawn had been made. The region through which they traveled is described as a campo cerrado, and appears much like a neglected orchard. A dispatch of October 81 said that the party had arrived safely at Pará. Detailed information has not been received since the 20th of July. At that date the explorers were going down the river Batary.

Fears were entertained that Mr. Richard Payer had met with some serious difficulties during his explorations of the region forming the water-shed between the Orinoco and its Amazon, as he had not been heard from in six months. Letters have, however, been received, dated February and August, 1881. He gives no account of the results of his work; but it seems that his main efforts during travels from 1881 to 1884 were concentrated on the explora- tion of the tract between the Urugrinerá’s and the Orinoco’s sources, and that he succeeded in gaining a full and detailed knowledge of this hitherto unknown district, which will make publication of accurate maps possible. Mr. Payer gives a vivid description of the unhealthy condition of Manao, and declares that all ideas of colonizing must be abandoned.

GEORGIA. State Government.—The following were the State officers during the year: Governor, Henry D. McDaniel, Democrat; Secretary of State, N. C. Barnett; Treasurer, D. N. Speer, succeeded by R. V. Hardeman; Comptroller, William A. Wright; Attorney-General, Clifford Anderson; State School Commissioner, G. J. Orr; Auditor-General, James Jackson; Associate Justices, Martin J. Crawford and Alexander M. Speer.

General Condition.—The Governor says:

Our crops have not met the expectations of those dependent upon the rewards of agriculture; but there has been no disastrous failure in any section of the State. Improved methods of husbandry, increased in- dustry and thrift, and the steady tendency to increase diversity of crops, have kept the farming interest fairly prosperous. There has been a gratifying increase in manufactures. Industrial enterprises are constantly springing up and furnishing more varied means of honest livelihood, and adding to the number of skilled artisans. We have not escaped the depression which has affected manufacturing interests throughout the Union, and the effects of the financial panic of the past spring and summer have been severely felt by the manufacturing commerce and finances. Yet the strain has been admirably borne, and there has been no such increase in the number and amount of failures as to destroy, or se- riously impair, confidence. Crime has not increased, while the laws have been vigorously enforced. There has been a perceptible increase in the number of convic- tions and executions of the death-sentence, but this is attributable to increased vigilance on the part of officials of the courts, sustained by an enlightened public opinion. We may not hope to suppress crime altogether. No people have lived under conditions which rendered such a result attainable. But we may hope to render punishment more certain, and protec- tion to life and property more efficient.

Finance.—The balance in the treasury, Octo- ber 1, 1882, was $690,472.15; receipts for the ensuing year, $1,827,061.64; disbursements, $1,487,384.41; balance Oct. 1, 1888, $589, 139.38; receipts for the ensuing year, $1,553, 290.88; disbursements, $1,924,259; balance
The entire expenses, throughout the State, including sums paid to county school commissioners, amounted to $29,687.39, about $1 of 6 per cent. of the whole amount—leaving about $8 per cent. of the fund which was paid to the teachers.

The school fund of 1884 has not been ascertainment definitely, but the State School Commissioner estimates it to be about $888,588.11. He also assumes the enrollment for 1884 to be 500,000, and average attendance 190,000. The cities and counties, under local laws, raised by taxation in 1888, $147,588.73—making the entire public school fund from all sources, for that year, $508,172.66. The amount from all sources, received by county officials for disbursement for school purposes since the present system was inaugurated, is $3,705,260.27.

In the several departments of the State University at Athens, 204 students matriculated during the year; in Franklin College, 127; in the State College of Agriculture and the Mechanic Arts, 66; in the law department nine, and post-graduates two; in the medical department at Augusta, 125; in North Georgia Agricultural College, 146; in South Georgia Agricultural College, 130; in Southwest Georgia Agricultural College 106; in Middle Georgia Military and Agricultural College, 890. Total in the university and the branch colleges, 1,091. The report of the Financial Committee shows that there were received during the last collegiate year, including $8,555.41 on hand July 9, 1888, $53,575.90. During the same period, they were expended $48,396.84—leaving a balance, July 5, 1884, of $5,079.06.

Lunatic Asylum.—The number of patients in the Lunatic Asylum on Oct. 1, 1884, was 1,297; white males, 422; white females, 466; colored males, 174, and colored females, 185. The number on Oct. 1, 1882, was 797, showing an increase during two years of 490. The average number under treatment, during the past year, was 1,179; whole number treated, 1,560. Average cost per annum of each patient, $196.90.

The work of enlargement of the asylum has progressed as rapidly as practicable. The building for colored patients, containing about 500 rooms, has been occupied for several months. The convalescent building for females is near completion, and considerable progress has been made on that for males. These buildings will accommodate, perhaps, 1,500 patients.
PELHAM.—The number of convicts Oct. 20, 1884, was 1,877 (an increase of 135 over 1882), leased for twenty years from April 1, 1879, to three companies. The death-rate for the year among the convicts was less than 2 per cent.

Deaf and Dumb and Blind.—During the year the number of pupils in the Institution for the Deaf and Dumb was 98 (of whom 65 were white and 31 were colored). The entire expenditure by the State for their maintenance was $15,667.74. The attendance at the Academy for the Blind was 71 (of whom 35 were white males, 29 were white females, 6 were colored males, and 1 a colored female).

Gubernatorial Recommendations.—The Governor in his message recommends the establishment of savings-banks, the revision of the laws relating to the State banks and private bankers, the encouragement of volunteer military companies, and the amendment of the Constitution.

Political.—At the State election, on the Ist of October, the Democratic ticket was chosen without opposition. The result of the voting on the 4th of November was declared as follows: Democratic presidential electors, 94,667; Republican, 48,603; scattering, 340; Congressmen, 10 Democrats. The Legislature, almost unanimously Democratic, convened on the 4th of November, and adjourned, on the 20th of December, to the second Wednesday of July, 1885. On the 18th of November, Joseph E. Brown, Democrat, was re-elected United States Senator. A general local-option bill passed the Senate by a vote of 26 to 12, but, reaching the House late in the session, it was by the filibustering of the minority carried over to July. It provides for an election in any county, city, or precinct, where a small percentage of the voters ask for it; except in counties or precincts where a prohibition law is already in force. It makes the most stringent provision for the carrying out of the law, and provides severe penalties for its infraction. Under special local-option laws, more than ninety of the counties in the State already have either partial or total prohibition. As a rule, the advocates of prohibition are from rural constituencies or from the small towns, while its opponents are usually from the larger cities.

GERMANY, an empire in Europe, formed by the union of the German states, consummated on May 4, 1871, when the Constitution of the German Empire replaced the articles of confederation between the North German states and the treaties by which the Grand Duchies of Baden and Hesse and the Kingdoms of Bavaria and Wurttemberg entered the League during the Franco-Prussian War. King Wilhelm I was proclaimed German Emperor from Versailles on the 18th of January, 1871, upon the successful termination of the war with France. He was born March 29, 1797, and ascended the Prussian throne on the death of his brother, January 3, 1861. The heir-apparent is Friedrich Wilhelm, who was born October 1831.

The sovereign powers of the confederate states forming the empire are vested in the Prussian crown and the Federal Council, the concurrence of the Parliament, orstag, elected by universal suffrage, is necessary to the exercise of certain functions. This single assembly possesses, also, certain rights of control over the acts of the Government. The declare war, if not merely defensive, the Emperor must have the consent of the Reich, or Federal Council, in which body, jointly with the Reichstag, or Diet of the empire, are vested the legislative functions of the empire. The Bundeasrath represents the individual states, and the Reichstag the German nation. The members of the Bundeasrath, sixty-member, are appointed by the governors of the individual states for each session, while the members of the Reichstag, 397 in number, are elected by universal suffrage and by ballot for the term of three years. The Bundeasrath sits over the Chancellor of the Empire, who, as representative of the Bundeasrath, has the right to interpose in the deliberations of the Reichstag. Both bodies meet annually, together by the Emperor. All imperial laws must receive the votes of a majority in both houses. And after that the assent of the Emperor, which must be countersigned by the Chancellor, is still necessary to give effect. The Chancellor of the Empire, Prince von Bismarck, fills the posts of President of the Council of Ministers, President of the Foreign Affairs, and Austrian Minister of Commerce. In the Foreign Affairs his chief subordinate is von Hatzfeldt, Secretary of State, who is Minister of State in Prussia. The Secretary of State for the Interior is von Bortz; the Chief of the Admiralty is Lieut.-General Caprivi, who succeeded Admiral von Sacken on his retirement, March 3, 1881. The Secretary of the State for Justice is Dr. von Schellendorf; Financial Secretary of State, von Burscheid; Chief of the Post-Office, Dr. Stephan; Minister of Railroads and Prussian Minister of Works, Dr. Maybach.

The Prussian ministry is composed of the following: President, Prince Bismarck, Minister of Foreign Affairs and of Commerce; Vice-President, von Puttkamer, Minister of the Interior; Public Works, Maybach; Agriculture and Forestry, Dr. Lucas; Justice, Friedberg; Ecclesiastical Affairs, von Gain; Finance, von Scholtz; War, Lient.-General von Schellendorf; without a post, Count von Hatzfeldt-Wildenburg.

Area and Population.—The area and population of the confederate states forming the German Empire were returned in the census of November 1, 1880, as follows:
GERMANY.

<table>
<thead>
<tr>
<th>States</th>
<th>Square Kilometres</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bavaria</td>
<td>48,037</td>
<td>7,279,111</td>
</tr>
<tr>
<td>Baden</td>
<td>16,649</td>
<td>3,214,138</td>
</tr>
<tr>
<td>Brandenburg</td>
<td>19,058</td>
<td>1,871,118</td>
</tr>
<tr>
<td>Hamburg</td>
<td>13,101</td>
<td>1,730,924</td>
</tr>
<tr>
<td>Oldenburg</td>
<td>7,611</td>
<td>868,540</td>
</tr>
<tr>
<td>Anhalt</td>
<td>13,036</td>
<td>857,465</td>
</tr>
<tr>
<td>Mecklenburg</td>
<td>10,568</td>
<td>802,577</td>
</tr>
<tr>
<td>Schwarzburg</td>
<td>9,278</td>
<td>782,149</td>
</tr>
<tr>
<td>Thuringia</td>
<td>6,140</td>
<td>667,475</td>
</tr>
<tr>
<td>Saxony</td>
<td>8,980</td>
<td>845,857</td>
</tr>
<tr>
<td>Rhineland</td>
<td>2,495</td>
<td>767,025</td>
</tr>
<tr>
<td>Schleswig-Holstein</td>
<td>1,383</td>
<td>691,086</td>
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<td>Brandenburg-Kulmain</td>
<td>1,966</td>
<td>574,174</td>
</tr>
<tr>
<td>Rhineland-Westphalia</td>
<td>2,347</td>
<td>537,559</td>
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<tr>
<td>Saxony-Saar-Rhine</td>
<td>869</td>
<td>456,134</td>
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<tr>
<td>Hesse</td>
<td>1,111</td>
<td>358,282</td>
</tr>
<tr>
<td>Schleswig</td>
<td>818</td>
<td>305,728</td>
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<tr>
<td>Bavaria-Lake</td>
<td>228</td>
<td>225,571</td>
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<tr>
<td>Saxony-Lower</td>
<td>5,277</td>
<td>130,545</td>
</tr>
<tr>
<td>Mecklenburg-Neustrelitz</td>
<td>535</td>
<td>105,728</td>
</tr>
<tr>
<td>Mecklenburg-Merseburg</td>
<td>409</td>
<td>62,669</td>
</tr>
<tr>
<td>Thuringia-Wartburg</td>
<td>14,000</td>
<td>1,665,570</td>
</tr>
</tbody>
</table>

Total number of males was 22,185,483, 23,048,626.

The population of the empire was divided as to religion as follows: Protestants, 529; Catholics, 18,283,851; nonsects, 363,790; others, 80,615.

The number of persons engaged in the various classes of occupations was: Agriculture, stock-raising, and gardening, 18,840,818; forestry, hunting, and fishing, 687; mining, industry, and construction, 885,080; commerce and transportation, 8; hired labor, 658,294; public municipal and ecclesiastical employments, 11,222,113. The proportion engaged in trade, forestry, and fishing was 42.5 per cent., in industry and mining, 10 per cent.; in agriculture, 5 per cent.; in commerce, and the carrying trade, 10 per cent.; in other occupations, 21 per cent. The number of marriages in 1889 was 955,178; of births, 1,244,002; of deaths, 525,495.

Following cities contained over 100,000 inhabitants in 1888: Berlin, 1,122,380; Hamburg, 835,959; with suburbs 410,157; Breslau, 293,025; Munich, 230,828; Dresden, 223,818; Cologno, 144,772; Königsberg, 109,909; Frankfort-on-the-Main, 186,819; r, 122,843, with Linden, 145,257; Stuttgart, 73,003; Bremen, 112,465; Dantec, 108,147; Rostock, 104,471. The total emigration registered from 1885 to 1889 inclusive was 815,374. The total emigration registered from 1885 to 1889 inclusive was 815,374.

1,471 to Africa, and 192 to Asia. The total emigration from Germany since 1820 is estimated at 4,500,000 persons, of whom the United States received 8,250,000. The number of emigrants in 1875 was 30,778; in 1876, 28,888; in 1877, 21,964; in 1878, 24,217; in 1879, 28,827; in 1880, 106,190; in 1881, 210,547; in 1882, 186,669; in 1883, 186,118. The number of emigrants in 1888 who renounced German nationality was 48,588; in 1891, 47,720; in 1890, 88,260. Of the emigration of the three years 1881-83, 418,000, or 62.6 per cent., came from North Germany. The largest exodus was from West Prussia, Pomerania, and Mecklenburg, where 47 per cent. of the population emigrated. Posen lost 8.5 per cent. of its inhabitants. In East Prussia and the industrial districts of the Rhine Province, Silesia, and Alsace-Lorraine, less than 4 of 1 per cent. of the population left their homes.

Commerce.—The total value of the imports of the Zollverein in 1888 was 3,363,000,000 marks of merchandise and 28,400,000 marks of specie, as compared with 8,128,800,000 marks of merchandise and 38,800,000 marks of specie in 1887. The exports of merchandise in 1888 were 3,290,000,000 marks, against 3,188,300,000 in 1887; the exports of specie 65,000,000 marks against 56,500,000. The imports of articles of consumption in 1888 amounted to 1,166,200,000 marks, the exports to 718,800,000 marks; imports of raw materials 1,025,700,000 marks, exports 598,400,000; imports of manufactured products 654,700,000 marks, exports 1,714,600,000; imports of miscellaneous articles 485,900,000 marks, exports 308,700,000. The value of cereals imported was 891,000,000 marks, exports 108,400,000; of fermented liquors imported 45,500,000 marks, exports 34,400,000; of sugar, etc., exported 259,100,000; foreign and colonial produce 178,300,000; of tobacco imported 28,000,000 marks; imports of wool, 85,400,000 marks; exports 218,500,000. The exports of cereals were 42,000,000 marks, exports 76,400,000; exports of raw materials 85,800,000 marks, exports 60,400,000; imports of raw metals 47,500,000 marks, exports 64,300,000; imports of hides, skins, and leather 284,300,000 marks, exports 164,600,000; imports of textiles materials 527,200,000 marks, exports 168,400,000; imports of lumber, 110,900,000 marks, exports 44,300,000,000. The value of the imports of pottery and glass was 81,000,000 marks, of partly manufactured metals 91,400,000, of metal manufactures 194,700,000, of machinery 149,600,000, of leather manufactures 181,200,000, of yarns 118,400,000, of textile manufactures 678,300,000, of rubber-goods and oil-cloths 20,300,000, of paper manufactures 62,100,000, of wood and straw manufactures 57,800,000, of jewelry and art-manufactures 93,500,000, of books, etc., 41,200,000. The principal manufactured articles imported were, yams of the value of 291,
600,000 marks, textile manufactures 109,900,000 marks, machines 39,000,000 marks, and jewelry and art-products 19,800,000 marks. The imports of fertilizers and waste materials amounted to 88,400,000 marks, exports 21,200,000; the imports of drugs, coloring matters, and chemicals to 196,700,000 marks, exports 212,600,000; the imports of guns, fats, and oils to 220,800,000 marks, exports 69,800,000. The export of sugar increased from 1,373,999 quintals in the season of 1879-80 to 2,972,151 in 1880-81, 3,193,789 in 1881-82, 4,769,879 in 1882-83, and 6,074,960 in 1883-84.

The export and the import trade of 1888 showed a considerable increase in quantities as well as in values in comparison with 1882. The increase in the imports was principally in animals and meat, fish, rye, maize, malt, coffee, tea, wines, coal, petroleum, ores, lumber, hides and skins, leather and its manufactures, cotton, hemp, jute, cotton and linen yarns, silk, silk mixed goods, feathers for trimmings, and gold and silver wares. There was a falling off in the imports of hops, eggs, wheat, oats, barley, legumes, fruit, vegetables, hops, tobacco, iron, rags, flax, silk cocoons, wool, woolen yarn, linen, and woolen cloths. There was an increased export of animals, animal food products, wheat and oats, potatoes, flour, fruit, sugar, beer, wine, fuel, chemical products, glass and pottery, iron, lead, hardware, hard-wood and manufactures thereof, fine-wood manufactures, paper, fine leather and leather manufactures, woolens, cotton laces and embroiderries, linen and cotton garments, feathers, machines, instruments, time-pieces, fire-arms, and gold and silver wares. There was a decline in hops, high-wines, alizarin, oils, yarns, and silk mixed goods.

The reports of the factory inspectors for 1888 show that industry was flourishing. The sugar-mills, distilleries, breweries, flour-mills, coal-curing and furniture-shops were especially prosperous.

Navigation.—The number of vessels entered at German ports in 1882 was 33,288, tonnage 8,440,569; cleared 53,865, tonnage 8,480,594.

Of the tonnage entered 4,048,917 tons were under the German flag, of the tonnage cleared 4,139,547.

The number of entries with cargoes was 43,214, tonnage 7,532,677; clearances 38,901, tonnage 6,225,622. The number of steamers entered was 15,350, tonnage 6,575,064, of which 8,779, of 2,563,210 tons, carried the German flag; the number cleared 15,622, tonnage 8,881,923; the number carrying the German flag 8,784, tonnage 2,590,856. The tonnage engaged in foreign trade outside of Europe was 2,174,894 tons, of which 67.7 per cent. was monopolized by the trade with the United States.

The number of steamers in the merchant navy, not counting those of less than 15 tons' capacity, in 1883 was 335, of 811,204 registered tons net, employing 10,937 sailors. The tonnage in 1882 was 9,516 tons, in 1881 8,657.

The number of sailing-vessels with a capacity of over 22 tons was 4,970, against 4,864 in 1879, the tonnage 1,268,650, against 1,120,195 registered tons.

Railroads.—The total length of German railroads in 1884 was 30,187 kilometres, of which 10,609 kilometres were double-tracked, not including 1,688 kilometres of industrial lines. There were 30,787 kilometres belonging to the state, 1,082 kilometres administered but not owned by the state, and 4,888 kilometres owned and administered by companies.

Post and Telegraphs.—The postal traffic, including that of Bavaria and Wurttemberg, which have separate post-offices, was in 1883 as follows: Number of letters, 732,421,890; of postal cards, 206,463,350; of inclosures under sealed bands, 156,041,100; of circulars, 18,425,950; of newspapers, 497,860,270; money-packets without declaration of value, 84,397,640; with declaration of value, 8,334,040; money-letters with declaration of value, 5,008,480; postal money-orders, 53,688,547; total value of money forwarded, 77,167,076,420 marks; total weight of packages carried, 371,083,430 kilogrammes.

The total length of the state telegraph lines, including those of Bavaria and Wurttemberg, in 1888 was 79,318 kilometres; length of wires, 273,535 kilometres; the number of private internal dispatches, 12,896,735; of international dispatches sent, 3,915,894; the number received, 2,390,479; total number of dispatches, 18,877,606.

The receipts of the postal and telegraph service in 1882-83 were 170,468,918 marks; the expenses, 146,850,087 marks.

The Army.—The effective of the German army on the peace footing in 1884 was 18,115 officers and 427,274 men, with 81,598 horses. The Prussian army counted 13,996 officers and 880,629 men, the Bavarian army 2,311 officers and 50,224 men, the Royal Saxon army 1,188 officers and 27,008 men, and the Wurttemberg army 772 officers and 18,185 men. The staff numbered 2,032 officers; the 484 battalions of the Infantry of the line, 9,539 officers and 378, 1,922 men; 30 large battalions, 424 officers and 11,120 men; 975 cadets of Landwehr battalions, 826 officers and 4,764 men; total infantry, 10,279 officers and 394,766 men; 465 squadrons of cavalry, 2,558 officers and 64,693 men; 341 batteries of field artillery with 1,364 guns, 1,801 officers and 84,817 men; and 31 battalions of fortress artillery, 729 officers and 18,349 men; 21 battalions of pioneers, 406 officers and 10,840 men; 16 train-battalions, 80 officers and 4,906 men; and special formations 310 officers and 954 men.

The war establishment of the German army can muster a field army of 19,391 officers and 744,031 men, with 242,415 horses; 4,796 officers and 206,614 men of depot troops, with 81,873 horses; and 11,240 officers and 416,083 men of garrison troops, with 85,943 horses; total war effective, 35,427 officers and 1,455-
GERMANY.

m, with 312,781 horses. The surgeons,
arian, paymasters, armorers, sadder,
their employees, make about 27,000 more.
undustorm and special formations are not
in these figures.

German infantry are armed with the
rifle, which has a range of 1,600 metres
e a bullet weighing 25 grammes. Ex-
ents have been made with a smaller cali-
; a suitable kind of powder has not
vented. Experiments with the Wetterli
ner magazine rifles have failed for the
season, the cartridges being too small to
much effect. Every company is pro-
with a number of trenching spades,
play an important part in offensive as
defensive tactics. An aeronautical de-
ent of engineers was formed in 1884.
portant change in cavalry equipment
same object as the recent conversion
Russian cavalry into dragon soldiers,
ated infantrymen. In future the Ger-
a cavalry will carry their carbines slung
air and their sabers suspended to
lie, while the dragoon of horse and man
much lightened.

navy.—The German navy has 13 line-of-
ships, of which 7 are ironclad frigates
5 guns, and 6 ironclad corvettes with
. The cruisers are 11 corvettes with
10 with open decks, 5 gunboats
the Allatross system, and 5 other-
the first class. The coast-guards
manned ship, 18 armoured gunboats, 11
boat, 4 steamers for laying torpedo-
and 1 gunboat of the second class.
are 8 avisos, 2 transports, and 11 school-
f various kinds.

Reichstag in its session of 1884 voted
000 marks for increasing the navy, es-
s in the matter of torpedo boats. The
ministry considers 150 torpedo - boats
ry for the defense of the German coasts.
ironclade are provided with apparatus
n torpedoes. A special torpedo-
ision was ordered by the July
naval manoeuvres at Kiel in 1884 the
ents in torpedo tactics were the lead-
. Every squadron is to be accom-
 a number of torpedo-boats, which
expeditions will be conveyed to the
operations in special transport-ships.
demonstrated in the manoeuvres that no
safe from torpedo attacks when at an-
a coast plentifully supplied with tor-
that blockade-vessels can be fol-
and struck when in motion, and that
\s with water-tight compartments are
unmanageable by a blow from a tor-
The German navy possesses the mo-
torpedo in the world. It was invented
Austrian naval officer, who sold the
the German Government for 180,000

The weapon has been perfected under
action of the naval authorities until it
ome the most accurate and destructive
of all the fish-torpedoes. It is directed in its
course by electricity, while an automatic ap-
paratus keeps it at the desired depth.

Finances.—The budget for 1883–84, approved
March 2, 1883, makes the total receipts 590,-
456,684 marks, balanced by the expenditures,
of which 587,297,305 marks are under the
head of permanent and 53,259,329 are clas-
sed as extraordinary. In the budget for 1884–85,
passed July 2, 1888, the receipts from customs
are placed at 196,400,000 marks; from beet-
sugar 46,865,000 marks; from salt 37,329,800
marks; from tobacco 13,940,920 marks; from
spirits 85,926,900 marks; from malt 15,791,000
marks, the common indirect taxes from ter-
tories outside of the Zollverein 6,355,710
marks, the particular taxes 1,882,980; total
excise and customs duties, 363,874,110 marks.
The receipts from stamps on playing-cards are
taken at 1,014,700 marks; from stamps on
bills of exchange, 8,312,100 marks; from stamps
on bonds and certificates, notes, accounts,
and lottery tickets, 12,109,880 marks; the net
receipts from posts and telegraphs, 25,532,198
marks; from railroads, 18,890,000 marks; re-
ceipts from the invalid fund, 28,665,190 marks;
the surplus of 1882–88, 15,825,000 marks;
extraordinary receipts, 34,592,720 marks;
matricular quotas, 88,702,786 marks. The to-
tal expenditures are fixed at 590,519,844 marks,
of which 544,837,865 marks are under the
head of permanent and 46,491,476 extraordi-
ary. The permanent expenditures for legis-
lation are 407,670 marks; for the Imperial
Chancellery, 126,970; for foreign affairs and
the consulates, 6,295,418; for the army, 388,-
872,490; for the navy, 26,008,896; for the
administration of justice, 1,824,097; for
financial administration, 90,890,406; for the
Imperial Railroad Office, 310,595; for the
debt of the empire, 16,927,500; for the audit of
accounts, 529,073; for pensions, 20,160,404; for the
invalid fund, 28,665,120 marks. Of the extraor-
dinary expenditures, 25,732,678 marks were
for the army and 10,120,900 marks for the
navy. A supplementary credit of 19,092,439
marks was voted to the navy, April 12, 1884,
of which 18,730,000 marks were for extraordi-
nary expenditures.

The budget for 1885–86, as fixed by the
Bundesth, amounts to 621,186,051 marks,
the ordinary expenditures at 556,314,286 marks,
and the extraordinary at 64,881,765 marks.
The revenue is estimated at 44,671,996 marks
less than the total expenditures, which amount
is to be raised by a loan.

A debt of 370,000,000 marks has been
contracted since 1877. An addition of 18,192,720
marks was authorized in 1883, and one of 18,-
790,000 marks on April 12, 1884. The amount
of bank-notes of the empire in circulation in
1884 was 144,845,570 marks.

The invalid fund in 1884 amounted to 515,-
616,814 marks, the fortress construction fund
to 88,885,000 marks, the construction fund
of the house of Parliament to 32,459,990 marks,
the war fund to 120,000,000 marks, not counting, in the case of the first three, the cash on hand and drafts on Frankfort.

Notwithstanding increased receipts from the salt, beer, and spirit taxes, the accounts of 1884 were made up with a deficiency of 14,000,000 marks. In the budget for 1885 an increase of 41,000,000 marks in the matriculable contributions is asked for. The expenditures show an increase of 18,000,000 marks in the occasional and 8,000,000 marks in continuous class. The sugar-tax showed the greatest falling off. Deputy Richter attributed the deficit to the continual increase of the military and naval budgets, which had been augmented by 31,000,000 and 28,000,000 marks respectively. Deputy Bebel, leader of the Social Democrats, saw in the budget the breakdown of the Chancellor's financial policy, and since positive proposals were demanded from his party, suggested the shortening of the period of military service and hoped that Prince Bismarck would convert the Congo Conference into a conference for peace and disarmament.

**Educational Policy.**—In January a debate took place in the Prussian Landtag on a proposition of Reichensperger to restore the article of the Constitution of 1850 which secured to religious societies the independent control of their organization. This article was stricken from the Prussian Constitution in 1875. Its re-enactment would be identical with the entire abrogation of the May laws. After the rejection of this bill, Windthorst complained that, when the Catholics proposed a general measure, it was not accepted on account of its universal character; and when they offered proposals dealing with evils in detail, they were told that special laws are troublesome and excite without remedy. When they demand only their rights, they should not be asked for concessions in return.

To the demand for the recall of the two archbishops, who were not anointed like the Bishops of Limburg and Münster, Minister Gossler justified the decision of the Government not to recall Cardinal Ledochowski, on the ground of the mingling of religious and political tendencies in the Grand Duchy of Posen.

**The Prussian State Council.**—In 1884 the Council of State in Prussia, the body that, under the old bureaucracy, constituted the King's Privy Council, was reestablished. In the meantime, Prince Bismarck from the Prussian Ministry, and as a means of impressing his policy on the Legislature and on the Cabinet, in which frictions between himself and his colleagues sometimes occurred. It would take the place in regard to his projects of social reform of the Economic Council, which had failed to impress the elected representatives of the people with its authority to speak in the name of the economic interests of the country. The function of the re-established State Council was to discuss bills prior to their introduction in the Prussian Parliament or the Reichstag, and also to consider proposed administrative measures. The Prince was brought into relations with the government of the country by his appointment as President of the State Council. Bi was made Vice-President. The members of their office are the Ministers o field-marshals, the Secretary of State President of the Court of Accounts, and the chiefs of the private, civil, and military offices. The King appointed about 100 men who were nearly all selected from the active supporters of the Government, the labor of them belonging to the class of proprietors, and a large proportion of important offices in the state. Outside aristocratic and bureaucratic elements were a sprinkling of professors, clergymen, chancellors, and local officials. The State met for the first time, October 25. The were formed for (1) foreign and military (2) agriculture, (3) justice, (4) finance, commerce and industry, (5) ecclesiastical, and medical affairs, (6) domestic.

**The Meeting of the Three Emperors.**—In September the Emperors of Germany, Austria, and Russia, accompanied by Ministers of Foreign Affairs, came together at the castle of Skierneviice in Russian Poland near the boundaries of the three countries. Ministers de Giers, Kalnoy, and Bismarck previously held a conference at Friedreich. The conclusions arrived at there were not formally sanctioned by the three monarchs. The were the subject of much speculation in European press. The meeting gave indication of the cessation for the present of tension between Austria-Hungary and Russia. In his address at the opening of the Reichstag the Kaiser declared that the friendly relations were renewed at the meeting were insured for a long time, and furnished a strong guaranty for the continuance of peace. Another reason for the conclusion of an agreement of vigorous action in opposition to reforms and conspiracies. Soon after the session at Skierneviice, thousands of Russians were expelled from Germany. On the 1st of July 1885, identical notes were exchanged by the Russian and Prussian Governments, in which the Russian Government undertook to forward to the Emperor of Austria any correspondence which might lead to the apprehension of any Russian or Austrian official of any nation or attempted assassination; (3) the giving or having influence with the Emperors with reference to the prevention of political but met with opposition, especially on the part of England.
dial relations with Russia were the appointment in the early part of of Prince Orloff, who is a persons Bismarck, to the Berlin embassy as to Saburoff, Baron Mohrenheim be- lerred from London to Paris to take loff's place.


ties of the Anti-Socialist Law.—The de- be Reichstag with respect to the con- for two years of the anti-Socialist d likely to be an adverse one, sinceervative fractions and the National ad no majority, and the Center party, id the deciding votes, had taken a nst this as well as other exceptional. During the debate Richter, who it repression drove the Social Demo- the arms of secret conspirators and agitators, described the recent dis- t yet made public, of the Niederwal- mark announced his determination Parliament in case the bill was re-This alternative before them, 98 crical voted on the second and de- ling of the bill, May 10th, with the nt, while 45 voted with Windthorst e prolongation, and 25 members of united Liberal Opposition deserted er and voted for the bill, which was 189 votes to 157. By this enact- of October 31, 1878, against the aims of the Social Democracy re- until Sept. 30, 1886. An amend- Windthorst to abrogate the clause Social Democratic meetings was as the committee, but afterward with the mover.

atives Law.—Eugen Richter, the Prus- 

eral attempt, first made during the in committee of the anti-Socialist a motion to request the Government i a bill against the abuse of explosive elative. With a brief speech, Richter l, the Government had in prepara- act was passed June 9th. The re, importation, purchase, sale, or of explosives is prohibited to all ot specially authorized by the police. it trade in explosive substances is subject to certain formalities that authorities to follow the shipments transport through the empire. Per- a license to manufacture or sell a register so as to be able to give an the police at any moment of the 1 disposal of their goods. Certain gnrpowder are excluded from the of the act. The penalty for the ille- ion of explosives, or for making, or giving them to others without a rant, is imprisonment at hard labor ne to five years; for causing danger property by their use, imprisonment bor, which shall not be for less than in the case of serious bodily injury resulting, nor less than ten years if death ensue. Conspiracy to commit crimes under the act is punishable with imprisonment for not less than five years. It is a penal offense also to incite by public utterances to the commission of such crimes, or to promise or glorify persons committing them.

The Accident-Insurance Law.—The bill for the insurance of industrial laborers injured or killed at their work, which failed to pass with the sickness-insurance act in 1888, principally on account of the provision to organize the business under the direction of the state, in- stead of leaving it to private companies, was brought in again in essentially the same shape. Prince Bismarck olivated objections by stating that he desired merely a legislative basis for his insurance scheme which could be amplified and improved in the light of experience. He appealed to the deputies to abandon sterile negation and become fellow-shoemakers with him in relieving the people where the shoe pinches, and preventing them from going bare-foot, reminding them that they possessed the right of initiation as well as the power of re- jection, and promising that he would gladly consider any alternative proposals for these ends. The insurance bills he described as the complement of the anti-Socialist law, proving that, while repressing agitation that set class against class, the state had undertaken to better the condition of the working-people. In this year's debates Bismarck created a sensation by enunciating the doctrine of the right to labor in the following words: "If you will give to the laborer the right to labor as long as he is in health, secure to him care when he is sick, secure his support when he is old; if you will do that and not shrink from the sacrifices, and not cry out about state socialism whenever the support of the aged is spoken of, if the state shows more Christian solicitude for the working-people, then I believe that the gentlemen of the Wyden.-law bill (the Social Democracy) will bow down their whistle in vain, that the numbers flocking to them will diminish greatly when the work- men see that the Governments or the legisla- tive bodies mean to care for their welfare in earnest." When called to account by Eugen Richter for propounding so novel and startling a doctrine, he replied: "I recognize a right to labor without qualification, and shall maintain it as long as I am in this place. In that I do not stand on the ground of socialism, which is supposed to have begun with the Bismarck administration, but on the ground of the munici- pal law of Prussia." There is, in fact, a paragraph in the Prussian code, never applied except to the extent of relief works in times of general distress, which prescribes that, "to those who lack the means or the opportunity to earn the support of themselves and their families shall be assigned work suited to their strength and capabilities." The Social Demo- crats brought in a resolution to request the Bundesrat to lay before the Reichstag without
delay a bill which would realize the right to labor proclaimed by the Chancellor.

In the new accident-insurance bill the quota which, in the earlier form of the proposition, the imperial exchequer was to contribute, was left out. The business is organized on the system of mutual insurance between the employers in the industries indicated in the act. All the employers throughout the empire in each branch unite in a trade association. The various industrial establishments are grouped and graded into different classes of risks. All employers must report the nature of their business and the number of laborers they employ to an Imperial Insurance Office at Berlin, which superintends and controls the assessment and payment of damages by the trade associations.

In the investigation of accidents committees of workmen take part. General provisions in the act regulate the amount of damages in cases of injury and death.

The Joint-Stock Law.—A bill was passed by the Reichstag, on the proposal of the Government, which subjects joint-stock companies and Bourse transactions to a strict control. Among other provisions there is one that makes the circulation of false reports affecting the values of stocks an indictable offense. The Government, in another bill, proposed to draw a large revenue from stock-exchange transactions, and at the same time restrain speculation by imposing a tax of 2 per mille on all sales of shares and bonds and other Bourse transactions. By the law passed in 1881, a fixed tax of 30 pfennigs is collected on every cash bargain, and one of one mark on every time or speculation sale.

The Niederwald Anarchist Plot.—After the unveiling of the Niederwald national monument in 1883 it was discovered through the revelations of an informer that a quantity of dynamite had been deposited in a drain-pipe, with the intention of assassinating the Emperor, the Crown Prince, and the other royal persons, high officers of state, and distinguished politicians present. The conspirators were brought to trial at Leipsic in December. The leader, Friedrich August Reindorf, was a compositor, of excellent personal character and popular with his fellow-workmen, but a political fanatic who had frequently been in prison and under police surveillance for political offenses. He was eloquent, and possessed an active and acute mind and a remarkable power of ascendency over the minds of others. The other principals were Rupusch and Kächler, the former a mere boy, who made a confession to the authorities implicating his accomplices, but excusing himself, with the plea that he did not ignite the fuse, as he was appointed to do, but undertook and pretended to do so for the purpose of saving the Emperor's life, and in order to witness the ceremonies without expense. According to his story, Reindorf unfolded the plot in September, 1883, to his fellow-Anarchists at Barmen, where they all resided. Rupusch and Kächler were instured with its execution. They raised the money for the journey with difficulty among themselves. Arriving the day before the dedication of the monument, they deposited the dynamite in accordance with Reindorf's directions. There was four pounds of the explosive in a stone bottle. Rupusch declared that he and Kächler stood together in the crowd over the fuse, and when the imperial party approached he stooped down as though to fire the fuse with a cigar, but that the cigar was not lighted. As Kächler insisted on making another attempt, he said that he secretly cut the fuse. They took up the dynamite and Kächler afterward fired it at Rudasheim near the grand pavilion where a concert was going on, causing a tremendous explosion but injuring no one. Kächler told a similar story in which he played the part of the Savior of the Emperor's life and tried to shift the guilt upon Rupusch. Reindorf made a full admission of the part he was accused of taking in the conspiracy. He said that he had sent Rupusch because he was himself in the hospital confined with a sprained ankle, Kächler going along as a moral support. The object was a demonstration that would show the deep-rooted discontent of the masses and hasten a change of government. He willingly risked his own life and did not regard the sacrifice of the lives of a few princes as a matter of importance compared with the end to be gained. Reindorf had been all over Germany and in various other parts of Europe, and had been expelled from several towns for teaching his revolutionary doctrines. He had held relations with Höidel, who attempted to assassinate the Emperor, and with Most, the editor of the "Freiheit." Reindorf and the other two principals were sentenced to death; Bachmann, one of the same band, who at Reindorf's instigation had exploded a can of dynamite in a restaurant at Elberfeld, and Holzhauser, who was charged with furnishing the dynamite for the Niederwald attempt, were sentenced to imprisonment for ten years. The judges concluded on the evidence that the train had been ignited but only burned to the middle, being moist from the rain that fell during the entire night.

The Kraszewski Trial.—A remarkable political trial took place at Leipsic in May before the Supreme Court of the Empire. Joseph Kraszewski, one of the most distinguished of Polish authors, and a former captain in the Prussian army named Hentch were prosecuted for high treason, their offense consisting in revealing military secrets of the German Government to the French authorities. The Chancellor, in a communication to the war department, made the following statement as to the nature of the conspiracy in which the aged Polish poet and novelist was engaged. A society of Polish military men in Paris was formed in 1884, which had for its object the restoration of the kingdom of Poland, and with that view stud-
tain information concerning the or-

of European armies, to establish re-
pit Polish officers in Austrian, Ger-
Russian service, and to take an active
full European events. The members
this principle with the Garibaldian
in 1866, under Wolowski in the
War of 1870-71, and in the Turkish
the Russian War. They were em-

Colen Samuel, of the statistical
of the French War Ministry, to furnish
on regarding the armies of Europe
3 to 1877, when the bureau was aboli-
Wolowski was then intrusted by Gam-
the formation of an intelligence
which had its chief center in Dresden.
Kraszewski had resided since the Polish
ion of 1866. Kraszewski, speculating
pects of restoring the independen-
through a European convulsion, un-
to obtain information concerning the
military arrangements. He employed
rian Jew, named Adler, who hired
Hentsch for this purpose. The latter
an of insinuating address who was
in army circles and endeavored to
his family by military journalism.
compiled papers on various military
which were transmitted to Paris under
use that they were intended for pub-

military journal. When Hentsch's
information were closed, about 1881,
novied to Vienna, where he offered to
a Russian Government with march-
s of the German army corps to the
and received an offer of 7,000 marks,
sum that Kraszewski had paid him
r. General Feldmann, the Czar's
representative, paid him various small
complained that his information was
le. He also black-mailed Kraszewski,
the latter would give him no more
ried out his threats and betrayed his
r to the German ambassador in
The reports furnished by Hentsch
the method of transporting troops
ern frontier by road and rail, the
fortifications of Metz, the principle
repeating rifle, the method of ob-
serve mounts, the system of field
and telegraphs, etc. Captain Hentsch
Kraszewski were both found guilty and
l, the former to nine years' imprison-
ard labor and the latter to three
half confinement in a fortress.
ernsarz.—The new regulations con-
ceptual nationality and the military
which gave offense to the Dunes of
Holstein, were preliminary to the
ion of similar measures in the impe-
Marshall Manteuffel, the Stadt-
Alasce-Lorraine, issued, September
script affecting the young men of the
noted claim foreign nationality.
by origin or by option having sons
red to naturalize themselves or their
sons when the latter have reached the age
of military service. In case of refusal the
young men will be expelled and will only be per-
mitted to visit their relatives for three weeks
in the year. Young men recognized as for-
egnerees by the option committee must become
naturalized and report for military service, on
pain of expulsion. If a father or his son be
not considered a proper subject for naturaliza-
tion, the son will be expelled. Young men
who have gone abroad with emigration certifi-
cates, that is, the sons of wealthy families edu-
cated in Paris, must serve their time in the
army unless they can prove that they have
received a new nationality, in which case they
will be banished like the others. There are
4,500 families residing in the province, contain-
ing 14,900 persons who are recognized as for-
egnerees. These, the rescript says, might in-
crease until they formed a considerable French
colony, to the detriment of the German army.
A class more obnoxious to the Germans than
those with which the rescript deals is that of
the rich Alsation mill-owners who have taken
up their residence just across the border in
Switzerland, giving the Swiss cities the benefit
of their profuse expenditures. The new build-
ings of the university at Strasbourg, which is
lavishly supported in the hope of cementing
Alasce-Lorraine to Germany, were opened with
pomp and ceremony on the 27th of October.
The Lasker Incident.—In the beginning of Fe-
bruary Minister Sargent handed to Count Hatz-
feld the resolutions of condolence passed by
the House of Representatives at Washington,
after the sudden death in New York of
Prince Bismarck's great antagonist in the
Reichstag, Eduard Lasker. Instead of deliv-
ering these resolutions to the President of
the Reichstag, Bismarck sent them back to
Washington, and instructed Minister von Eisen-
dercher to return them to the House of Repre-
sentatives, with the explanation that they con-
tained an expression of opinion which was at
variance with his own, regarding Lasker's
services in the cause of political progress in
Germany, and that he could not ask the Em-
peror to signify approval of his communicating
to the Reichstag an expression of opinion con-
cerning the internal affairs of the empire which
assigned the deceased deputy a higher position
than he occupied, and which implied that the
progress of the German Empire was in the
direction of political liberty. When attacked
in the Reichstag on account of this unusual
proceeding, the Chancellor said that the Amer-
ican minister could have conveyed the address
directly to the President of the Reichstag in-
stead of through the Foreign Office, that his du-
ties as the highest officer of the realm should
not be confounded with those of a letter-car-
rier, and that the Chancellor of the German
Empire could not be expected to allow himself
to be yoked to the triumphal car of the opposi-
tion.

The Brunswick Succession.—The death in Octo-
ber of Wilhelm, Duke of Brunswick, the last of the German line of Guelphs, created a difficulty as to the succession. The next heir to the throne was Ernst August, Duke of Cumberland, the lawful successor also of his father the late King George of Hanover, dethroned in consequence of the war of 1866. On the death of George V. in 1878, his son issued a manifesto saying that, while bearing for the present the titles of Duke of Cumberland and Duke of Brunswick, he did not waive his claims to the throne of Hanover. By continuing this attitude he made it impossible for the Prussian Crown to recognize his right to the throne of the duchy, nor was he acceptable to the people of Brunswick, who are loyal to the empire and do not wish to see their land become the center of the Guelph movement. Negotiations were begun in 1883, with the object of bringing about a reconciliation between the Duke of Cumberland and the Emperor William, but the Duke refused to make the desired formal abdication of his claim to the Hanoverian throne. On the death of the Duke of Brunswick, Ernst August issued a manifesto, October 18, claiming the homage of the Brunswickers and assuming the government of the duchy, which he promised to govern in accordance with the imperial and provincial constitutions. The Emperor refused to receive the bearer of the Duke's manifesto. The Prussian general at Brunswick, immediately after the Duke's death, issued a proclamation saying that he took command of all the forces in the name of the Emperor. The Duke's estates in Silesia were taken possession of by the Prussian Government. The Council of Regency referred the Duke of Cumberland's manifesto to the Bundestag, without counter-signing it as he requested. On November 4, a circular to the sovereigns and free cities of the empire contained an able presentation of his claims to the succession, and argued that the Emperor had no constitutional power to determine questions of succession. The Federal Council had already resolved not to admit his claims. The Prussian Government did not insist on the theory that the Emperor had been advanced, which would transfer the rights of inheritance in the Hanoverian crown to Prussia. The Emperor proposed that the delegates of the Council of Regents should represent Brunswick in the Bundestag.

The Kadets of the Liberal Faction.—In the spring the Secessionists, who left the National Liberal party on account of Bismarck's policy of protection and state socialism, united with the Progressists to form a single regular Opposition party.

The General Election.—The election for members of the Reichstag took place October 28. Prince Bismarck hoped to secure a parliamentary majority, independent of the warring support of the Center, which enabled him to carry through the protectionist policy in 1878, but has been refused or only partially given to his later schemes. The result of the election showed that his economic policy had gained in popularity, though the Clericals still held the balance of power. The German Liberals, who expected to improve their position by the coalition of the two factions composing the party, suffered from their attitude of pure negation, while the Free Conservatives and the National Liberals, the parties that support the Chancellor's views the most faithfully, each gained a number of seats, and the German Conservatives, who also vote with the Government in the main, made remarkable gains. The National Liberals were expected, as the result of a convention held at Heidelberg in the spring, to unite formally with the Conservatives into a middle party, which would have the Chancellor's policy for its platform and constitute a "Bismarck party sans parrain." This alliance did not take place. The Ultramontanes, Clericals, "Blacks," or Center party, retained their hold on the Catholic constiuencies, and returned in about the same strength as in the last Reichstag. The Poles and Alsatian-Lorrainers sent their distinctive partisans, although the hostility to the empire has abated in Alsace-Lorraine since the introduction of protectionism, and the deputies of the Reichland are more moderate in their sentiments than formerly. The Danes and Guelphs, classed together as "Savages" or Independents, retain their representation, the latter polling more votes than before. The most significant feature in the election was the remarkable gain of the Social Democrats, who doubled their number of representatives. The Socialist vote in 1871 was 128,978; in 1874, 351,592; in 1877, 498,298. In 1877, immediately after the passing of the anti-Socialist law, while the party suffered from the depressing effect of the Hodel and Nobiling attempts, it declined to 487,155. In 1881, the effect of three years' stringent application of the repressive law was to reduce their voting strength to 311,961 ballots. Although their public meetings were forbidden, they themselves expelled from their places of residence in large numbers, many of their orators had been advanced, their newspapers and pamphlets declared contraband and suppressed, and their societies broken up, they were still able to keep up their organization. The result of seven years' rigorous enforcement of the Socialist law has been the increase of the Socialist vote to about 550,000 in 1884. Their main object in entering the Reichstag after the enactment of the law was to address their constituents with freedom that would subject them to criminal prosecution if used out-of-doors. Bebel alone was listened to in the Reichstag for his able and lucid presentations of the condition of the working-class. In the present Reichstag the Social Democrats have a representation that is numerically sufficient to enable them, under the rules of the House, to table motions and command the ear of the Reichstag whenever
they desire. The numerical dimensions of the various factions in the last and in the present Reichstag were as follow:

<table>
<thead>
<tr>
<th>Parties</th>
<th>Elected in 1891</th>
<th>Elected in 1894</th>
</tr>
</thead>
<tbody>
<tr>
<td>German Conservatives</td>
<td>58</td>
<td>77</td>
</tr>
<tr>
<td>Free Conservatives</td>
<td>35</td>
<td>50</td>
</tr>
<tr>
<td>National Liberals</td>
<td>45</td>
<td>49</td>
</tr>
<tr>
<td>German Liberals</td>
<td>165</td>
<td>61</td>
</tr>
<tr>
<td>Social Democrats</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Volkspartei</td>
<td>8</td>
<td>7</td>
</tr>
<tr>
<td>Liberals</td>
<td>98</td>
<td>128</td>
</tr>
<tr>
<td>Peas</td>
<td>18</td>
<td>10</td>
</tr>
<tr>
<td>Independents</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>207</strong></td>
<td><strong>207</strong></td>
</tr>
</tbody>
</table>

The New Reichstag.—The newly elected Reichstag opened its session November 20. In the speech from the throne the colonizing efforts of the Government were calculated to develop commercial connections, and stimulate enterprise in a measure to afford markets for German industrial products and employment for labor. A report upon the transmanar settlements taken under the protection of the German Empire was promised, thus introducing the custom of official communications to the Legislature practiced by the Executive in other parliaments. The first of these reports presented to the Reichstag, to which the name of “White-Book” was given, dealt with Angra Pequeta, and gave the diplomatic correspondence with England with regard to that territory. As a step in the gradual development of the scheme of social reform, proposals were announced for the extension of accident insurance to laborers employed in agriculture and transportation. One of the principal objects made to the measure before it passed was that agricultural labor was not included. An extension of the savings-institutions was also promised. The development of the institutions of the empire rendered necessary the discovery of new sources of income. The attempt to obtain a higher net revenue from sugar was rendered difficult by the depression of the sugar industry, and the agricultural interest involved with it. The vote for President, to which position Von Wedell-Piersdorf was chosen, afforded a test of the strength of the parties. The Opposition parties mustered 199 votes against the 127 of the Liberal Union and the Conservatives, the German Liberals, the Center and associated groups, the People’s party, and the Social Democrat forming the majority. On the 26th the majority carried a bill to pay the members a daily fee and defray their traveling expenses. Bismarck declared that this new attempt to salary deputies was unconstitutional, and would be annulled by the Government. The deputies had free places on the railroads, but they were recently withdrawn by the Ministry because the privilege had been abused. Bismarck avowed that no factions majority in such a kaleidoscopic Parliament could impose upon him, who would not let himself be imposed upon by the whole of Europe. The want of pay was alleged by Stauffenberg to be the cause of scarcity of candidates, and was characterized as an obstruction to the freedom of elections, which was especially prejudicial to the Social Democrats. Bismarck said that he regarded the increase in the number of Socialist deputies as no mishap; the more there were the tamer they would become, and the more they would be governed by a sense of honor, and bring forward positive plans showing how the future of the world and of the constitution shapes itself in their minds. He wished that they would lay their El Dorado on the table of the House. If it were in his power, he would place a province at their disposal. The Social Democracy he regarded as a portentous sign, a mené tekel for the propertied classes, to warn them that all is not as it should be, that the hand of reform can be applied. If the Social Democracy and the dread that it inspired did not exist, the moderate progress in social reforms already accomplished would not have been possible; it was, therefore, useful in its effect on those who otherwise have no hearts for their poor fellow-citizens. The opposition of the Center, Bismarck declared, would not coerce the Government. The ninety-eight members of the Democratic factions be characterized as Republicans, and said he found no difference between a country where the majority can compel the monarch to dismiss his ministers and one under an elective President. To hand over the portfolios to the adverse majority, composed as it was of Conservatives, Clericals, the German Liberals, the Volkspartei, and the Social Democrats, would result in a ministry like that in England under Mr. Gladstone.

On the 3d of December the majority approved Windthorst’s motion for the repeal of the law empowering the Government to expel or interne priests for the unauthorized exercise of ecclesiastical functions, although three weeks before the same measure, passed just before the close of the Reichstag in June, had been rejected by the Federal Council. Bismarck said that the law had not been applied in recent years, but was a useful weapon in case of disturbances in Prussian Poland. The Government had made numerous important concessions to the Curia, for which no returns had been made; and was therefore in a position to wait until it saw the color and stamp of the first Papal concessions, and would not yield a hair’s-breadth.

The Project of Post-Steamsip Subventions.—A proposal to subsidize a double line of steamers plying directly between German ports and eastern Asia and Australia was buried in committee after reaching the Reichstag with the approval of the Bundesrat. Bismarck made all his future colonial projects dependent on the passage of this measure. An annual grant of 4,000,000 marks was asked for. The postal subventions of the German Government amount
at present to about 300,000 marks, distributed among ten lines running between the Hanse towns and American ports. England subsidizes thirty-eight lines at a cost of about £650,000, besides the subsidies received from the colonies. France expends about 26,000,000 francs a year on twenty-one lines in the postal service and 7,460,000 francs in premiums to other lines. The opponents of the bill argued that there are already too many ships on the sea, and that it is no detriment to German commerce to have the carrying-trade done by the English cheaper than Germans could do it, whereas it would be to lock up capital in steamships that require a bonus from the Government to keep them running. The bill was brought in again at the beginning of the next session and referred to a committee.

**Bismarck’s Colonial Policy.**—When the post-steamer project was before the committee, Bismarck unfolded his colonial policy, which had nothing in common, he said, with the artificial methods of colonization pursued by other states. He did not propose to take possession of regions where there were no German interests, and incite by artificial means a German immigration after setting up an administrative system and establishing German garrisons there. His purpose was to extend the protection of the Empire to settlements that grow out of the German nation by the spontaneous enterprise of German subjects and exist in territories that do not stand under the recognized sovereignty of any other power. When Bamberger spoke of dangers of a colonial policy from the jealousy of the great naval powers, the Chancellor declared that he overestimated Germany’s impotence on the sea; that a German alliance would be of great value to England and still more to England’s opponents. France lay before the gates of Metz, in which region any injuries suffered at her hands by German subjects in distant climes would be regretted.

In connection with the diplomatic negotiations with England relative to Angra Pequena, Bismarck explained his colonial policy and offered to support England’s interests nearer home if the English Government would assist Germany in the projects of colonial extension. The dispatch proposing this alliance, dated May 5th, indicated that if this arrangement could not be made, Germany would be under the necessity of seeking the support of France on similar terms. When Count Münster failed to secure this understanding, Prince Bismarck sent his son to London; but he also only obtained general assurances of good-will. Sir Edward Malet, Lord Ampthill’s successor in the Berlin embassy, when Prince Bismarck gave the history of the negotiations, expressed regret, declaring that England, never had the intention of thwarting Germany’s colonial aspirations, and asked what Germany wanted. Did she want New Guinea or Zululand? Prince Bismarck replied that he was unable to make further explanations, as an understanding had already been established with France.

The main object of the colonial movement in Germany is to divert from the United States to regions under German rule and influence the stream of emigrants who in nearly all cases adopt American nationality and become lost to Germany forever. The colonial agitation has been in progress about five years. The idea is exceedingly popular. The great expansion of German industry and the constant growth of the foreign trade furnished a more practical reason for this policy which Bismarck first adopted when he proposed to sustain with Government credit the Samoan company. The adoption of this policy by the Government gave a fresh impetus to the colonizing movement. New trading settlements were established in the hope of Government protection and encouragement. A colonial association was founded, which counts 7,000 members. In 1884 a colonial bank with a capital of 30,000,000 marks was established at Hamburg for the promotion of direct dealings in money and bills of exchange with transoceanic trading centers. In August a meeting was held in Berlin at which a large sum was subscribed for the purpose of purchasing tracts in South Africa for an agricultural and trading colony. Subsequent to the West African annexation a colonial bureau was created as a department of the Imperial Government.

The Anglo-Portuguese Congo treaty was considered by the German Government as specially directed against German trading and colonial interests and those of France. It was the first ground for the coolness that arose between England and Germany. As Germany, France, and other powers refused to sign such a treaty, it was abandoned by Great Britain. The Congo Conference in Berlin was called by Germany in accordance with an understanding with France. (See Congo, International Association of the.)

**Angra Pequena.**—The district of Angra Pequena, which was the first territory in Africa to be proclaimed a German protectorate, extends from the Orange river, the northern boundary of the British possessions, to latitude 28° 58’ south, and inward eighty miles from the coast. The harbor of Angra Pequena, at the mouth of the Little Fish river, is the best on the southwest coast of Africa, except Walfish Bay. The district contains large copper deposits besides iron, silver, and gold. Copper is still more abundant in Hereroland, the back country of Walfish Bay, on the north. Within three leagues of the coast are eleven quarantine islands. The climate is endurable, but water can only be obtained from Cape Town, and costs 3s. a hogshead. Trading communications with the interior are difficult on account of a strip of barren sand along the coast, twenty miles broad. E. A. Lederitz, a Bremen merchant, acquired the full sovereign and private rights over the district by a cession from
d chief in Bethania, and began mining
Bismarck determined to make a test
of Angra Pequena, with regard to the
then asserted by English statesmen to
other nations from establishing sov-
rights over territory in the neighbor-
English colonies. Besides the Lüde-
settlement in Angra Pequena, the
ments of the Rhenish missionary in
and created a German interest in south-
In 1880 the German Govern-
posed the question whether Great
claimed any territory on the coast
of the Orange river, and was in the po-
afford protection to German settlers.
A negative answer was returned. In
ber, 1882, after being informed by Lü-
his intention to establish a factory at
Queen, the German Government asked
and was prepared to protect the enter-
Lord Granville, in February, 1883, de-
bat it was impossible. Count Münster
asked if England claimed territorial rights
Angra Pequena. The question was re-
to the Colonial Office, and not an-
until Nov. 21, 1883. In his reply Lord
le said that, although British sovereign-
not been proclaimed over the entire
not only over certain places, such as
Bay and the islands at Angra Pequena,
ial Government would regard the as-
of any rights of sovereignty or juris-
by a foreign power between the bound-
te Portuguese possessions at the 18th
of south latitude and the boundary of
ony as an invasion of its legitimate
The German Government asked what
ature of the rights claimed, what they
ed upon, and what means existed for
ge to German settlers. To this Dec. 31, 1883, no reply was made for
months. It was referred to Lord Der-
by him to the Cape Government. On
4, 1884, Prince Bismarck instructed the
consul at Cape Town to announce of-
that the Lüderitz settlement was taken
he protection of the German Empire.
Münster was directed to inform the
Government on the same day. When
for an answer to this communication, he
ote of Dec. 31, 1884, Lord Gran-
plained that the matter was delayed by
et crisis at the Cape. On the 3d of
marek, in a letter to Count Münster,
he was not negotiating with the Cape
but with the English Government,
quiry was not whether it might be
ent for Great Britain or Cape Colony
re other territory on the coast, besides
Bay; that he was aware that England
ritorial rights except at Walifish Bay,
he exercised no effective jurisdiction
ere; that his object was to avoid any
of the English Government to the
Governments' acceding to the desires
Bremen settlers by obtaining an official
declaration that the region was not claimed by
Great Britain, which the Foreign Secretary
could have convinced himself of by examining
the official register of English colonial posses-
sions. He declared that, according to his sen-
timent, Germany was not treated on a footing
of equality, particularly when English states-
men announce a Monroe doctrine in Africa,
and deny to other nations, and especially to
Germany, the right to acquire unclaimed ter-
ritory because it lies near Cape Colony. In
a conversation with Lord Ampthill, Prince Bis-
marck said that the German Government could
not deny protection to Germans who acquire
lands and found enterprises in territories,
whether in Africa or elsewhere, which are re
nullius, and that if England were willing to
take such establishments under her protection
German traders who appealed to the protection
of their Government could not be asked to
transform themselves into British subjects.
The relations of the German Government to
such enterprises would be like those of the
English Government to the East India Com-
pany in its early days; the settlements would be
endowed with rights equivalent to those
ferred under a royal charter, such as was
granted to the North Borneo Company.
In Cape Colony counter-claims were set up
against those of Herr Lüderitz to the coast and
islands of Angra Pequena. When the guano
deposits in the small islands were first discov-
ered, Sir Philip Wodehouse, the Governor of
Cape Colony, issued a proclamation, in 1861,
annexing them to Great Britain. They were
leased to a firm of Cape merchants, who in
1868 obtained a deed of the coast district for
seventy miles, including the harbor of Angra
Pequena, from one of the Hotentot chiefs.
This chief was shortly afterward killed, and
the lands he had sold were taken possession
of by his enemies. When Herr Lüderitz came
in the early part of 1883 to establish his colony,
the British merchants disputed his title and an
English naval officer was sent to adjust the
difficulty. The vigorous assertion of a superior
claim by the Bremen merchant and his appeal
to the German Government impelled Prince
Bismarck to raise the question of sovereignty
with the British authorities and to proclaim a
protectorate over Angra Pequena. In June,
1884, Lord Granville finally informed Count
Herbert Bismarck that the English Govern-
ment had no objections to the German pro-
tectorate and would only insist itself in the
rights of English subjects trading in those re-
ions. On the 19th of July the protectorate
was officially recognized by the English Gov-
ernment in a note of Lord Ampthill's which
asserted the right of Great Britain to the is-
lands at Angra Pequena as well as to Walifish
Bay, and made the recognition conditional
upon the acquired rights of English subjects
being respected, and upon security being af-
forded that no penal colony should be planted
on the coast in question. The appointment of

an Anglo-German commission to examine and decide all contradictory claims was proposed. In a dispatch, dated July 24, Prince Bismarck refused to bind Germany by any conditions, saying that the demand was unusual, and had never been imposed on England in relation to any of her colonies. Germany had no intention of establishing penal colonies, and would recognize the rights of English subjects according to the principles of international law. If disputes should arise, like those in the Fiji Islands, the German Government would show the same disposition to arrange the difficulties that the English Government evinced in that case. Lord Granville explained that the word "security" was used only to express the wishes of the British Government, which was ready to enter into a mutual agreement with Germany respecting penal settlements or to accept the verbal assurance given, and that the appointment of commissioners seemed the proper way to settle boundary and other disputes. About this time the German consul at the Cape wrote that Lord Derby was sparring on the Cape Government to annex the entire unoccupied coast of southwest Africa. On the 17th of August the German ambassador was instructed to inform the English Government that the annexation resolve of the Cape Parliament created a difficulty for the German Government, as it had adopted the same resolve. A telegram meanwhile arrived, reporting that on the 7th the commander of the Wolf had raised the German flag over all the coast except Walvis Bay. On the 19th a dispatch of Count Hatzel's announced that by virtue of cessions obtained by German subjects from the native chiefs of Namqua and Damaras in the region north of Angola, the German Government had annexed that coast and that the German Government was therefore embarrassing, as it raised a claim of sovereign rights over the territory. It was not expected, in view of the official declarations that the Orange river marked the northern limit of the English possessions, with the exception of a small district at Walvis Bay, that an attempt would be made just now, in competition with German aims, to extend English sovereignty beyond the designated boundaries. On the 26th the German Government complained that the reply to its note of Dec. 21, 1889, had been delayed six months, and the time employed to prepare rival British annexations. While the German Government waited in confidence for an answer, the English Colonial Minister in telegrams published in Cape Town encouraged the Cape Government to the resolutions that are intended to thwart the development of the German enterprises. The theory of the annexation of extensive unexplored coast and islands by a succession of treaties was declared to pose to the law of nations and trade. The German representative in London was informed that the British Government intended to disallow the action of the Cape Parliament. The Cape Government consequently reduced the annexations to the immediate surrounding Walvis Bay, which had been incorporated in Cape Colony. Lord Granville, in an interview with the German Chargé d'Affaires, Baron von Pleß, distributed the whole difficulty to a misunderstanding. An English note of Sept. 1 took cognizance of the hoisting of the English flag on the coast between latitude 26° and 28°, and expressed a welcome to Germany as a neighbor in South Africa if she found there a colony or a protectorate of territorial character. The islands of Bird and Mercury Island, as well as the Angra Pequena, were claimed as British territory. The complaints of the German Government were declared to be due to a misunderstanding, due to a lack of knowledge of obscure details of British colonial legislation and history. The German Government asked whether it intended to exercise territorial administration, or merely protect projects in that region, as, in the case of existing sovereign powers of a territorial character, the possession of such territory over British subjects in that part of the world would cease. This query was answered affirmatively, and the English proposal to constitute a mixed commission to decide international disputes was accepted. The commission first the question whether the Cape Government possessed any sovereign rights or signified any legal title to the bay and islands of the coast of Angra Pequena.

Cameroons, Bimbia, and Little Papa.—The German Government has decided to send additional postal stations of German firms on the coast of Africa, the most extensive as of the Hamburg house of Woermann, has been established in Liberia since 1866. The Germans started a station in Cameroons in 1869 and have acquired a large share of the trade of this and other rich coast districts between the Senegal and the Niger. From Sierra Leone to the Congo there were sixty factories, including fourteen Hamburg firms. Seven men houses were also represented. The occupied coast districts developed by the traders afforded an opportunity for the establishment of a scheme of establishing postal services in the wake of German trade, whereas the Bimbia and Little Papa firms have acquired grants of land from the local rulers. Dr. Nachtigal, then filling the consul at Tunis, was appointed Consul-General of the West Coast of Africa, and was sent in May with several officers on the Mówe, for the purpose of carrying out secret plans of the German Governments...
GERMANY.

The acquisitions effected in 1884 give Germany over 750 miles of the West African seaboard, Portugal possessing some 800 miles, France 600, Great Britain 1,800, Liberia 850, and 860 remaining in native hands. A German squadron was stationed on the west coast of Africa, composed of four corvettes with 50 guns and 1,318 men. The vessels are among the most efficient of the German cruisers. On the island of Fernando Po the Spanish Government granted to Germany a spot for a coaling and consular station. Herr Rohlfs accompanied the German squadron, and afterward proceeded to Zanzibar to act as German consul, where he secured special arrangements with the Sultan, whose relations had been previously confined to Great Britain, which country exercised a quasi-protectorate over the former main outlet of the slave-trade. The district of Cheik-Said, near the Straits of Bab-el-Mandeb, was purchased by Germans in the autumn. On the south shore of South Africa, in Zululand, and in the Portuguese possessions, there were signs of German commercial activity and colonial enterprise. Bismarck intimated that if Zululand was not subject to English sovereignty, it would be open to German colonization as any other ownerless territory. The English anxiety about the German annexations in South Africa was not merely on account of the future trade of the Lake Ngami and upper Zambezi regions, but sprang from fears regarding the significance and consequences of the proximity of Germany to the Boer Republics. These fears were heightened by the cordial reception given in the summer to the Boer delegates in Berlin, and the confidential conversations of Mr. Kruger with the German Chancellor.

Annexations in the Pacific.—Later in the year the Germans developed a colonial activity in the Pacific. Their colonizing campaign in this quarter of the world was designed to create more embarrassments for the British Government than their action in South Africa. In December, news that the German flag had been raised over the northern coast of New Guinea, or Papua, as far as the Dutch line, and in parts of the Admiralty Islands, in New Britain and New Ireland, the Duke of York’s Islands, New Hanover, Marshall Island, and Anderson Island, created consternation in Australia. This action anticipated the Australian scheme of extension, which has been prepared with much excitement. When the British authorities refused to countenance the annexation of New Guinea by Queensland in 1888, the colonists were told that there was no danger of foreign acquisition. Lord Derby declared in Parliament that any attempt on the part of a foreign power to settle on the coast of New Guinea would be regarded as an unfriendly act. Subsequently, in deference to the wishes of the colonists, the home Govern-
ment took possession of the southern coast, but left the northern and more valuable part of the island for the occupation of Germany. The Tonga, Gilbert, and Solomon islands were also included in the German scheme of a colonial empire in the South Sea. Later, a German protectorate was established over the Samoan group. Two German vessels stopped at the Samoan islands about the end of December, and their officers compelled the King to sign a treaty turning over the whole authority of the government to the representative of Germany. This action seems to have been a violation of an agreement made with England not long before, by which the two powers mutually agreed to respect the independence of the Samoan and Tonga islands. The King of Samoa wrote a letter to the Emperor William, protesting against the act of the German officers. In February, 1885, Earl Derby instructed the English consul in Samoa not to countenance any movement looking toward British annexation. The largest commercial interests in the unoccupied islands of the western Pacific are in the hands of Germans. The German South Sea Islands Trade and Plantation Company almost monopolizes the copra-oil trade of the Tonga and other groups, which amounts to 18,000 tons a year and is increasing. The import articles were of German, English, and American production. The plantations of the company in Samoa have an extent of 6,800 acres, and employ 1,192 laborers. Three German companies exported cotton, timber, tobacco, and rice from the Samoans and Tongas islands to the value of $1,000,000 in 1883.

GREAT BRITAIN AND IRELAND (UNITED KINGDOM OF), a constitutional monarchy of western Europe. The supreme legislative power resides in Parliament, which must be convoked annually, as supplies are only voted, and the mutiny act renewed, from year to year. The executive authority and the initiative in legislation is in the hands of the Prime Minister, who is appointed as the leader of the dominant party, and who selects his associates to preside over the departments and to prepare with him the schemes of legislation to be brought forward in Parliament. Prorogation is the legal death of Parliament; and legislation that is not finally enacted at the close goes for naught. There are no constitutional limits to the power of Parliament.

Victoria I, Queen of Great Britain and Ireland, and Empress of India, was born May 24, 1819, and succeeded her uncle, William IV, June 20, 1837. The heir-apparent is Albert Edward, Prince of Wales, born in 1841. The next heir is his son, Albert Victor, whose coming of age was celebrated Jan. 6, 1885. The present House of Commons first met in April, 1880. It is the twenty-second since the union, and the tenth of the reign of Victoria. Unless previously dissolved it will last until 1887. The House of Commons consists of 658 members. In 1884 writs were suspended in six constituencies, so that the number of representatives was 652. At the beginning of the term the House was divided as to parties into 208 Conservatives and 288 Liberals from England, 8 Conservatives and 52 Liberals from Scotland, and 24 Conservatives, 19 Liberals, and 60 Home-Rulers from Ireland; together, 555 Conservatives, 557 Liberals, and 60 Home-Rulers.

The House of Lords is composed of the hereditary nobles of England, new English peers created by royal patent, the English bishops who are peers ex officio, 23 Irish peers elected for life, and 16 Scottish representative peers elected for each succeeding Parliament. No new peerage can be created in Scotland, and in Ireland none until three existing peerages have become extinct; but in England peerages can be created for life or in perpetuity in any number. The House of Commons consisted in 1884 of 516 members, of whom 5 were peers of the blood royal, 2 archbishops, 23 dukes, 19 marquesses, 117 earls, 26 viscounts, 24 bishops, 267 barons, 18 Scottish representative peers, and 23 Irish representative peers. Only 37 of the peerages are older than the seventeenth century, and 315 are not older than the present century; no fewer than 166 having been created during the reign of Queen Victoria. The President of the House of Peers is the Earl Chancellor, the Earl of Selborne. The Speaker of the House of Commons is Arthur W. Peel.

The Cabinet in 1884 was composed as follows: William Ewart Gladstone, Premier and First Lord of the Treasury; Hugh C. E. Childers, Chancellor of the Exchequer; the Earl of Selborne, Lord High Chancellor; Earl Spencer, Lord Lieutenant of Ireland; Baron Orlingford, President of the Privy Council and Lord Privy Seal; Sir William Vernon Harcourt, Secretary of State for the Interior; Earl Granville, for Foreign Affairs; the Earl of Derby, for the Colonies; the Marquis of Hertford, for War; the Earl of Kimberley, for India; the Earl of Northesk, for Admiralty; Joseph Chamberlain, President of the Board of Trade; G. O. Trevelyan, who succeeded Mr. Dodson in October, when the latter was elevated to the peerage, Chancellor of the Duchy of Lancaster; Sir Charles W. Dilke, President of the Local Government Board; Lords Selborne, Spencer, Orlingford, Derby, Kimberley, and Northbrook are members of the House of Peers, the others of the Commons.

The Secretary of State for Ireland is Mr. Campbell Bannerman, who succeeded G. O. Trevelyan in October, 1884. The Vice-President of the Education Committee of the Privy Council is Anthony J. Mundella. A new department for agriculture was created in 1884, of which G. T. Brown is the chief.

Area and Population.—The area of the British Islands is 121,468 square miles. For area of the different geographical divisions, and the population as determined by the census of 1881, see "Annual Cyclopedia" for 1883. The official estimates for 1884 make the popu-
GREAT BRITAIN AND IRELAND.

The population of England and Wales in 1871, 77-9 per cent. belonged to the Anglican Church, 17-4 per cent. were dissenters, 4-6 per cent. Roman Catholics, and .02 per cent. Hebrews. In Scotland 43-9 per cent. belonged to the Established Church, 44-2 per cent. to the Free Church and other dissenting congregations, 9-8 per cent. to the Roman Catholic Church, 2-2 per cent. to the Church of England, and about 2 per cent. to the Hebrew confession. In Ireland according to the census of 1881 there are 3,960,691 Catholics, 659,074 Anglicans, 470,724 Presbyterians, 48,939 Methodists, and 54,266 of other denominations.

Of the 22,712,266 inhabitants of England and Wales in 1871, 213,254 were of Scotch birth, 54,540 born in Ireland, 70,913 born in the colonies, 25,655 in the adjacent islands, 190,445 in foreign countries, and 4,305 on the sea. Of the 5,174,836 inhabitants of Ireland in 1881, 23,380 were of English, 23,228 of Scotch, 5,325 of colonial, and 11,210 of foreign birth.

The total emigration from the United Kingdom from 1815 to 1883 was 10,444,999 persons, of whom 6,860,261 emigrated to the United States, 1,765,586 to British America, 1,437,243 to Australia and New Zealand, and 36,902 to other countries. There emigrated in 1883 183, 236 English, 31,189 Scotch, 105,748 Irish, and 73,590 foreigners. The emigration to the United States comprised 93,392 English, 15,322 Scotch, 83,049 Irish, 60,666 foreigners, and 805 not determined; total, 252,266. The total emigration from the United Kingdom was 397,157 persons. The immigration in 1883 was 100,508, against 82,804 in 1882, and 77,105 in 1881. The number of emigrants from Ireland in 1884 was 74,043. Of these 14,062 were from Leinster, 24,363 from Munster, 21,733 from Ulster, and 15,733 from Connaught. Of the total number 70 per cent. were between the ages of fifteen and thirty-five. The number of females was 27,869.

The metropolitan district of London in 1881 contained 3,814,571 inhabitants, the police district 4,764,312. Liverpool contained 322,000; Glasgow, 511,582; Birmingham, 460,774; Manchester, 541,414, and its suburb Salford, 176, 285; Leeds, 309,119; Sheffield, 284,608; Dublin, 249,602, the police district containing 549,648; Edinburgh, 228,190, and its suburb Leith, 81,168; Belfast, 208,122; Bristol, 206, 874; Nottingham, 166,176; Bradford, 189,283; Hull, 154,240; Stoke-upon-Trent, 152,394; Newcastle, 145,559, and its suburb Gateshead, 65,503; Dundee, 142,464; West Ham, 128,692; Portsmouth, 127,969; Leicester, 122, 376; Sunderland, 118,484; Oldham, 111,948; Brighton, 107,546; Bolton, 105,414; Aberdeen, 105,054; Blackburn, 104,014.

Commerce.—The total values of the imports and exports of merchandise for the seven years ending with 1883 were as follows:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Imports.</th>
<th>Exports.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877</td>
<td>£230,459,000</td>
<td>£252,846,000</td>
</tr>
<tr>
<td>1878</td>
<td>287,771,000</td>
<td>325,634,000</td>
</tr>
<tr>
<td>1879</td>
<td>362,090,000</td>
<td>426,783,000</td>
</tr>
<tr>
<td>1880</td>
<td>411,890,000</td>
<td>488,414,000</td>
</tr>
<tr>
<td>1881</td>
<td>492,092,000</td>
<td>577,388,000</td>
</tr>
<tr>
<td>1882</td>
<td>441,050,000</td>
<td>480,560,000</td>
</tr>
<tr>
<td>1883</td>
<td>410,959,000</td>
<td>480,447,000</td>
</tr>
</tbody>
</table>

The proportions of British products and of foreign and colonial products in the total merchandise exports were as follows:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Domestic exports.</th>
<th>Foreign exports.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1877</td>
<td>£196,808,000</td>
<td>£38,658,000</td>
</tr>
<tr>
<td>1878</td>
<td>212,349,000</td>
<td>22,582,000</td>
</tr>
<tr>
<td>1879</td>
<td>210,585,000</td>
<td>27,262,000</td>
</tr>
<tr>
<td>1880</td>
<td>220,060,000</td>
<td>28,554,000</td>
</tr>
<tr>
<td>1881</td>
<td>254,028,000</td>
<td>28,069,000</td>
</tr>
<tr>
<td>1882</td>
<td>241,467,000</td>
<td>28,184,000</td>
</tr>
<tr>
<td>1883</td>
<td>250,199,000</td>
<td>28,184,000</td>
</tr>
</tbody>
</table>

The value of the total exports per capita was £11 19s. 9d. in 1883, against £11 14s. 1d. in 1882; the value of the domestic exports £6 14s. 6d. against £6 16s. 10d. in 1882.

The imports and exports of the precious metals for 1883 and the three years preceding were of the following amounts:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Gold.</th>
<th>Silver.</th>
<th>Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>£2,558,000</td>
<td>£1,939,000</td>
<td>£4,682,000</td>
</tr>
<tr>
<td>1881</td>
<td>3,088,000</td>
<td>2,889,000</td>
<td>5,980,000</td>
</tr>
<tr>
<td>1882</td>
<td>7,418,000</td>
<td>5,392,000</td>
<td>12,810,000</td>
</tr>
<tr>
<td>1883</td>
<td>2,045,000</td>
<td>1,805,000</td>
<td>3,850,000</td>
</tr>
</tbody>
</table>

The imports from European countries amounted in 1888 to £189,761,000, from American countries to £117,480,000, from other parts of the world to £20,689,000, the total from foreign countries to £239,910,000, from the British colonies to £28,882,000; the exports to European countries to £92,205,000, to American countries £50,311,000, to other foreign countries £13,809,000, the total export to foreign countries £156,322,000, to British possessions £28,477,000. The trade between Great Britain and the principal foreign countries and the colonies in 1888 was of the following amounts:
The imports of articles of consumption in 1888 amounted to £201,688,000, cereals representing £21,589,000, animals, meat, and provisions £28,988,000, colonial wares £245,883,000, fruits and vegetables £20,505,000, tobacco £2,861,000, and fermented liquors £8,088,000. The exports of this class of commodities amounted to £11,313,000, the exports of animals and animal food-products being £3,256,000, of fermented liquors £2,630,000, and of groceries £2,458,000. The imports of raw materials amounted to £135,739,000, the exports to £46,478,000, the former being made up of minerals of the value of £26,145,000, raw and partly manufactured metals of the value of £9,911,000, hides, skins, and leather of the value of £17,119,000, textile materials of the value of £83,265,000, and timber of the value of £19,521,000, the latter of coal of the value of £10,614,000, minerals of the value of £295,000, metals of the value of £30,379,000, hides, skins, and leather of the value of £5,958,000, and textile materials of the value of £1,030,000. The total value of the exports of manufactured articles was £156,920,000, of the imports £242,599,000. The exports of glass and pottery were valued at £3,417,000, the imports at £2,206,000; exports of metal manufactures £8,439,000, imports £2,910,000; exports of machines, cars, and vessels £16,956,000, imports £511,000; exports of leather and fur manufactures £3,600,000, imports £2,739,000; exports of yarns £18,908,000, imports £23,079,000; exports of textile manufactures £100,708,000, imports £23,977,000; exports of iron and steel manufactures £1,446,000, imports £1,286,000; exports of art products £537,000, imports £699,000; exports of wood and straw manufactures £1,375,000, imports £285,000; exports of books, etc., £1,175,000, imports £202,000. The total value of miscellaneous imports was £47,007,000, of the exports £25,770,000. The imports of waste products and manures were £3,682,000 in value, the exports £2,182,000; imports of drugs, colors, and chemicals £13,250,000, exports £7,607,000; imports of gums, fats, and oils £14,918,000, exports £1,616,000; imports of various articles £16,177,000, exports £14,381,000.

The returns for the first six months give the quantities of some of the leading articles of import, as compared with the corresponding part of the preceding years, as follow: wheat 19,908,385 cwt., against 1,771,993 cwt., from America 11,837,260 cwt., against 15,919,394 cwt.; wheat flour 7,482,841 cwt., against 9,004,000 cwt., from America 5,164,348 cwt., against 5,940 cwt., barley 4,927,841 cwt., against 7,266,180 cwt.; oats 5,389,273 cwt., against 7,510,000 cwt.; maize 12,774,931 cwt., against 16,288,435 cwt.; the total value of the grain imports £299,022,702, against £34,793,409; raw sugar 10,573,359 cwt., against 10,256,334 cwt., from Germany 3,846,789 cwt., against 3,065,083 cwt.; petroleum 15,582,358 gallons, against 33,209,386 gallons; raw cotton 9,897,577 cwt., against 9,408,074 cwt.; jute 3,161,186 cwt., against 5,065,578 cwt.; wool 356,047,986 pounds against 341,679,521 pounds. Among the exports the shipments of coal amounted to 11,098,062 tons, against 10,508,734 tons, value £5,234,520, against £4,933,907; iron and steel 1,771,171 tons, against 1,972,379 tons, value £12,468,890, against £14,458,457. The exports of pig-iron were 8,468,485 tons, against 7,141,319 tons, of rails 883,850 tons, against 507,069 tons. Agriculture.—The report of the agricultural committee of the Privy Council for 1884 shows a continued decrease in the area under crops, with an increase in the total cultivated area, due to the extension of pastureage. In Great Britain the area under cultivation was 91,000 acres greater than the previous year. The total area under cultivation in England in 1884 was 24,844,000 acres, the area of permanent pasture 12,198,000, an increase in the total of 1,360 and in pasture-land of 2,58 per cent in five years. The wheat area was 64,000 acres greater than in 1884, which year, however, showed a smaller area than any year since 1888. In barley there was a decrease of 128,000, and in oats of 60,000 acres. The total area under grain-crops was 133,900 acres below that of 1884, and 946,700 acres less than in 1874. In Ireland there was an increase in the area under cultivation, due mainly to the reclamation of land for stock-feeding purposes. The total area planted to potatoes was greater than in any year recorded except 1881, being 566,000 acres in Great Britain and 798,300 acres in Ireland. Market-gardens show the slight increase of 8,500 acres per decade on the part of the British farmer to follow Mr. Gladstone's advice and devote his attention to the making of jam. Agricultural horses show a decline. In cattle there was an increase of 308,362 head. The number of sheep was 66,000,000, 1,000,000 more than in 1888, but 4,000,000 below the census of 1874. The average size of farm holdings in England was 137½ acres, in Wales 67, in Scotland only 19 acres. The wheat-crop of 1884 was above the low average of 2½ bushels for the last nine years, but not above the average of 2½ bushels an acre in the period preceding 1886.
posed a scheme for the benefit of British agri-
culture, according to which store-cattle would be
imported from the Northwest through Cana-
da, to be fattened by British farmers, instead of
being fed up by American farmers and im-
ported as fat cattle or in the form of meat. To
this plan more objection was to be expected
from the Canadian breeders of cattle than from
the English authorities.

Navigaton.—The entries of vessels engaged in
foreign commerce show in 1888 a total tonnage of
£5,105,050 tons, the clearances 32,856,573.
The tonnage entered in 1888 was 30,315,828,
in 1880 12,172,785. Of the total tonnage en-
tered, 28,389,544 tons were British. The steam
 tonnage entered in 1888 was 23,920,083 tons,
against 21,581,444 in 1882 and 2,549,000 in
1880; the steam tonnage cleared, 24,387,587
tons; the steam tonnage entered carrying the
British flag, 19,548,811 tons. The total ton-
 nage of vessels entered with cargoes in 1888
was 28,310,518 tons, cleared 28,573,160. The
coasting tonnage in 1888 was 43,395,517 tons,
cleared 38,566,187 tons, against 41,325,274 tons
entered and 35,833,775 cleared in 1883.

The mercantile navy in 1888 comprised
17,906 sailing-vessels, with a total capacity of
5,471,192 tons, against 18,377,000 tons in 1882,
and 5,241 steamers of 3,725,000 tons, against
4,705 steamers of 3,832,000 tons in 1882. The
mercantile navies of the colonies contained in
1888 12,549 sailing-vessels and 298 steamers of
an aggregate tonnage of 1,985,000 tons. The
total tonnage engaged in the lesser coasting-
trade in 1888 was 934,000, the number of sail-
ers employed 50,171; in the greater coasting-
trade 143,000 tons, the number of sailors em-
ployed 5,508; in long voyages 3,280,000 tons,
the number of sailors employed 145,246.

Railroads.—The length of railroads in opera-
 tion in 1888 was 18,292 miles in England, 2,994
in Scotland, and 2,502 in Ireland, total 18,688,
an increase of 18,057 miles in 1883. The total cost
of construction was £784,921,000, the gross
receipts £71,062,000, net receipts £38,964,000.

The railroads are all private property sub-
ject to state control. An act of 1864 requires
the railroad companies to afford reasonable tar-
iffs, protects the public from unequal and preju-
dicial treatment, and secures through transpor-
tation. In 1879 the railway commission
was created for the better enforcement of these
provisions. This commission, which was con-
tinued by the acts of 1878, 1879, and 1882,
has accomplished little besides the duties of inspec-
tion, such as seeing that tariff lists are kept at
the stations, that canals owned by railroad com-
panies are kept in navigable condition, etc.
The maximum rates of 1d. to 3d. per ton per
mile for the five classes of goods are not ob-
served by the railroad companies. The differ-
etial rates, which are less for American meat
slaughtered in Glasgow than for native meat,
and 60 per cent. more for Manchester goods
designed for export than for the same destined for
the London market, were complained of before the
Parliament committee of 1881. Competitive
rates did not exist. The capital account of the
railroads shows a rapid tendency toward con-
centration, the sum of the ordinary shares
being less in 1888 by £500,000 than in 1892,
while £25,000,000 of new debts were contract-
ed by the existing companies during the year
for the extension of their lines.

Posts and Telegraphs.—The post-office in 1888
-’84 forwarded 1,892,000,000 letters, 154,000,
000 post-cards, 487,000,000 newspapers, 15,
800,000 internal postal orders, of the total
value of £25,000,000, 200,000 postal orders for
the colonies, and 600,000 for foreign countries.
The number of letters sent in England was
1,112,000,000, in Scotland 122,000,000, in Ire-
land 88,000,000. The receipts in 1880—81 were
£25,738,497, the expenses £24,185,659.
The length of the state telegraph lines in
1883 was 43,683 kilometres, of the wires 198,
227. The number of dispatches in 1888—84 was
32,443,120, 27,606,546 in England, 8,399,
428 in Scotland, and 1,936,646 in Ireland.

The Army.—The regular army establishment
provided for in the army estimates for 1884—
85 comprises 184,401 infantry, 16,598 cavalry,
34,041 artillery, 5,723 engineers, colonial corps
of 2,459 men, and 8,333 in the administrative
services; total, 201,905 officers and men, with
23,210 horses. The regular army reserve musts
50,700 officers and men. The battalions in
Egypt are on the war footing. Of the total
force provided for in the estimates 107,818
were in the United Kingdom, 61,591 in India,
25,097 in the colonies, and 7,399 in Egypt. The
militia counts on its lists 150,991 officers and
men, the volunteer force 247,561. The
native Indian army musters 129,882 officers
and men, making the total war strength 772,
128 men. There are besides an armed con-
stable in Ireland about 14,000 strong, a na-
tive military police of 190,000 men in India,
and militia and volunteer bodies in many of the
colonies. There were with the regular army at
the close of 1888 191,278 officers and men, with
23,282 horses and 584 cannons. The army of occupation in Egypt
was 15,000 strong in September, 1884.

The alarm which has lately been felt regard-
ing the efficiency of the English military de-
fenses was heightened by the result of investi-
gations into the management of the transport
and commissariat services in the Afghan and
Egyptian wars. In the first Afghan campaign
60,000 camels and 30,000 other baggage ani-
mals were lost from neglect and starvation.
In the Egyptian war bales of hay were accept-
ed from contractors which were filled with out-
side wrappers, or contained bricks and stones,
or in which the hay was coarse and ill-smell-
ing. The flour was moldy. The commissary-
general ordered no inspection before it was
sent, nor did the chief of the staff in Egypt ex-
amine the supplies. Many of the mules that
were bought were so weakened by poor feed-
ing that they were not ready for service till

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the battle of Tel-el-Kebir. Half the rations were left through the stoppage of transport.

The Navy.—The ironclad navy in September, 1884, comprised 8 iron and 8 steel frigates of over 10,000 tons, 2 of the latter under construction, 8 iron frigates of over 6,000 tons and 2 of steel under construction, 12 iron, 2 steel, and 3 wooden frigates of over 6,000 tons, and 4 smaller iron broadside vessels: 2 iron turretted ships of over 10,000 tons, 6 of iron and 2 of steel of from 8,000 to 10,000 tons, and 10 of less capacity; and 8 iron and 2 steel runs of special construction. There were besides 11 armed vessels of antiquated design and 5 more stationed in India and the colonies. The navy contained altogether 73 ironclads, 309 steamers, and 147 sail-ships and pontons. The total number in commission was 247, of which 133 were stationed in British waters, 23 in the Mediterranean, 19 in China, 19 on the east and west coasts of America, 4 in Brazil, 10 in India and East Africa, 9 in South and West Africa, and 9 in Australia. Of the 58 ironclads of over 6,000 tons 6 formed the Channel squadron, 6 were in the first reserve, 6 were in the Mediterranean squadron, 4 were distributed in America, China, and Australia. The Inflexile has 24 inches of armor at the water-line, the Ajax, Agamemnon, Colesous, Edinburgh, Collingwood, Rodney, Howe, Camperdown, Benbow, and Anson 18 inches.

While Lord Northbrook was still in Egypt, an alarm was raised by the newspapers as to the naval strength of England, as compared especially with the French navy. The subject was taken up by naval critics and the opposition politicians, and soon became a matter of discussion in Parliament and a cause of public disquietude. The alarmists pointed out that in recent years the expenditure on the English navy had not been proportionate to the growth of the national wealth and commerce. The development of the naval armament of France and some other Continental nations was relatively much more rapid, their expenditure being a third more than twenty-five years ago, while England spends no more on her navy than she did at that period. The aggregate displacement of the armored ships of all classes in the British navy, old and new, completed and unfinished, is 437,210 tons, which is nearly equalled by the French navy with a displacement of 428,000 tons, while the Italian navy is measured by a displacement of 127,000 tons, the Russian by one of 105,000 tons, the German by one of 104,000 tons, and the Austrian by one of 60,400 tons. Sir E. J. Reed contended that the French ships of the first class are individually superior to the English because they have a complete belt of armor, while the English vessels have side-armor for only about one third of their length and a bomb-proof deck from stern to stern six or seven feet below the water. Above this the cells and cork chambers are exposed, except amidships. He would reckon only half the tonnage of such ships as armored tonnage. In the matter of guns the French were greatly inferior to the English, who clung to muzzle-loaders after they were abandoned by the other naval powers, but the new type of breech-loader with which the English navy is being armed is said to be better than the French. In torpedo-boats and torpedoes England was also behind some of the Continental powers. The Conservatives could not make the question the subject of a party attack because naval construction has proceeded faster under the present than under the late administration, though expenditure for repairs had been much less. Lord Northbrook, in comparing the English with the French fleet, stated that England had ready for present action 80 ships of modern types, with a displacement of 310,450 tons, while France had 18, 81, 127,828 tons; and that of obsolete types there were 16 English ships, of 115,590 tons, to 11 French, of 58,086. The greater activity of the French in naval construction was explained by the circumstance that they had adhered to the system of iron-plated wooden vessels while England was providing herself with a fleet of armored iron vessels, and were in consequence now obliged to build their navy over again. The impression which prevailed as the outcome of the controversy was that the English navy was still considerably stronger than the French, but not more than equal to the French in combination with the Italian or the German. There was a general demand that the navy should be strengthened so as to be able to cope with such combinations of naval powers as there was any likelihood of being formed against England. When the panic was started, the Liberal politicians treated it with contempt; yet in the autumn session the Government yielded to the clamor, and, notwithstanding the gloomy financial outlook, asked for an additional sum of £5,825,000 for the navy, to be distributed as follows: £1,000,000 was for new ships, £1,600,000 for new guns, and £2,000,000 for the fortification of English coaling-stations. The new vessels include 4 ironclads of over 10,000 tons of the Conqueror type, with 16 cannons; 12 guns in turrets, an 18-ton gun in the stern, 12 6-inch guns in a steel casemate, and a speed of 15 knots; 2 rams of 8,000 tons displacement of the Polyphemus type; 5 belted cruisers, of 5,000 tons each, steaming 17 knots an hour; 10 scouts or torpedo cruisers, of 1,500 tons each; and 50 first-class torpedo-boats. The present Government had already increased the expenditure for naval construction from £3,134,000 in 1880-81 to £8,891,000 in 1884-85, and the rate of construction from about 8,000 to 12,000 tons per annum. Including the expenditure of the War Ministry for naval guns, the increased expenditure was in the neighborhood of £1,000,000 per annum.

Flashes.—The total receipts and disbursements for the past five financial years, ending March 31, were as follow:
GREAT BRITAIN AND IRELAND.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Receipts</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1882-83</td>
<td>£2,119,979</td>
<td>£2,107,979</td>
</tr>
<tr>
<td>1883-84</td>
<td>£2,194,588</td>
<td>£2,184,974</td>
</tr>
<tr>
<td>1884-85</td>
<td>£2,268,789</td>
<td>£2,262,986</td>
</tr>
<tr>
<td>1885-86</td>
<td>£2,342,986</td>
<td>£2,342,986</td>
</tr>
<tr>
<td>1886-87</td>
<td>£2,419,586</td>
<td>£2,419,586</td>
</tr>
</tbody>
</table>

Finance accounts for 1888-84 make the receipts of the Exchequer £287,205,184, the expenditures £286,922,564. The gross yield from customs was £19,814,528, of which £9,088,436 was from tobacco, £2,423,228 from spirits, £4,263,734 from tea, and £423 from wine. The gross yield of Excise duties was £282,396,968, of which £1,419 was from spirits and £2,687,141 from tobacco. The license tax on the sale of liquor was £2,014,448; licensees of arms, male domestics, carriages, etc., £1,590,734; the duty on passengers, £747,700. The stamp duties were £11,946,627, of which £1,990,627 was from the sale of receipts, £4,178,503 from stamps, £3,951,977 from legacies and successions, £3,285,481 from the sale of bonds, and £2,551,905 from the sale of exchange. The house and land taxes were £9,198,929 in amount; the income-tax, £1,109,269; the net receipts of the post-office, £682,900; of the telegraphs, £71,747,951; of mails, £517,762; the interest on the debt of £78,723,730, plus £11,909,158; various receipts, £2,298,298, were paid into the balance on 1888, of £2,972,780. The financial year 1888-89 gave only a small surplus, with no prospect of improvement in the present year. No change was made in tax rates, a slight relaxation of the carriage-tax. The consideration of the death duties was deferred until a local tax should be dealt with. The proposal of the Government to postpone the reduction of the rate for telegrams and the interest on the debt of £15,000,000 for 1894-98 was strongly opposed, and a surplus of £1,000,000, while the increase in the war expenditure promised to leave the treasury £10,000,000 in the terminable annuities to £21,000,000, and the unfunded debt to £14,110,600; total, £453,964. The deduction of the probability of recoverable credits reduces the total amount to £717,283,929, including the surplus of £48,369. The suggestion of the holders of consols, and the timid measure adopted was objected to by those who consider English consols to be a sacred and inviolable institution. The conversion of the annual burden by £2,310,000, but the holders refused to exchange their bonds.

The Chancellor of the Exchequer failed to get passed a coinage bill which proposed to provide for the redemption and recoining of light gold coins by debasing the half-sovereign, replacing the standard coin with that denomination by token ten-shilling pieces. Tampering with the standard of this coin was calculated, according to the opinion that prevailed, to impair the international character of the English coinage, and to afford opportunities for fraud.

The Session of Parliament.—The fifth session of the tenth Parliament of the reign of Queen Victoria met February 5. The speech from the throne mentioned the Congo treaty with Portugal, which was afterward repudiated owing to the opposition of the powers, the negotiations for a revision of the Transvaal convention, and the suspension of the order for the evacuation of Egypt. The army of occupation in Egypt, on account of events in the Sudan which led to the dispatch of Gen. Gordon to report on the situation, and assist in the withdrawal of the Egyptian garrisons. The legislative programme embraced a measure “for the enlargement of the occupation franchise at parliamentary elections,” a bill for extending municipal government to the whole metropolis, forming part of a scheme for the extension and reform of local government which should include the regulation of the liquor traffic, and minor measures on merchant-shipping, railway regulation, municipal elections, the Government of Scotland, education and Sunday-closing in Ireland, and intermediate education in Wales. The conduct of the Government in evading a decisive vote on their Egyptian policy, which was repeatedly challenged by the Opposition, and those of the Opposition in blocking and retarding the extension of the suffrage and endeavoring to force a discussion up the attention of Parliament to such an extent that the session was almost entirely barren of positive legislation. Mr. Bourke assailed the Egyptian policy of the Cabinet in the debate on the address, and a vote was taken without a discussion, which was promised later. Mr. Chaplin forced the Government to promise to give effect to the resolution of Parliament of the preceding summer on the restriction of cattle imports for the prevention of cattle diseases. Mr. Parnell’s amendment to censure the Irish Executive for interfering with public meetings, and leaving the disturbances of Orangemen in Ulster unpunished, was rejected. On February 15 Sir Stafford Northcote proposed a resolution, based on the refusal of the Government to define Gen. Gordon’s position, or their intentions regarding the relief of Tokar, declaring that the recent lamentable events in the Sudan were due to the weakness and hesitation...
of the Government. Mr. Gladstone accepted Sir Wilfrid Lawson's phrase of "rescue and retire" as describing his policy. Lord Harington declared that on the Red Sea coast they could not allow anarchy to prevail, nor suffer any other European power to dominate, as it commanded the road to India. In the division the Cabinet was sustained by 811 votes to 263. The proclamations of Gen. Gordon concerning slavery, the price set on Osman Digna's head by Admiral Hewett, the operations of Gen. Graham, and other subjects, gave the occasion for fresh attacks. On March 15 the Government escaped by the narrow majority of 111 against 94 on a vote of censure proposed by Mr. Labouchere for the unnecessary waste of human life in the Suakin operations, which received unexpected support from Conservatives, a proceeding characterized by Sir William Harcourt in an audible exclamation as a "dirty trick." Three weeks later Sir Stafford Northcote provoked a vehement reply from the Premier on a motion to adjourn, prompted by the obstinate silence of the Government concerning Gen. Gordon. Mr. Gladstone's rhetorical and dialectical powers were never so copiously and brilliantly displayed as during this session, but his frequent use of invective betrayed the infirmity of age as well as the embarrassment of his position. The next memorable attack on the Government was Sir Michael Hicks-Beach's vote of censure proposed May 12, which elicited from Mr. Gladstone the admission that if Gen. Gordon was in peril the Government was bound to give him all reasonable aid. Mr. Forster and Mr. Goschen, with about thirty Liberals, abstained from voting, while the Irish members supported the motion, leaving the Government a majority of only 25, or 308 votes to 273. The protestations of Conservatives and Independent Liberals on the announcement of the negotiations with France drew from the Premier a pledge that the results should be submitted to Parliament. When the conference was announced, June 30, he declared that the arrangement was dependent on the decisions of the conference, which would stand or fall as Parliament determined. A vote of censure on the refusal to disclose the financial proposals was offered, but when Mr. Gladstone found a day, in accordance with his promise, the House, on the motion of Mr. Goschen, postponed the discussion as inopportune. After the failure of the conference, the departure of Lord Northbrook for Egypt to inquire and advise was announced, and on August 19 a vote of credit of £300,000 was obtained to enable the ministers to take measures for sending assistance to Gen. Gordon.

Immediately after the address was voted, Sir Henry Brand, since raised to the peerage as Viscount Hampden, resigned the speakership. Arthur Peel, the youngest son of Sir Robert Peel, was elected his successor, February 25.

On the 11th of February, Mr. Bradlaugh appeared at the table and went through the form of taking the oath. Sir Stafford Northcote moved that the act be not recognized, which motion was carried by 280 votes to 187. The member for Northampton was, furthermore, excluded from the precincts of the House upon declining to pledge himself not to disturb its proceedings. He accepted the Chiltern Hundreds, and was re-elected, whereupon his exclusion was again voted, February 25.

The new Speaker did not once put in force the powers of repression given by the new rules of procedure. The experiment of devolution, or the reference of measures to standing committees for the elaboration of details, though substantially a failure in the previous session, was renewed, subject to a condition that no bills reported from the committees should be considered by the House later than the end of July. It proved less a success than before. Mr. Chamberlain's important measures, which were to be submitted to the Committee on Trade, met with such opposition in the lobby that they were never considered by the committees. Of the bills referred to the law committees, one was withdrawn, and another so altered after it was returned to the House that it was lost in the upper house. The Government introduced a large number of bills of importance and advanced them to the second reading. The cattle-diseases bill, the government of London bill, the merchant-shipping bill, the railway regulation bill, a corrupt practices bill at municipal elections bill, a criminal law amendment bill, a medical acts amendment bill, a purchase of land bill for Ireland, the Irish Sunday-closing bill, an hours of pollings bill, and several others were simultaneously presented while the attention of Parliament was entirely absorbed by Egyptian affairs and the struggle over the London government.

The London government bill, which came next to the franchise bill in the order of importance, was introduced by Sir William Harcourt, April 8. It proposed to transfer to the new municipalities which were to be created by the metropolitan acts the urban jurisdiction the entire metropolitan area as defined by the act of 1855, the powers, property, and obligations of the City Corporation, the commissioners of sewers, the Lord Mayor, the Court of Aldermen, the Common Hall, the Ward-Mote, the Metropolitan Board of Works, the magistrates of Middlesex, Kent, and Surrey within the specified limits, the burial boards, and the vestries. The poor-law administration, elementary education, and the police were reformed. The municipal government was to be vested in a Common Council, which could delegate its functions to local elective boards, and in a mayor and a deputy-mayor, who should be paid officials. One of the first duties of the municipality would be to acquire for the public the rights of the gas and water companies.

Mr. Chamberlain's merchant-shipping bill was intended to put an end to the evils that arise from the acts for the protection of seamen that have been on the statute book.
a profit by the loss of unseaworthy vessels, it prohibited over-insurance and double insurance, and made underwriters liable only for actual losses; it created an implied contract of seaworthiness on the part of the owners; and it extended to seamen the employers’ liability act. The President of the Board of Trade tried to win the consent of ship-owners to his cherished scheme, and, when his negotiations failed, made a speech, which was an appeal from the House to the country, and withdrew the bill. His bill for ending the rail- way commissioners with real powers met with the same fate, as it was opposed not only by the railway companies, but by the farmers and traders also, who objected to the legalization of terminal charges and other changes in the law in favor of the companies.

The criminal law amendment bill was intended for the protection of young girls. It contained provisions enabling the police to clear the streets, and creating new offenses against public morals that condemned it in the eye of lawyers. The bill to extend to the four exempted cities and to make perpetual the Irish Sunday-closing law was obstructed by a few Irish members, both Nationalists of the extreme type and Conservatives. The existing act was prolonged by the expiring acts continuance bill. The Parnellites forced the Govern- ment to exclude Ireland from the operations of the bill against corrupt practices at municipal elections. The law of evidences amendment bill, which revived and made permanent certain provisions of the crimes act for the examination of prisoners, was carried in the face of their opposition. The most important Irish measure proposed was the purchase of land bill, which provided for the advance to tenants by the Government of the whole of the purchase-money for the acquisition of their holdings in fee simple. Mr. Trevelyan declared that no such liberal offer had ever been held out by any government to any class of citi- zens; that it would end the block in the land market which prevented the operation of the purchase clauses in the act of 1881, and would induce the tenant-farmers to purchase their holdings, and thus erect a bulwark of honesty and order in a class of peasant proprietors. The principle of the bill was accepted on all sides, but provisions for a local guarantee were criti- cised, and other parts of the bill were opposed by both Parnellites and Conservatives. All these and the other principal Government measures were withdrawn after the vote in the House of Lords on Lord Cairns’ amend- ment to the franchise bill, when the Prime Minister announced on the 10th of July that an autumn session would take place, and that in consequence the Government was compelled to make a sweeping and impartial sacrifice of the ministerial measures. One of the principal bills that were finally enacted was the cattle-diseases act, and the provisions based on the Government by the Tories. It was introduced into the upper house February 14. The Duke of Richmond obtained a large majority for his amendments, throwing upon the Privy Council the responsibility of determining whether the laws of foreign coun- tries were strict enough to justify the admission of imports instead of resting satisfied with the protection afforded by foreign laws unless there was proof of the contrary, and removing the limitation of two years given to the bill by the Government. In the House Mr.Dodson proposed to restore the bill to its original shape, but the committee decided against the minis- terial proposal, and this decision, with some hesitation, was accepted by the Government. The bill became law May 19. In the early part of the session the Government was defeated by the same combination that insisted on prece- dence for the cattle-diseases bill, who carried a resolution in favor of immediate relief for local tax-payers. Mr. Broadhurst proposed a bill for the enfranchisement of leaseholders, which gave an opportunity to Lord Randolph Churchill to avow advanced views on the sub- ject of the rights of property as the representa- tive of the Tory Democracy. The Marquis of Salisbury brought forward the project of social reform of which he is the special advocate, that of securing better dwellings for the working-people, and a parliamentary commission of both houses was appointed to inquire into the hous- ing of the poor. Parliament was prorogued August 14. Of the fifty-four Government measures that became law the most impor- tant were the conversion of stock act for lightening the burden of the national debt, the act for the repression of corrupt practices at munici- pal elections, the act relating to the con- contagious diseases of animals imported from abroad, and the act for the extension of the hours of polling in boroughs. Among the minor acts was one enabling a husband or a wife to give evidence in criminal proceedings instituted by either against the other for the protection of their person or property. This is a supple- ment to the act of 1889, conferring rights to hold separate estates on married women. Another act substitutes fines for imprisonment as a penalty for disobeying decrees for the resi- tuation of conjugal rights. The Manchester ship-canal bill was pressed to a second reading, though strongly opposed. The objections to the project are based upon the danger to the navigation of the Mersey. The people of Liver- pool have been taught to believe that if the canal is made, the channel of the river will silt up and Liverpool will share the fate of Chester and become an inland city. Captain Eadu, the engineer of the Mississippi improvement, who was retained by the promoters of the enterprise, pronounced these fears groundless. A law was passed prohibiting the erection of buildings ex- cept for religious purposes on disused burial- grounds, putting an end to the practice of speculative builders of acquiring leases of old cemeteries in London for the erection of dwelling-houses. Another of the minor en-
actments prohibits overcrowding on canal-boats, and provides for the education of the boatmen’s children. Others limit summary jurisdiction in England, and, as regards infant offenders in Ireland, enable public corporations to execute trust deeds in respect to public libraries and museums, give building societies and their members access to courts for adjudication of disputes with the society respecting mortgages and contracts, lengthening the period of naval service by two years, and restricting the powers of naval courts-martial.

The Debate on the Franchise Bill.—The representation of the people bill was introduced in the House of Commons by the Prime Minister on February 28. Declaring that the enfranchisement of capable citizens was an addition to the strength of the state, he recounted the pledges given by the Liberal party, and described the prevailing sentiment of the country in favor of the extension of suffrage. The ministerial measure left the existing rights of franchise in the main untouched. Though there was a provision to check the extension of “fagot votes,” i.e., votes conferred by the possession of real estate of insignificant value acquired for the purpose, yet the simple property qualification was not assailed, the condition of residence was not insisted upon, nor was any attempt made to carry out the doctrine, widely held among Liberals, of “one man, one vote.” Under the existing system many property-holders have ten or a dozen votes in different boroughs, and some as many as twenty. The bill proposed to enlarge the £10 occupation franchise in boroughs, so as to make it include land without buildings, and to create a service franchise that would confer votes on householders that occupy tenements in virtue of some office or appointment and do not pay rent. The chief feature of the measure was the extension of the borough franchise, or the household and lodger franchises, and the franchise derived from the £10 and the £100 limitation thus enlarged, to the counties. This is the most important enlargement of the franchise since the reform act, increasing the electorate of the United Kingdom from 3,900,000 to 6,000,000. The act of 1868 added only 500,000 to the voting population, while the act of 1867 increased the electorate from 1,186,000 to 2,488,000. Mr. Gladstone refused to deal with redistribution in the same measure, on the ground that it was impossible for Parliament to get through with the whole question, as applied to the entire kingdom, in a single session. He insisted upon the extension of the franchise being granted in Ireland as well as in England and Scotland. He indicated the general features of the measure for the redistribution of seats, which was to be the first order of business in 1885. The distinction between borough and county districts would be preserved, and the reapportionment would stop short of equal electoral districts. The representation of Scotland would be enlarged and that of Ireland not decreased, because those portions of the United Kingdom needed a relatively larger representation to secure attention to their wants. The Conservatives assailed neither the principle nor the scope of the proposed enfranchisement, but opposed the measure because it was not accompanied with a redistribution bill. Lord John Manners’s amendment condemning the measure as imperfect, and refusing to go on with it until the Government disclosed their scheme of redistribution, was rejected by a majority of 346 to 210, and the bill was read a second time April 7. The inclusion of women, moved by Mr. Woodall, was supported not only by Northcote and Manners, who battled by the side of Disraeli for woman suffrage, but by Conservatives that were formerly opponents of the principle, while many Liberals, including some members of the Government, abstained from voting in disregard of a peremptory whip. Mr. Gladstone said that it involved a new question, which, as affecting the political status of half a million persons, ought to go before the country. On the third reading, June 23, Mr. Gladstone uttered an impassioned warning of the crisis that the Opposition would produce if they carried out their avowed intention of throwing out the bill in the upper House. The Opposition, after asserting that the Lords would be justified in demanding the presentation of a complete scheme, left the House and allowed the bill to pass nem. con., as was recorded in the journals on Mr. Gladstone’s suggestion. The franchise bill was read a first time in the Lords, June 27. Lord Cairns gave notice of an amendment to the effect that the House, while prepared to discuss any well-considered and complete scheme for the extension of the franchise, could not assent to a measure without provision for redistribution or any security that the enfranchisement would not go into operation before redistribution became law. Some Lords objected to this course as reckless and unnecessary, but the Duke of Richmond and the main body of the party supported the amendment, and the Marquis of Salisbury insisted on again precipitating a conflict between the two houses, intimating that the Lords would only bow to the will of the country as manifested in a fresh general election. The amendment was carried on the second reading by 205 to 148 votes. To show that the question at issue between the two parties was one of procedure and not of principle, the House of Lords recorded a resolution expressing its assent to the principles of representation contained in the bill. Though in form the Cairns amendment was not a rejection of the measure, it was thus intended and accepted. The ministry at once decreed a “massacre of the innocents,” which embraced nearly the whole legislative work of the year, in order to postpone Parliament and arrange for an autumn session. Before the division on the second meeting
nsville approached Lord Cairns with pro-
for a compromise. The ministry offered in and press forward a redistribution the ensuing session, but the Conserva-
evomitted the postponement of the op-
of the franchise bill until Jan. 1, 1886, Parliament fixed an earlier date.

Franchise agitation.—After the vote of the and during the recess, England was con-
with political excitement. The agitation abolition of the House of Lords was re-
The tide of popular excitement rose than after the rejection of the Irish and the impressive admonition of Gladstone close of the debate on the franchise bill impulse to the movement. The Radi-
ders were more aggressive and unre-
tothan before. The venerable John denounced the Peers as an “arrogant patriotic oligarchy,” and avowed that, English freedom be a fraud and a the English people will know how to ith a titled and hereditary chamber arrogance and whose class selfishness a been at war with the highest inter-
nation.” John Morley uttered the word of the day when he declared that wer on earth can henceforth separate sion of mending the House of Com-
mon that other question of mending or the House of Lords.” On July 31 a setting of over 30,000 men took place e Park, London. Similar demonstra-
other parts of the country revealed a al current of feeling among the English acy hostile to an hereditary chamber. quis of Salisbury denounced the Lib-
“descending into the streets,” and erized the popular manifestations as nes. The T.4., for them, soon sought the support of popular stitions, and in the course of the cam-
brought together assemblages that ap-
ized in their dimensions those of the Lib-
ations. Lord Joseph Churchill did good service to his and by the magnitude of his popular fol-
demonstrated the vigor of the progress-
ool of Conservatism of which he is the st. The Conservative manifestations ad better the name of picnics than those Liberals, because, as a rule, they were in public meetings, but were guarded by ice of tickets of admission from disturb-
and interruption, and were often ren-
tivating by feasts, excursion trains, and ections of largess. These question-
d novel adjuncts to political assembles ad the scorn of their opponents. One large Conservative demonstrations was Birmingham in October. The Liber-
anged a counter-demonstration in ad-
grounds, and, breaking down a particu-
terrupted the feasting and speech-mak-
ning the scene to riot and havoc.

conservatives, although many of them, when the measure was first proposed, had op-
posed the enfranchisement of the rural house-
holders as a dangerous advance toward de-
mocracy, now posited as much zeal as the Liberals for the extension of suffrage. They attacked the foreign policy of the Government and their legislative impotency in order to show that their mandate was exhausted, their energy run down, and gave color to the Mar-
quis of Salisbury's demand that they should go to the country on a question of “the re-
vision of the Constitution.” They were ac-
cused of a design to “gerrymander” the con-
stituencies and forcing the Conservatives to accept a redistribution unfavorable to their party interests rather than leave the districts as they were with a widened franchise. Mr. Gladstone declared himself that he must have the franchise bill as a means of pressure upon Parliament to pass a redistribution bill.

The Autumn Session.—The autumn session was opened on October 28. The negotiations with the Conservative leaders were continued during the recess, but it was not until some weeks after Parliament opened that an agree-
ment was reached. The Government brought in a redistribution bill as soon as the franchise bill was passed. As it was based on the compact made between the leaders in their secret conferences, it passed smoothly through all its stages and became law before the adjournment for the Christmas holidays. The new grants for naval construction, the vote for the Soudan operations, and other matters, were also dis-
pased of. In the negotiations with the Oppo-
sition leaders concerning redistribution, the Government were desirous of increasing the number of two-member districts, while the Conservatives advocated a system of grouping boroughs and proportional representation. On both sides of the House there were members long committed to the principle of minority representation. The Government expressed a willingness to adopt single-member divi-
sions. This compromise was reached by the Conservatives, who deemed that it would give larger scope to the influence of property and of local social influences. Many were opposed to this plan, apart from all party considerations, because they considered that it would tend to lower the character of parliamentary repre-
sentation, since, if the country were cut up into petty wards, each returning its member, the wards would be likely to fall into the American custom of choosing residents to re-
present them, men of merely local prominence, politicians of the vestryman type, instead of going outside to obtain men of approved abil-
ity and national distinction. It was the same question as that between list and district vot-
ing which divided France. Mr. L. H. Court-
ney resigned his office of Financial Secretary because of this, and because no provision was made for minority representation.

The Extension of the Franchise.—The franchise bill extends the borough franchises to the
counties. The borough franchise created by the act of 1832 was limited by a property qualification of £10 clear annual income from real estate. This takes the place of the £50 renting qualification and the £12 rate qualification established in the rural districts by the acts of 1832 and 1867. The household and lodger franchises established in 1867 in the boroughs created then the principal accession of new voters, and will have the same effect in the counties by their extension to the entire electorate under the new act. Every citizen of full age and not legally incapacitated, who has occupied a house for twelve months and paid his rates, or who is the inmate of a house under conditions that permit of classing him as a lodger, as defined by law, can have his name placed on the register as a voter for the district, whether borough or county, in which he resides. The class of householders is increased by those that occupy any dwelling by virtue of any office, service, or employment, and have exclusive possession of the premises. The act contains disfranchising provisions that are intended to restrict multiple voting. In cases of joint ownership, except as regards partners in business, or of persons that have derived their interest by inheritance or marriage, only one person will be allowed to register. The equalization of the borough and county franchise will add over 1,300,000 voters to the register in England and Wales, over 200,000 in Scotland, and over 400,000 in Ireland. Of the 6,000,000 voters in the United Kingdom, four fifths are qualified simply as householders. The act goes into effect nominally Jan. 1, 1885, but the newly enfranchised electors will not be admitted to vote before the beginning of 1886, as their names cannot be recorded by August 1st of 1885.

The Redistribution of Seats.—The reapportionment of electoral districts increases the membership of the House of Commons from 650 to 670. Of the 18 additional seats England is to receive 10, the number of representatives from Ireland and Wales remaining the same as before. Boroughs containing fewer than 13,000 inhabitants lose their separate representation; boroughs with fewer than 50,000 will be represented by one member instead of two; boroughs with from 50,000 to 165,000 will still send two members; and boroughs with over 165,000 inhabitants will receive additional members in the proportion of one for every 50,000 or 50,000 inhabitants in excess of that number. All boroughs returning more than one member, except those which retain the old two-member system, by virtue of containing between 50,000 and 165,000 inhabitants, and counties returning more than one member, are to be divided into as many separate districts as there are members to be returned. The seats lost to districts that are disfranchised are to be divided among the boroughs that are under-represented. The bill establishes generally the single-member system in place of the two-member system, which was the rule. Except by dividing constituencies into districts returning one member each, there is no provision for proportional or minority representation. There are 78 boroughs in England, about a dozen of them returning two members, the rest one which are disfranchised, as containing fewer than 18,000 inhabitants; 3 of the Scotch group of boroughs that lost their representation and 22 Irish boroughs. The number of seats released is altogether 111 under this schedule. The number of boroughs that lose one member on account of having fewer than 50,000 inhabitants is 34 in England and Wales, and 8 in Ireland. The totally disfranchised boroughs are represented in the present Parliament by 54 Liberals, 44 Conservatives, and 4 Home-Rulers; the boroughs losing one member by 42 Liberals, 17 Conservatives, and 6 Home-Rulers. The total number of seats set free under both schedules is 160. In the new Parliament England will have 465 of the 670 seats; Wales 30, Scotland 72, and Ireland 108. The metropolitan area formerly divided into 10 boroughs, represented by 32 members, the city sending 4 and the nine metropolitan boroughs 9 each. Henceforth the metropolitan area is increased by 7 boroughs taken from the adjoining counties, will consist of 39 boroughs, represented by 62 members. The boroughs are all divided into single-member districts, except the City of London, which will have two member, as it contains 80,000 inhabitants. It was a Conservative borough, and the reduction of its representation in accordance with the population standard was a cause of complaint because it counts as many as 29,327 registered electors. The representation of Liverpool is increased from 6 to 8 members; Birmingham will have 15 instead of 3 members; Manchester 6 instead of 3; Leeds and Sheffield 5 each, instead of 3; Bristol 4, instead of 2; Bradford, 1 instead of 3; Nottingham, 2 instead of 1; Salford, and Wolverhampton 1 each, instead of 2; Newcastle, 2 instead of 1. In Scotland, the representation of Edinburgh is raised from 2 members to 4, Glasgow from 3 to 7, Aberdeen from 1 to 2, and In Ireland, Dublin and Belfast from 3 to 4 members each. Outside of the metropolis there are 5 new boroughs created, represented by 1 member each. The English counties, hitherto represented by 172 members, will have 241, the largest increase being in Yorkshire and Lancashire. The Irish counties have their representation increased from 63 to 85 members. Scotland receives 7 additional county members. While some parts of the country, such as Lancashire, have their representation largely increased, others, like Dorset, suffer a large diminution. Prominent members on both sides were affected by disfranchisement. 

Paradite Attacks on the Irish Executive.—The Irish party in Parliament kept up an incessant attack on that of the Government during the year. The Maamtrasna murder-trials and the
case of certain officials of the Irish administration that were indicted for immorality, were the leading subjects of animadversion. The aged Myres Joyce and others were convicted and hanged for the murder of the Joyce family in Maastricht, committed Aug. 17, 1882. Two of the convicted murderers made dying declarations, admitting their own guilt and exculpating Myres Joyce. Two informers subsequently confessed to priests that their testimony was false, and that six of the accused men were innocent. The Catholic Archbishop of Tuam interviewed these men and other witnesses, and, having convinced himself that there was foul play, petitioned Earl Spencer to investigate the affair. There was great excitement over the matter in Ireland before it was brought up in Parliament by Mr. Harrington at the beginning of the autumn session. The Irish Home-Rulers accused the prosecuting attorneys of suppressing evidence in favor of the convicted men, and of taking no steps to bring the guilty ones to justice, though they had evidence against them sufficient to warrant proceedings. Under the direction of George Bolton, the Crown solicitor, the informers were allowed to listen to the testimony of the other witnesses, and were in a measure coached by the law officers to make their stories agree. The testimony of the boy, Patrick Joyce, the only survivor of the murdered family, was suppressed as far as it conflicted with the other accounts. The murder was actually committed by hired assassins at the instigation of a money-lender named Casey, who was actuated by ordinary criminal motives. He was arrested the morning after the murder, but immediately released. The Irish party charged that the Crown officers, in their desire to make out a case of agrarian murder, chose to proceed against the men accused by suborned witnesses, and when exculpatory and contradictory evidence came out in the preliminary examinations it was suppressed, as well as evidence tending against the actual criminals. Mr. Harrington also possessed documentary evidence, showing that the jury was packed by the counsel for the Crown, who kept a memorandum of the religious and political convictions of all the jurors on the panel from which the petit jury was drawn, and the likelihood of their voting for conviction. Accusations of practices like these were made against the prosecuting officers of the Crown, and especially George Bolton, their chief. About the time of the renewal of the crimes act, and afterward on the reopening of Parliament. Reports of Bolton’s lack of principle in his relations with his wife and with his creditors were repeated in Parliament to show his unfitness for public office. In the trial of Secretary Cornwall, of the Irish post-office, and other Dublin officials for unnatural crime, Cornwall was discharged on the ground that he had softening of the brain when the crimes were committed, and was quickly restored after the conclusion of the trials. The case was not pressed against any of the prisoners, for the sake of saving the Castle government from odium, as it seemed to the Home-Rulers. Their attacks drove Mr. Trevelyan to resign, a result that was no satisfaction to the Irish leaders, who respected the personal character of the Irish Secretary, and only assailed the system with which he, and in a higher degree the Viceroy, was identified.

Dynamite Conspiracies. — The Irish conspirators that carry on a dynamite “war” against England were not all suppressed when Whitehead and his accomplices were brought to justice in 1883. There were signs of fresh plots hatched in Dublin, New York, Paris, and Brussels, and of the activity of agents in London, Liverpool, and Birmingham. In Dublin, besides the “Invincibles,” the existence of a band called the “Avengers” was reported, whose task was the “removal” of obnoxious witnesses, judges, and jurors. A quantity of infernal machines and dynamite flasks and grenades was discovered at Birmingham, placed there by one Daly, who was arrested at Liverpool with dynamite bombs on his person. Daly, an old Fenian, was convicted and sentenced for life, and his fellow-conspirator Egan for twenty years. On Feb. 28, 1884, a violent explosion occurred at the Victoria station in London, with which these conspirators were probably connected, though no direct evidence was adduced. The possession of the bombs was construed by the court as an act of treason-felony, as proving an intention to levy war against the Queen. The explosion at the Victoria station was followed by attempts at three or four other stations. Shortly before, occurred explosions at Edgeware Road and Westminster, on the Underground Railroad. Later explosions took place in St. Jame's and in the Scotland Yard, under the very eyes of the police. In none of these cases was there any trace found of the perpetrators. These occurred on the night of May 30, just before the explosion in Scotland Yard, and a similiar explosion made on the building of the Junior Carlton Club. The stone and iron work at the rear entrance of the club-house in St. James's Square was shattered and the kitchen destroyed. In Scotland Yard the destruction was greater, although the quantity of dynamite used was probably the same, and uniform with that found in black bags in the attempt to wreck several railway-stations on February 28. A portion of the building of the Criminal Investigation Department, consisting of heavy brick and stone work, was brought down by the force of the explosion. Yet the chief damage was done to a public-house opposite. At the same time a quantity of dynamite was found at the foot of the Nelson monument. This was of the kind known as “American.” On the same night a third explosion occurred near a Government building in St. James's Square. The explosions followed one another in quick succession at about nine o'clock in the evening. On Decem-
ber 13 the dynamite war was renewed by an explosion of a large quantity of dynamite, estimated to be about fifty pounds, against one of the piers of London Bridge. The stone-work under the water was found to be cracked and disturbed. The lamp-posts on the bridge were twisted out of shape, the glass in warehouses on both sides of the river was broken, and several persons were knocked down, but none seriously injured. In January, 1885, occurred the most serious of the dynamite outrages. On one of the days when visitors are admitted to view the Houses of Parliament a package of dynamite was exploded near the Speaker’s chair, and another in the lobby. The woodwork of the beaches and gallery in the House of Commons was blown into splinters, and the stone carvings in the entrance-hall still more seriously damaged. A policeman who attempted to remove the infernal machine in the chamber was seriously injured. Another policeman was wounded, but none of the visitors sustained injury. The dynamite was supposed to have been brought into the building by woman visitors. At the same hour there was an explosion in the Tower of London, which was crowded at the time with sightseers, of whom, however, none were seriously harmed. The police were unable to trace any of these crimes to their authors.

The Condition of Ireland. — The agricultural condition of Ireland has deteriorated since the passage of the land act in a marked degree. The landlords have ceased to expend anything for keeping up or improving their lands. Much of the improvement in cultivation that took place after 1849 has been lost. Arable land has steadily relapsed into pasture, while the grass has grown thin and become overgrown with rushes. Nine cold and damp years have lowered the quality of the grass and the fertility of the soil. The position of the tenant farmers has been much bettered by the land law, yet they have been induced to put these live-stock, nor have they the ready money to employ a sufficient labor at its price, which is double that which formerly prevailed, and about the same as in England. The large emigration has caused the rise in wages. The condition of the people is better than it has been for generations. Beggars have disappeared, and, except on the western seacoast, the people are well fed and clad comfortably. The agricultural statistics for 1884 show that the area under crops was 4,873,969 acres, 1.3 per cent. less than in 1883. The decrease in Leinster was 1.8, in Munster 0.4, in Ulster 1.7, in Connaught 0.9 per cent. The area under grass was 10,346,508 acres, an increase of 183,041 acres; the extent of bog, marsh, and barren mountain land 4,758,810 acres, a decrease of 89,725 acres; the area under tillage 2,910,389 acres, a decrease of 94,678 acres. There was a decrease in the acreage of flax, potatoes, and grain crops, as well as in all the cereal crops. The farmers evinced no satisfaction in Mr. Trewellyan’s land-purchase bill, which proposed to advance them the money to acquire their holdings at twenty years’ purchase by paying their former rent for that period, or their present rent for thirty-three years, believing that the landlords would in the end accept four or five years’ purchase. Although there was a complete prostration of the market for the sale of land, the price of tenant rights constantly rose in the market. In agrarian crime there was a mitigation and diminution, which was greeted with unabated satisfaction in the address at the opening of the autumn session.

The Skye crofters. — The royal commission appointed to inquire into the condition of the Skye crofters, reported in favor of legislation for the relief of the peasantry of the western Highlands. Within a generation rents had been largely raised, the pasturage of the people had been taken away for sheep-walks and deer-forests, so that they could no longer raise sheep for clothing themselves, and their women had to take the place of ponies, and notice to quit had doubled. The friends of the crofters organized an agitation among them, and on their behalf throughout the country. When the parliamentary session passed without affording a prospect for redress, the crofters determined to attempt the tactics that had succeeded in Ireland. The local authorities showed a zeal for repression, which betrayed a desire to provoke a conflict. When the Crofters’ League forced three persons to attend a meeting against their will and to give an account of their conduct, a re-enforcement of the police was asked for, and six policemen were sent to Skye. They were met upon landing by a large body of peasants armed with sticks, and compelled to re-embark. The Government then sent a large force of police and two hundred marines, while the crofters organized in military fashion and patrolled the island to prevent the landing of police or soldiers. The friends of the crofters narrate to them of the folly of such a conflict, so that a collision was avoided. Mr. Macfarlane’s resolution in favor of giving effect to the recommendations of the royal commissioners was adopted by the House of Commons.

A hundred years ago the Highlanders were a prosperous and contented class. They had free grazing on the hills, which were covered with their black cattle, although the law about 1745 had transferred to their chiefs and landlords all the communal rights of the clan. When sheep-farming was introduced, the chiefs found these proprietary rights a source of great wealth, and they consequently drove their clansmen off the best lands. Grouse-shooting doubled the incomes of the landlords, and shut the people out of a large part of the area that was left to them. The conversion of the country into deer-forests, which has taken place recently, has deprived them of the last of their grazing-lands, and crowded them altogether on their cramped family crofts, where, when the
fish do not run and their little patches of oats fail to ripen, they have to endure periodical starvation. Among the suggestions of the royal commissioners was a proposition to restore the communal character of the pastur- lands, which were taken from the people and bestowed upon the loyal chiefs as a reward after the insurrection of the Pretender. The restoration of the Highland township or village community, the construction of harbors and piers for the fishing population, loans for the purchase of boats and tackle suitable for deep- sea fishing, improved means of transportation to the markets, and subventions in aid of emi- gration, are the remedies suggested by the royal commission for the distress in the western Highlands.

The Employers’ Liability Act.—The act holding employers liable for accidents occurring to workmen from the lack of proper precautions for their safety, or other negligence, was de- cided at the time of its passage, in 1881, as a measure that would embitter the relations between workmen and employers, and greatly no rease the financial risks in the manufacturing branches. The effect of the act has been insignificant, except in inducing masters in dangerous employment to look somewhat more carefully to the condition of their ma- chinery, and supply the precautions required by law. The courts decided that it did not destroy the doctrine of “common employment,” to the great disappointment of the work- ing-men. The number of suits brought in three years was only 448, the total amount of dam- ages awarded 218,124. The principal reason why the effect of the act has been so insignifi- cant is that employers induce their workmen to sign away their rights under the act. On this account the trade-unionists demand that the law should be amended so as to prevent employers from contracting themselves out of their statutory liability.

Industrial Depression.—The year 1884 was marked by an increasing depression in the manufacturing trades that in some branches amounted to almost complete stagnation. The ship-building and subsidiary trades had long been idle, and the iron and coal industries, de- pending largely on this branch and on foreign orders for iron, which have been few since the decline of railroad-building in the United States and the development of the iron industries of the Continent, were greatly depressed. In the ship-building districts most of the working-men were out of work, and the reserve funds of their trade-unions were nearly exhausted at the approach of winter. The engineering branches in Lancashire resorted to short time, and the cotton-trade was dull. In South Wales some of the largest mining establishments closed down altogether. In the industrial districts of the metropolis, about 80 per cent. of the wage-earning classes were estimated to be out of work. The depression of the sugar indus- try in East London threw many out of employ- ment. It was reported in the autumn that 11,000 men were out of work in Sunderland, 4,000 at Glasgow, 25,000 on the Tyne and Wear, 10,000 in Monmouthshire and Glamor- ganshire, and that, of the 60,000 men employed on the London docks, one third were idle, and one third employed only four days in the week. Half-time was becoming the rule in Lancashire, Staffordshire, and the other great industrial centers. The depression in the sugar-trade, and the crisis in the sugar-growing industry of the British West India Islands, led to an agita- tion for countervailing duties to offset the for- eign bounties. Such duties, it was argued, would not be opposed to the doctrine of free trade. The ministry inclined to the view that if the Germans were willing to furnish the people of England with sugar for less than it cost, it would not be to the general interest of the nation to refuse it for the sake of a limited class.

The Crisis in the Sugar-Trade.—The West India sugar-planters were reduced to sore financial straits by the competition of beet-sugar in the English market. They were threatened with total ruin from the loss of the American mar- ket also, in consequence of the Spanish-Ameri- can treaty. They demanded that the English custom should be restored to them by means of countervailing duties for their protection, and, when the home Government turned a deaf ear to their complaints, declared that the Brit- ish connection was worthless to them, and an- nexation to the United States their only hope.

Annexation to Canada was also discussed, but with less favor, because the Canadian market is too small to consume their sugar. In a report drawn up for the Board of Trade, Mr. Giffen said that the production of sugar, omitting China, India, and other outlying coun- tries, had increased from 1,423,000 tons in 1868–69 to 8,564,000 tons in 1880–82, and over 4,000,000 tons in 1885. British cane-sugar in- creased from 281,000 tons in the former period to 419,000 tons a year in 1880–82; fore- 

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GREAT BRITAIN AND IRELAND.

planters. At length, in October, negotiations were opened at Washington for a treaty of reciprocity between the United States and the West India colonies. The aim was to induce the United States Government to reduce 50 per cent. the duties on raw sugar in consideration of the abolition of the import duties on flour, lumber, corn, kerosene, lard, etc. The import trade of the West India Islands, not only in these peculiarly American products, but in many manufactured articles, has long been mainly with the United States, while the United States long ago supplied Great Britain as the chief customer for West Indian sugar. The American Government demanded a wider basis for the treaty, and the exclusion of the reciprocity arrangements from the most-favored-nation clause in treaties with other nations. On December 4 a draft of a treaty was forwarded to Lord Granville. Sir John Lubbock estimated that the Colonial Government would lose $300,000 revenue to $12,500,000 sacrificed by the United States. Yet the English Government refused to entertain the proposal, declaring that the concessions were more apparent than real.

Commercial Treaty with Mexico.—After a long interruption of diplomatic relations with Mexico, they were resumed after protracted negotiations, and a preliminary agreement for a treaty of commerce was signed. Pending the conclusion of a new treaty of commerce and navigation, this convention secures the most-favored-nation treatment for six years. The formal reopening of diplomatic intercourse was proposed in a letter of Lord Granville's, dated April 19, 1883, and the agreement was signed Aug. 6, 1884.

The Colonies.—The British colonial possessions cover about one seventh of the land surface of the globe. They are grouped in forty administrative divisions, and are divided into three general classes. The colonies, with representative institutions, possess self-government in all matters except such as are deemed to be of imperial concern, over which the Crown retains the right of veto. The colonies possessing representative government are controlled in their administrative affairs by the Colonial Office. India and the Crown colonies have no effective representative institutions, but are under the absolute authority of the British Government and its representatives. The Crown colonies are Heligoland, Gibraltar, Malta, Falkland Islands, Giana, Trinidad, Ascension, Mauritius, St. Helena, Sierra Leone, Aden and Perim, Cyprus, Hong-Kong, Labuan, the Straits Settlements, the Fijian Islands, Rotumah, Jamaica, and Turks Islands, Gambia, the Gold Coast, and Lagos. Those possessing representative government are Western Australia, Natal, Ceylon, and the Bahamas, Bermuda, Windward, and Leeward Islands. The other colonies control their own legislative and administrative affairs. The table on page 381 gives the area and population of the colonies, dependencies, and military and naval stations composing the British colonial empire, with the statistics of commerce and finance in most of the colonies for 1883.

The railroad mileage in operation in British colonies at the end of 1883 was as follows:

<table>
<thead>
<tr>
<th>COLONIES</th>
<th>MILEAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>British India</td>
<td>9,244</td>
</tr>
<tr>
<td>Mauritius</td>
<td>7,900</td>
</tr>
<tr>
<td>Canada</td>
<td>5,500</td>
</tr>
<tr>
<td>Australia</td>
<td>6,071</td>
</tr>
<tr>
<td>Jamaica</td>
<td>2,200</td>
</tr>
<tr>
<td>Cape Colony</td>
<td>860</td>
</tr>
<tr>
<td>Ceylon</td>
<td>716</td>
</tr>
<tr>
<td>Natal</td>
<td>884</td>
</tr>
<tr>
<td>Total</td>
<td>25,713</td>
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</table>

The telegraph lines of India, Ceylon, Australasia, and Cape Colony, had an aggregate length of 55,936 miles.

Annexations.—After the declaration of a German protectorate over the Cameroons and Little Popo, Consul-General Hewitt proclaimed British protectorate, in August, over the lower Niger basin, which act was confirmed by the Government. At the Congo Conference, England agreed to make the Niger an international stream, but insisted on retaining the administration of the police and supervision, to which the powers finally acceded. The trade of the Niger delta is entirely in English hands, as one of the large French companies, recently established, was in 1884 consolidated with the English company in possession of the field, while the other has retired from the lower Niger. In the river and its mouths British gunboats have maintained order, the slave-trade has been abated by British efforts, and the English consul has concluded numerous treaties with the tribes on the Niger and Bunu. In South Africa a protectorate was declared over Bechuanaland (see Cape Colony), and in November the English Government yielded to the desires of the Australians, to the extent of proclaiming the annexation of the southern shore of Papua (see Papua).

Imperial Federation.—The movement for a federal union between Great Britain and the colonies gains force among Englishmen and colonists alike. A conference to consider the question of imperial federation, which met in London July 24, included many of the prominent English statesmen of both political parties, as well as representatives, official and unofficial, of the principal colonies. Englishmen who look into the future feel that, if the colonies separate from the mother-country, Great Britain, with France and Germany, will fall back into the second rank of nations, while the United States and Russia will take the lead in power and importance. The difficulties in the way of federal union lie principally in the separation of imperial from domestic concerns. The colonies are willing and desire now to bear their fair share of the cost of the defense of the empire, and of all expenditures incurred for the common benefit, provided that they have a voice in determining questions of imperial policy. The colonists have felt aggrieved at the selfish indifference shown by the Eng-
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>S. America</td>
<td>49,500</td>
<td>2,000</td>
<td>228</td>
<td>864</td>
<td>3,615</td>
<td>5,095</td>
<td>6,200</td>
<td></td>
</tr>
<tr>
<td>British possessions</td>
<td>29,000</td>
<td>10,000</td>
<td>13</td>
<td>1,000</td>
<td>49</td>
<td>12</td>
<td>182</td>
<td>49</td>
</tr>
<tr>
<td>British possessions</td>
<td>13,490</td>
<td>3,000</td>
<td>2</td>
<td>100</td>
<td>50</td>
<td>100</td>
<td>191</td>
<td>98</td>
</tr>
<tr>
<td>British possessions</td>
<td>8,470</td>
<td>2,000</td>
<td>250</td>
<td>600</td>
<td>2,600</td>
<td>4,000</td>
<td>5,200</td>
<td></td>
</tr>
<tr>
<td>British possessions</td>
<td>390,000</td>
<td>15,000</td>
<td>1,500</td>
<td>4,500</td>
<td>15,000</td>
<td>21,000</td>
<td>27,000</td>
<td></td>
</tr>
</tbody>
</table>

Government and people to the objects they have at heart. A coolness arose in the Dominion and the mother-country about the protectorate policy for the protection of Canadian manufactures. The demands are now exasperated at the denial of annexation schemes. The inhabitants of British Antilles have a crying grievance from the home Government of aid for suffering sugar interest. The main point, however, for the desire of federal union, which has now become a demand, on the part of the colonies, is the fear that the European relations of England will involve her in wars in which they will be liable to attack and conquest. The first resolution presented in the conference for imperial cooperation affirmed that the political relations between Great Britain and her colonies must inevitably lead to ultimate federation or disintegration, and that in order to avert the latter and secure the permanent unity of the empire, some form of federation is indisputable. This resolution was dropped at the
suggestion of Sir Charles Tupper, the Canadian High Commissioner in London, because it would strengthen the advocates of separation.

GREECE, a kingdom of southeastern Europe. (For details relating to area, territorial divisions, population, etc., see "Annual Cyclopaedia" for 1883.)

Government.—The reigning monarch is George I, King of the Hellenes. The Cabinet is composed of the following ministers: President of the Council, Minister of Finance and War, Mr. C. Trikoupis; Justice and Foreign Affairs, since July 21, 1888, Mr. Contostavlos; Interior, Mr. C. Lombardos; Public Worship, Mr. Voulpio-tis, since July 24, 1888; Navy, Vice-Admiral Tombazis, since July 21, 1888.

The President of the Chamber of Deputies is Mr. P. Kalligas.

The Greek Consul-General at New York is D. N. Botassi. The American Consul at the Piraeus is C. Martelou, and at Patras E. Hancock.

Army.—The army consists of 30,550 men of all arms, with 72 field-pieces, commanded by 1,653 officers, with 5,073 subaltern officers and musicians, and employing 5,548 horses and mules.

Navy.—The navy numbers twenty-three vessels, including two iron-clad steamers, two iron corvettes; eight gunboats, two of which are iron-clad, and six torpedo-boats furnished with seventy torpedoes; the aggregate tonnage of the fleet being 8,668, of tother 6,920 horsepower, mounting seventy-five guns, and manned by 1,608 marines. There are besides three brigs, several coast craft, and fifteen royal sloops. Total number of men enlisted in the navy, 3,637. There are in course of construction four steam frigates and three steam brigs. Both army and navy are to be transformed after the French model, and the French vice-admiral Lejeune is to reorganize the navy.

National Indebtedness.—The public debt stood, on Jan. 1, 1884, as follows:

FOREIGN DEBT.

<table>
<thead>
<tr>
<th>Description</th>
<th>1884</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loans of 1824 and 1829, consolidated as per agreement of Sept. 4, 1874, and amounting to drachmas or francs</td>
<td>80,000,000</td>
<td>80,000,000</td>
</tr>
<tr>
<td>Loan of 1872, guaranteed by Great Britain, France, and Russia</td>
<td>20,000,000</td>
<td>20,000,000</td>
</tr>
<tr>
<td>Total</td>
<td>100,000,000</td>
<td>100,000,000</td>
</tr>
</tbody>
</table>

HOME DEBT.

<table>
<thead>
<tr>
<th>Description</th>
<th>1884</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indemnity to the islands of Hydra, Spetsi, etc.</td>
<td>14,400,000</td>
<td>14,400,000</td>
</tr>
<tr>
<td>Indemnity to the heirs of King Otto</td>
<td>8,760,000</td>
<td>8,760,000</td>
</tr>
<tr>
<td>Six-per-cent loan of 1869, originally 6,000,000 drachmas</td>
<td>8,292,100</td>
<td>8,292,100</td>
</tr>
<tr>
<td>Nine-per-cent loan of 1867 and 1868, originally 8,240,000 drachmas</td>
<td>8,240,000</td>
<td>8,240,000</td>
</tr>
<tr>
<td>Eight-per-cent loan of 1874, originally 6,000,000 drachmas</td>
<td>8,115,500</td>
<td>8,115,500</td>
</tr>
<tr>
<td>Six-per-cent loan of 1874, originally 10,000,000 drachmas</td>
<td>9,000,000</td>
<td>9,000,000</td>
</tr>
<tr>
<td>Six-per-cent loan of 1876, originally 8,000,000 drachmas</td>
<td>7,909,700</td>
<td>7,909,700</td>
</tr>
<tr>
<td>Six-per-cent loan of 1877, originally 6,000,000 drachmas</td>
<td>5,915,000</td>
<td>5,915,000</td>
</tr>
<tr>
<td>Five-per-cent loan of 1881, originally 20,000,000, 116,615,000 drachmas</td>
<td>116,615,000</td>
<td>116,615,000</td>
</tr>
<tr>
<td>Loan to cancel bonded indebtedness to banks</td>
<td>170,000,000</td>
<td>170,000,000</td>
</tr>
<tr>
<td>Total</td>
<td>417,909,100</td>
<td>417,909,100</td>
</tr>
</tbody>
</table>

In January, 1885, it was announced at Paris that the Greek Government would soon appear in the European money market with a railroad loan for 120,000,000 francs, which amount represents the railroad bonds that the Government has undertaken to guarantee.

The principal object of the 170,000,000 drachma loan being the resumption of specie payments, this measure had been gradually prepared in 1884. The syndicate of bankers who had assumed the floating of the loan had, early in August, made a payment in advance of 14,000,000 francs in gold to the National Bank, free Paris, and to other Greek banks in bills on Paris of 4,000,000 francs. In October, a further amount of 72,000,000 francs was paid to the Ionian Bank and National Bank; as, however, part of this money was first to be coined into Greek gold coin in Paris, the resumption of specie payments, at first fixed for October 15, had to be postponed to Jan. 1, 1885.

Finance.—The Greek budgets for the fiscal years 1888 and 1884 were as follows, reduced in pounds sterling:

<table>
<thead>
<tr>
<th>Description</th>
<th>1884</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct taxes</td>
<td>578,000</td>
<td>556,000</td>
</tr>
<tr>
<td>Duties</td>
<td>946,000</td>
<td>946,000</td>
</tr>
<tr>
<td>Stamp-duties</td>
<td>87,000</td>
<td>87,000</td>
</tr>
<tr>
<td>Playing-cards</td>
<td>14,900</td>
<td>4,900</td>
</tr>
<tr>
<td>Liquor and beer tax</td>
<td>63,800</td>
<td>63,800</td>
</tr>
<tr>
<td>Tax on wines</td>
<td>138,000</td>
<td>138,000</td>
</tr>
<tr>
<td>Tobacco-tax</td>
<td>260,000</td>
<td>260,000</td>
</tr>
<tr>
<td>Tax on cigarette-paper</td>
<td>102,000</td>
<td>102,000</td>
</tr>
<tr>
<td>Tax on theatre and steamers tickets</td>
<td>8,000</td>
<td>8,000</td>
</tr>
<tr>
<td>Tax on petroleum</td>
<td>20,000</td>
<td>20,000</td>
</tr>
<tr>
<td>Tax on matches</td>
<td>12,000</td>
<td>12,000</td>
</tr>
<tr>
<td>Post-Office</td>
<td>40,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Telegraphs</td>
<td>46,500</td>
<td>46,500</td>
</tr>
<tr>
<td>Other taxes and revenues from Government properties</td>
<td>135,600</td>
<td>128,600</td>
</tr>
<tr>
<td>Sale of Government properties</td>
<td>171,400</td>
<td>161,400</td>
</tr>
<tr>
<td>Sundries</td>
<td>238,000</td>
<td>238,000</td>
</tr>
<tr>
<td>Total</td>
<td>2,445,400</td>
<td>2,385,300</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>1884</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>State debt</td>
<td>571,109,000</td>
<td>571,109,000</td>
</tr>
<tr>
<td>Civil list</td>
<td>40,200</td>
<td>40,200</td>
</tr>
<tr>
<td>Foreign Affairs</td>
<td>122,000</td>
<td>122,000</td>
</tr>
<tr>
<td>Justice</td>
<td>140,600</td>
<td>140,600</td>
</tr>
<tr>
<td>Interior</td>
<td>365,300</td>
<td>365,300</td>
</tr>
<tr>
<td>Public Worship</td>
<td>120,000</td>
<td>120,000</td>
</tr>
<tr>
<td>Army</td>
<td>393,800</td>
<td>393,800</td>
</tr>
<tr>
<td>Navy</td>
<td>171,100</td>
<td>171,100</td>
</tr>
<tr>
<td>Finance</td>
<td>121,800</td>
<td>121,800</td>
</tr>
<tr>
<td>Sundry expenditures</td>
<td>49,500</td>
<td>49,500</td>
</tr>
<tr>
<td>Total</td>
<td>2,489,400</td>
<td>2,458,600</td>
</tr>
</tbody>
</table>

Lat. Monetary Union.—The Greek Government gave notice to those of France, Italy, Belgium, and Switzerland that with the close of 1885, when the Latin Monetary Convention will expire, Greece will cease to be a member of it, but that as a matter of courtesy its representatives will attend the meetings which till then may be held by the remaining parties to the Union.

The New Conventional Tariff.—The new conventional Greek tariff exempts from duty the following articles if of Italian, Spanish, or German origin: machine-bending; wooden pumps and all articles for ships' use; slate and slate-pen-
la, spikes, etc., for railways; sewing- 
s; diving apparatus; type; pipe for 
tc.; nails, screws, and parts of machin-
ing and other similar instruments, as 
also musical instruments made from either 
metal; all scientific instruments; clocks 
as thereof intended for public buildings; 
alp; emery-paper; asphaltum, paste-
med paper; looking-glasses, spy-glasses, 
ubber hose and sheets, and vessels of all 
There was a further notable special 
on made to Germany, that of admitting 
tGerman spirit intended to be mixed 

**Greek-German Commercial Treaty.**—This in-
t was signed at Athens on July 9th, 
ted by the Greek Chamber at the third 
on Dec. 30, 1884. While on the part 
the duties are lowered and the above-
articles admitted duty free, Germany 
ced the duty on currants from twenty-
to eight marks the 100 kilograms, 
alone with raise under the provisions 
Asiago-German commercial treaty of 
in 1883 Germany imported 63,157 met-
ta. of 100 kilograms currants; in 
1,258. The concession made by Ger-
as therefore quite important. 

worth—The amount of currants and 
annually exported from Greece aggre-
value between 50,000,000 and 70,000,- 
ca. The currant-crop begins in August, 
ly the entire amount produced is ex-
before the year comes to a close. The 
t on Dec. 31, 1884, had reached 77, 
from the Morea; 8,062 from Ceph-
ial 11,810 from Zante—together 97,000 
against 84,215 tons in 1883, and 82,074 in 
Wine-making is also gaining in im-
rapidly, and the Greek wines are 
steemed, both at home and abroad. 

**Minerals.**—The Laurium mines, originally 
by the ancient Greeks, since 1875 have 
e a property of a French company that 
cessfully producing, during the four 
1884, 3,926 tons of lead, of 2,240 
worth 1,877,588 francs, and leaving a 
ft of 232,932 francs. Since 1873 the 
has distributed 92,355 francs per share 
eads. The lead is argentiferous, and 
ion is shipped to France and England 
alyzed.

**Corinth Canal.**—In this work, of the 
cubic metres of earth to be removed, 
had been dug at the close of 1884, 
of enormous dredging-machines op-
both ends of the canal. On the side 
there was only a kilometer and a 
ring technical difficulties, but at Kalas 
obstacles are greater; yet, locomo-
eds will assist in taking away the 
it is estimated that the canal will be 
year. It will measure six kilo-
straight line. Even now, there is 
movement of passengers at that point 
line of the Athens-Patras Rail-
road. More than 800 steamers now touch 
ually at the two sides of the isthmus. The 
Austrian Lloyd Steamship Company alone de-
clares that it will pass, of its own vessels, 1,000,000 
tons per annum through the canal, as soon 
as the transit shall be in operation.

**Railroads.**—There are now in operation, the 
line from Athens to the Piraeus, 8 kilometres; 
the one from Yolo to Larissa, 614 kilometres; 
from Pyrgo to Katakolo, 12 kilometres; from 
the Piraeus to Eleusis, 36 kilometres; and from 
Kalamaki to Corinth, 9 kilometres; together, 
1254 kilometres. Rapid progress was made in 
1884 on the line from Athens to the Laurium 
lead-mines, and in October it was reported 
that a syndicate of German bankers had 
formed for the purpose of constructing a rail-
road from Larissa to the Greco-Turkish fron-
tier, and thence to Salonica, where it will join 
the Turkish system of railways. The Govern-
ment is ready to guarantee the interest on the 
bonds to be issued to build this line.

**Telegraphs.**—The number of offices in opera-
tion in 1883 was 127; length of lines, 5,923 
kilometres; of wire, 6,229. Number of mes-
ages sent, 617,525. Receipts, 896,031 francs; 
expenses, 958,030 francs. Early in July, 1884, 
the islands of the Aegean Archipelago were 
united by a submarine cable with the Greek 
land-lines. The British "Eastern Telegraphy 
Company" obtained the privilege of using this 
cable, and, after securing the concession 
immediately laid the cable.

**Postal Service.**—The number of post-offices in 
1883 was 218, forwarding 5,081,739 letters and 
post-cards, 3,185,388 newspapers, and 84, 
256 pamphlets and samples: together, 8,851, 
498 items of mail matter. Receipts in the 
same year, 905,865 francs; expenses, 568,961 
francs.

**Commerce.**—The foreign trade movement in 
Greece, during the period from 1879 to 1888, 
was as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1879</td>
<td>101,228,000</td>
<td>48,903,000</td>
</tr>
<tr>
<td>1880</td>
<td>114,374,000</td>
<td>67,604,000</td>
</tr>
<tr>
<td>1881</td>
<td>109,089,000</td>
<td>87,719,000</td>
</tr>
<tr>
<td>1882</td>
<td>136,134,000</td>
<td>89,642,000</td>
</tr>
<tr>
<td>1883</td>
<td>184,387,000</td>
<td>92,527,000</td>
</tr>
</tbody>
</table>

The total commercial movement in 1888 was 
distributed as follows:

<table>
<thead>
<tr>
<th>From and to</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>56,678,000</td>
<td>58,184,000</td>
</tr>
<tr>
<td>Turkey</td>
<td>17,264,000</td>
<td>17,051,000</td>
</tr>
<tr>
<td>Austria</td>
<td>84,417,000</td>
<td>94,496,000</td>
</tr>
<tr>
<td>Russia</td>
<td>76,573,000</td>
<td>82,840,000</td>
</tr>
<tr>
<td>France</td>
<td>17,741,000</td>
<td>94,018,000</td>
</tr>
<tr>
<td>Italy</td>
<td>8,064,000</td>
<td>8,497,000</td>
</tr>
<tr>
<td>Germany</td>
<td>21,000</td>
<td>1,868,000</td>
</tr>
<tr>
<td>Other countries</td>
<td>7,060,000</td>
<td>9,909,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>184,387,000</td>
<td>92,527,000</td>
</tr>
</tbody>
</table>

The chief articles imported and exported in 
1888 were:
The American trade with Greece is shown in these figures:

<table>
<thead>
<tr>
<th>Year</th>
<th>Import from Greece to the United States</th>
<th>Domestic exports from the United States to Greece</th>
</tr>
</thead>
<tbody>
<tr>
<td>1884</td>
<td>$1,221,200</td>
<td>$91,017</td>
</tr>
<tr>
<td>1885</td>
<td>1,099,994</td>
<td>155,485</td>
</tr>
</tbody>
</table>

Of the amount imported in the fiscal year 1884, $1,019,724 represented currants.

**Merchant Marine.**—According to the register of the “Bureau Veritas” for 1883–84 the commercial navy under the Greek flag consisted of 47 sea-going steamers, with an aggregate tonnage of 25,555, and 1,865 sailing-vessels, measuring together 863,891 tons. If smaller steamers and sailing-craft be added, there are, altogether, 60 steamers, measuring in all, 80,783 tons, besides 1,899 small coasting sloops, etc., to be added to the sea-going sailing-vessels.

There entered Greek ports in 1888, 6,873 sea-going vessels, of a joint tonnage of 2,961,683, and there departed 4,874 vessels, measuring together 1,991,863 tons. The maritime movement is most active at the Piraeus, the port of Athens, where all the steamers bound for the Levant call; next in importance is Syra, where, in 1883, 50,000,000 francs of merchandise were landed. From the island of Corfu alone 50,000,000 francs worth of currants leave every year; and Zante, besides currants, exports silk and cotton.

**GREEK EXPEDITION.** See Arctic Exploration.

**GUATEMALA.** the most populous of the five Central American republics; population in 1884, 1,376,961. The President is Gen. Rufino Barrios, elected May 9, 1873, since which time the Constitutional Assembly has, by decree dated Oct. 33, 1876, prolonged his term of office for four years. Before the expiration of this term, March 15, 1880, he was re-elected for another term of six years. The Cabinet is composed of the following ministers: Foreign Affairs, Dr. F. Cruz; Interior, C. Diaz Mierida; War, Gen. J. M. Barrandia; Public Instruction, Licenciado R. Murga; Agriculture and Public Credit, Señor D. Sanchez; Public Works, Licenciado F. Lainfiesta.

The Minister to the United States is Señor L. A. Batres; the Consul General at New York, Señor J. Baiz; and the Consul at San Francisco, Señor J. M. Tinoco.

The United States Minister to the Central American republics (resident in Guatemala) is Hon. H. E. Hall; the United States Consul at Guatemala City, Dr. F. H. Titus.

**Public Debt.**—In 1884 the Government of Guatemala made an arrangement with its European bondholders, by the terms of which payment of interest is resumed on the 5 and 6 per cent. bonds of 1856 and 1869. By the provisions of this agreement, two new issues are to be made in exchange for the outstanding ones and coupons. One issue ($600,000) is to cancel the capital of the old bonds, and another ($250,000) the over-due coupons, pound for pound. The capital bonds are to bear interest at the rate of 8 per cent. per annum, payable half-yearly; and of these bonds, $20,000 are to be paid off annually on par, to be drawn for. The coupon bonds bear 6 per cent. interest, but will accumulate with interest, and are only to be canceled pro rata, together with the drawn capital bonds. In order to secure the prompt payment of new coupons in the future, the Government of the republic pledges 27 per cent. of its revenue to be derived from customs, to be handed over to the creditors in the shape of drafts on the custom-house. The average amount of duties collected annually is the equivalent of £26,000.

On Jan. 1, 1884, the foreign debt above alluded to was inscribed on the books of the state, principal and interest, with the amount of $3,945,461, while the internal or floating indebtedness stood $4,337,631. The aggregate national indebtedness was $5,285,092.

**Finance.**—The amounts and the various branches of the national revenue and expenditures for the fiscal year 1888 were as shown in the table below:

<table>
<thead>
<tr>
<th>Revenue</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Balance from former year</td>
<td>$142,687</td>
</tr>
<tr>
<td>Direct taxes</td>
<td>$112,598</td>
</tr>
<tr>
<td>Indirect incomes</td>
<td>$1,914,802</td>
</tr>
<tr>
<td>Monopolies</td>
<td>$1,205,170</td>
</tr>
<tr>
<td>Special state revenues</td>
<td>$328,133</td>
</tr>
<tr>
<td>Income from sundry and extraordinary sources</td>
<td>$15,272</td>
</tr>
<tr>
<td>Loans and deposits</td>
<td>$2,516,043</td>
</tr>
</tbody>
</table>

Total: $4,736,007

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative outlays</td>
<td>$1,261,462</td>
</tr>
<tr>
<td>Higher educational branches</td>
<td>27,743</td>
</tr>
<tr>
<td>Mails and telegraphs</td>
<td>23,162</td>
</tr>
<tr>
<td>Police at the capital</td>
<td>136,000</td>
</tr>
<tr>
<td>Justice</td>
<td>2,527</td>
</tr>
<tr>
<td>Charitable institutions</td>
<td>24,185</td>
</tr>
<tr>
<td>Municipalities</td>
<td>15,141</td>
</tr>
<tr>
<td>Purchase of tobacco</td>
<td>35,597</td>
</tr>
<tr>
<td>Purchase of property</td>
<td>1,550</td>
</tr>
<tr>
<td>Sundry and extraordinary outlays</td>
<td>914,658</td>
</tr>
<tr>
<td>Total</td>
<td>$4,912,030</td>
</tr>
</tbody>
</table>

President's Message.—In his speech at the opening of Congress, President Barrios said: It is to be regretted that the new effort to establish a union between the five Central American republics has failed; but my Government, nevertheless, continues as willing as ever to use every effort within its power, by the institutions it develops, by its laws, and by its course of conduct, to furnish unequivocal proof
ternal spirit that has always animated it, and evidence of its desire that all distinctions between Americans should disappear, all being on an equal footing with Guatemalans with their rights and privileges. The abinding sentiment which now exist must gradually

day of 1884.—An attempt on the life of Dr. Barrios was made at the capital, on Sunday, April 15. About eight in the evening, a bomb was exploded at the residence of the President and his companion. Both lightly wounded. Two men were arrested: Santos Soto, fifty-two years of age, a man with a very bad record, of exploding the projectile; and a man named Escobar, for abetting the deed. The proceedings against the assassins revealed the whole plot, involving as chief actors these men. They were condemned to death, and as butlers and accomplices, Sebastian and Abraham Soto, condemned to life. Subsequently Guil

Land-Grant to Settlers.—The Government has issued a decree granting to every laborer introduced by the contractors of the Northern Railroad Company, under contract to work on their line, whether from the United States or from Europe, eleven and a quarter hectares of land, provided he is not under twenty-one years of age, nor over fifty, on condition of his having worked on the railroad one year, and that he intends to become a bona fide settler, with option to select the land from among unoccupied Government arable tracts, in the departments of Peten, Alta, or Baja, Verapaz, Zacapa, or Izabal, with immunity from all taxation whatever during the first five years. The land is to be delivered to him free of all expense. In order to prevent drunkenness among them, a tax of $250 each is imposed on all stores in which liquor is sold.

Crime.—The number of crimes committed in the republic in 1885 was 2,103, of which 2,068 were by whites and individuals of the mixed race, and 1,047 by pure Indians.

Protestantism.—A new educational establishment will soon be opened in Guatemala, under the auspices of the Presbyterian Board of Missions of New York and the immediate direction of Mr. Hill. The course of instruction will be wholly in English, and in accordance with the system in vogue in the best schools in the United States. No sectarian influences will be brought to bear to bend the religious sentiments of the pupils in opposition to their home teaching.

Resources.—The census taken in June, 1884, shows that there are on stock-farms, etc., and grazing grounds in the republic, 107,187 horses, 41,836 mules, 441,807 head of cattle, 417,577 sheep, 27,618 goats, and 117,118 hogs, together 1,213,498 live animals, against 1,089,294 in 1883, being in the aggregate worth $15,026,193.

A Los Angeles (Cal.) gentleman has brought from Guatemala a plant called the “melon-shrub,” which grows to the height of about three feet. It is an evergreen, with a beautiful purple and white flower, and bears a fruit shaped like a rifle-cannon shell, about four inches long by from two to three inches in diameter, a melon of most excellent taste, with the outside streaked with yellow and brown, and the color of a cantaloupe inside. The shrub bears in four months from the seed.

Commerce.—On June 27, 1885, the export duty on Guatemalan products of twenty cents per quintal gross weight, and one cent the superficial foot of dye and cabinet woods, was abolished, and since then exportation has increased so much that the year 1885, though liberated from the duty only during the latter half of it, shows an export of $5,718,941, against $3,719,210 in 1884. The imports, on the other
hand, slightly decreased, the low price of colonial produce, etc., abroad, crippling somewhat the purchasing ability of the people at large, anticipating which merchants established in Guatemala ordered a smaller amount of goods from abroad.

The leading export articles in 1883 were:
- Coffee, $4,848,583 worth; skins, $180,751;
- brown soft sugar and panetela, $223,136; the latter is a dark loaf-sugar; indigo, $16,881;
- horse-hair, $31,731; India rubber, $24,519;
- and specie, $145,516.

Another change in tariff marked the year 1884, reducing the import duty by one half on the following articles: Aromatic waters, including Florida and lavender; almonds, in shell and shelled; cloves, cinnamon of all classes, caraway, tinned edibles, chinaware of all kinds, steerina, as candles and in bulk; raisins, figs, and other dried fruits; starch, soap of all classes, figs, macaroni, maize, and other similar products of flour and corn; pepper, whole and ground; sugar and tapioca.

Maritime Movement.—The number of sea-going vessels that entered Guatemala’s ports in 1888 was 520.

Banking.—The Bank of Guatemala cleared a profit of about 90 per cent. during the last six months of 1888.

GUYOT, ARNOLD HENRY, an American geographer, born in Neuchâtel, Switzerland, September 28, 1807; died in Princeton, N. J., Feb. 24, 1894. His early education was obtained at the college in his native place, whence he went to the gymnasiurns in Stuttgart and Carlsruhe. At this latter city he formed an intimate acquaintance with Dr. Louis Agassiz, which resulted in a life-long friendship, and an ardent love for natural science. Guyot pursued the study of theology for three years in Neuchâtel and Berlin, but afterward devoted himself exclusively to scientific investigation. He resided five years in Paris, and made summer excursions, in the interests of his favorite pursuits, through Belgium, France, Switzerland, Italy, and Holland. He was the first to observe the laminated structure of ice in the glaciers, a discovery that was confirmed by Agassiz, Forbes, and others. He next investigated the curious distribution of erratic bowlders. The publication of Guyot’s work on this topic, with full details, was prevented by political disturbances, and also by his departure from Switzerland. From 1839 to 1848 he did excellent service to the cause of science, as Professor of History and Physical Geography in the Neuchâtel Academy. In 1848 he came to the United States, and took up his residence in Cambridge, Mass. While here, he delivered scientific lectures on the relation between physical geography and history. These lectures, which were in French, and were subsequently translated, were published in a volume entitled “Earth and Man.” One noteworthy feature of Guyot’s lectures was his clear and settled conviction as to the truth and authority of the Scriptures. He also lectured in the Massachusetts Normal Schools, and was employed by the Smithsonian Institution to organize and arrange a system of meteorological observations. Among the valuable results of his work at this time was the determination of the exact height of Mount Washington (1851), and of some of the Green Mountains (1837). In 1855 Guyot was appointed Professor of Geology and Physical Geography in the College of New Jersey, at Princeton, in which chair he remained, and was senior professor at the time of his death. He was founder of the museum at Princeton, which is one of the best of its kind in the United States, and many of its specimens were collected and arranged by his own hands. Between 1866 and 1878, Prof. Guyot prepared a series of geographies that have been very largely used in the public schools. At the Vienna International Exhibition he received a medal for his geographical works and at the Evangelical Alliance Conference, held in New York in October, 1878, he read a valuable paper on “Cosmogony and the Bible; or, the Biblical Account of Creation in the Light of Modern Science.” This paper was published wit
thers read at the Conference, and constitutes not the least important in that collection. Prof. Guyot occupied a part of his leisure in preparing for the Academy of Sciences a memoir of his friend and associate, Louis Agassiz, who died in 1873. A part of this memoir was read, in October, 1877, at the semi-annual meeting of the Academy in New York. He also co-operated with President Barnard, of Columbia College, in editing Johnson’s Cyclopaedia. His last work was on “Creation,” and was finished just before his death. In this he presents, with great force, the arguments that go to show the harmony of the Mosaic records with the acknowledged facts of modern science. Prof. Guyot received the degree of Doctor of Laws from Union College, and was one of the original members of the National Academy of Sciences when it was created by Congress. He was also elected a corresponding member of numerous foreign academies and learned societies. He was noted for his gentle manners, his sincere piety, his kindness to students, and his marvelous success in giving life and interest to the studies that were pursued in his department. Prof. Guyot married ex-Governor Haines’s daughter, who survives him.

**HAIR-CLOTH.** A fabric for upholstery furnishing. It is desirable because of its cleanliness and durability. The warp is of cotton or linen, usually dyed black. American manufacturers prefer cotton because of its flexibility, English and Germans prefer linen. The filling is of hair from the tails of horses. The hair is obtained from Russia and South America. The most desirable hair, because longest and finest, is from Russia.

**Manufacture.**—The hands and masses of hair are partially hacked and washed, and then dried black, excepting small portions of the white and gray, which are selected and woven in the natural color. After being dyed, the hair is drawn. The mass, after being thoroughly hacked, is placed on a set of steel points, a similar set being inverted upon them, forming a kind of rack and clamp. From these sets of points the workmen draw out the hair in small wisps, seizing them between the thumb and the blade of a dull knife. By the first drawing the hairs are straightened, and all brought evenly together at one end. They are then placed on the racks a second time, now with the uneven ends toward the workmen, and by the second drawing are assorted according to the length and arranged in bundles of about half an inch diameter, with one end secured by a rubber band. A machine has been invented for drawing hair, but it has not been used to any great extent. The drawing, besides straightening and assorting the hair, gives it a glossy luster, which adds much to the elegance of the cloth. The hair is assorted into twenty-six different lengths, varying from sixteen to forty inches. Hair long enough to weave cloth thirty-six inches wide is very scarce; a factory producing over half a million yards annually will not weave more than about one hundred yards of that width. Hair-facing is commercially rated, as to width, by measurement within the selvage; the hair used being in length four inches more than the rated width of the cloth produced. This surplus has to provide not only for the selvage, but also for the fact that the switch end of the hair is so fine, and often so weak, that it can not be fully relied upon for utility. Hair from six to sixteen inches in length is sold to brush-makers, and the very short is curled for mattresses.

The modern hair-cloth loom resembles an ordinary cotton or woolen cloth loom in its general appearance. But instead of a shuttle carrying the woof, a rod is shot between the threads of the warp, provided at the end with a pair of nippers, which, working automatically, seize the hairs that are individually presented to it by the selecting instrument. This instrument is a very ingenious device. It consists of a tiny pair of forceps capable of holding but a single hair. Two wires, with a microscopic groove in the end of one of them, shut together somewhat like the bill of a bird, one hooking slightly over the other, and giving the points a sliding motion as they close, thus effectually separating the hairs so that only one is retained. This instrument is adjusted somewhat after the manner of the needle-bar of a sewing-machine, over a bundle of hair, so as to drop into it, opening as it descends and closing as it rises. By a delicate adjustment, it is so arranged, that if it fails to get a hair by the first movement, it can make three efforts before the return of the nippers. If it gets one by the first effort, as it almost invariably does when the hair is properly prepared for the loom, it makes no other descent until the hair is taken away by the nippers. If from any cause no hair is presented, the harnesses remain stationary, so that no damage is done to the cloth, although the loom continues in motion without any hair being fed. As soon as a hair is fed in, the harnesses resume their motion. The reed of the loom is slightly curved, to allow for the contraction of the hair, which is woven in with a slight tension, and, being very elastic, stretches somewhat under it, and contracts when free. The daily product of one loom is from five to eight yards, the difference being due to the differing quantity of hair used in light or heavy cloth. A skillful operative can attend ten looms. A loom has been invented which feeds hair from both sides, thus nominally doubling the producing capacity, but it has not yet been brought into commercial use.
The cloth when taken from the loom is carefully trimmed by a machine furnished with knives having serrated edges, which, passing rapidly over the cloth, clip off every projecting fiber. Another machine trims the edges. For the finishing process, the cloth is folded between sheets of paper board, or sheet-iron, to prepare it for the press. Two forms of press are used, viz., first, a common hydraulic press with heated cast-iron plates inserted among the folds of cloth; and, second, the more modern press, known to manufacturers as the steam-press. As two pressings are usually desired, both forms of press are used on each piece. After pressing, it is wrapped in manila paper and packed for shipping.

History.—The hair-cloth industry in this country by power-looms dates from 1855, but the automatic feeding devices were not practically perfected till 1861. The first power-looms did not differ essentially from the others. The hairs were fed by an operative presenting them in his fingers to the hook which was then used instead of nippers, and which caught the hair in the light and doubled it through, the operative firmly holding one end until the other was carried through. This industry by power-looms was begun in this country in Pawtucket by the Boston Hair-Cloth Company in 1855. The Pawtucket Hair-Cloth Company was organized a few years later, and, by the invention of the automatic device for picking up and presenting the hairs, obtained the practical leadership of the business, which it held until the expiration of its patent. The harness stop-motion was invented by Rufus Stafford; but the credit of bringing the automatic self-feeding power-loom to its present remarkable perfection is due to the genius and toil of Isaac Lindsey. The largest factory for this fabric in the United States is that of the Pawtucket Hair-Cloth Company, in Pawtucket, R. I. This is furnished with about 450 looms, and produces about 600,000 yards annually, which is about three fourths of all produced in the country. The business is affected by the changes in the fashion of upholstering.

Hair-Cloth Crinoline.—This is a light, springy, fabric, used for tailors' trimmings, and for ladies' skirts, bustles, etc. It differs from the seating in having finer warp, and in a looser texture. It is manufactured in substantially the same manner as the seating, is woven in various patterns, and receives a slight dressing of starch. The principal manufacturer for this fabric is that of the American Hair-Cloth Padding Company in Pawtucket, which has 100 looms and produces about 1,200 yards daily. There are a few other looms for these goods in New York, Newark, N. J., and Philadelphia.

HAWAIIAN ISLANDS, or Sandwich Islands, the most northerly group of the Polynesian Archipelago. It consists of four large islands, four smaller ones, and a few rocky islets. They are situated in the North Pacific Ocean, latitude 18° 40' to 22° north, and longitude 154° to 160° west. The nearest land is the coast of California. The following table shows the distance between the port of Honolulu and the principal ports of the Pacific Ocean:

<table>
<thead>
<tr>
<th>Destination</th>
<th>Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Honolulu to San Francisco</td>
<td>2,190</td>
</tr>
<tr>
<td>From Honolulu to Sydney</td>
<td>2,140</td>
</tr>
<tr>
<td>From Honolulu to Auckland</td>
<td>1,400</td>
</tr>
<tr>
<td>From Honolulu to Yokohama</td>
<td>3,400</td>
</tr>
<tr>
<td>From Honolulu to Hong-Kong</td>
<td>4,000</td>
</tr>
<tr>
<td>From Honolulu to Valparaiso</td>
<td>5,300</td>
</tr>
<tr>
<td>From Honolulu to Callo</td>
<td>3,300</td>
</tr>
<tr>
<td>From Honolulu to Panama</td>
<td>4,300</td>
</tr>
<tr>
<td>From Honolulu to Tahiti</td>
<td>1,400</td>
</tr>
<tr>
<td>From Honolulu to Pago Sound</td>
<td>2,600</td>
</tr>
</tbody>
</table>

The islands lie on the straightest course from Panama to Yokohama and Hong-Kong, and within two hundred miles of the straightest course from San Francisco to Sydney. They are within the belt of the northwestern trade-winds, which blow strongly and incessantly during nine months of the year, and with intervals during the remaining three months.

Since the year 1873 a governmental survey of the group, both astronomical and cadastral, has been in progress, under the direction of Prof. W. D. Alexander. Some of its data respecting the chief islands are given in the following table:

<table>
<thead>
<tr>
<th>NAME OF ISLANDS</th>
<th>Length</th>
<th>Breadth</th>
<th>Area</th>
<th>Contd.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td>194</td>
<td>74</td>
<td>8,200</td>
<td></td>
</tr>
<tr>
<td>Maui</td>
<td>54</td>
<td>25</td>
<td>2,500</td>
<td>12.45</td>
</tr>
<tr>
<td>Kauai</td>
<td>51</td>
<td>25</td>
<td>240</td>
<td>2.90</td>
</tr>
<tr>
<td>Oahu</td>
<td>60</td>
<td>21</td>
<td>2,600</td>
<td>2.40</td>
</tr>
<tr>
<td>Molokai</td>
<td>35</td>
<td>7</td>
<td>110</td>
<td>1.20</td>
</tr>
<tr>
<td>Kauai</td>
<td>50</td>
<td>5</td>
<td>140</td>
<td>3.00</td>
</tr>
<tr>
<td>Niihau</td>
<td>21</td>
<td>5</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Kohokula</td>
<td>12</td>
<td>5</td>
<td>40</td>
<td>1.25</td>
</tr>
</tbody>
</table>

Government.—The islands constitute the kingdom of Hawaii, a constitutional monarchy. The natives retain the ruling power. The King, Kalakaua, was born Nov. 15, 1836, educated by the missionaries at the Royal School in Honolulu, and inaugurated Feb. 13, 1874. His Queen, Kapilani, was born Dec. 31, 1834. The dowager Queen Emma, widow of Kamehameha IV (whose line is now extinct), is a member of the royal family. There is a House of Nobles, twenty-three in number, of whom, however, a majority are Americans and other foreigners; a House of Representatives, a Ministry of Foreign Affairs, of Finance, and of the Interior, a Privy Council, an Attorney-General, and a Supreme Court. The revenue and the expenditures of the Government are estimated by biennial periods: for 1881-1882 at $1,750,880 and $2,196,006 respectively. The customs revenue for 1884 was $551,737. The public debt in 1880 was $6,71 per capita. The salary of the King is $25,500 a year. In 1884 there were eighty-one incorporated companies, agricultural, commercial, and miscellaneous, in the islands. Two daily, eight weekly, and five monthly journals are published, in the English and Hawaiian languages.

* Estimated.
HAWAIIAN ISLANDS.

The Hawaiian Constitution is modeled largely after that of the United States. It guarantees liberty of the press, of worship, free instruction, trial by jury, and habeas corpus. The entire native population, above the age of childhood, are acquainted with reading, writing, and other branches of elementary education. Of the whole school population, 57 per cent are boys and 43 per cent are girls.

Honolulu, the capital, is a place of about 13,000 inhabitants; it is much resorted to for the attractions of its climate, and for the beautiful surrounding scenery. Its harbor is excellent. Hilo, on the island of Hawaii, has also a fine bay; it is the second place in size and importance in the group, a growing town of 5,000 or 6,000 people, and the center of a considerable agricultural interest. For remarkable tropical beauty, Hilo is unsurpassed in these islands, or perhaps in the world.

Volcanoes.—The islands are entirely of volcanic origin; but coral reefs are frequent, and form some of the best harbors. The greatest continually active volcano in the world, Kilauea, lies upon the southeastern flank of Hawaii, 4,040 feet above sea-level; it is a pit or mire of lava-plain, about three miles long, two broad, and a thousand feet deep. In the northwestern part of this immense crater a lake of liquid lava is constantly burning. It rises in its dimensions and in the fury of its activity, at times approaching quiescence, and again overflowing or melting away its barriers of congealed lava, and spreading over the floor of the great crater, a sea of raging fire, or forcing its way for miles underground, to burst forth in a destructive torrent on the mountainside, and flow downward to the sea. The summit crater, Kokoowoonu, is situated on the top of Mauna Loa (18,600 feet). Prof. James D. Dana computes the mass of the mountain to be 1,800 times greater than that of Vesuvius. From this mountain eruptions of the greatest splendor burst forth every few years. The outbreak of the torrent of lava is generally preceded by earthquakes; these, however, have been destructive only in the case of two recorded eruptions, one in the eighteenth century, and another in the year 1868; and they cease when the fusion has forced its way to the surface, either at the summit crater, or at some point high up on Mauna Loa. The fountain of fire plays, sometimes for weeks, in the air, illuminating the whole horizon to a distance of one hundred and fifty miles in every direction, and so intensely that the writer of this has read fine print at a distance of forty miles by the light of the white-hot column. This lava, completely fused, is extremely fluid. It is thrown up to a height of many hundred feet, from clefts in the lava-rock that are sometimes hundreds of feet in length, and, falling upon the slope, it flows with immense rapidity down the flanks of the mountain, either for miles or spreading out over the upland wilderness between the bases of Mauna Loa and Mauna Kea, destroying the forests, filling up the valleys, obliterating streams, and forming vast lakes or reservoirs of melted lava. The Rev. Titus Cummins, in his "Life in Hawaii," a description of the mechanism of the lava flows:

"The average slope of Mauna Loa is seven degrees; but this is made up of secondary slopes, varying from one to twenty degrees. As the lava first rushes down the steeper inclinations, it flows uncovered; but its surface soon hardens, forming a firm, thick crust like ice on a river. Under this crust the torrent runs highly fluid, and retaining nearly all its heat. In this pyroclastic, if I may so call it, the lava-stream may pour down the mountain-side for a year or more, flowing unseen, except where openings in the roof of its covered way reveal it. When the molten river reaches the highlands at the base of the mountain, it sometimes spreads into lakes miles in diameter. The surface of it soon hardens; the lavas below are sealed within a rigid crust that confines them on every side. Their onward progress is thus checked for hours or days. But as the tremendous pressure of the stream behind increases, the crust is rent, and the liquid lava bursts out and gushes forward in a torrent for a hundred, five hundred, or a thousand feet or more. The surface of this extended mass cools and stiffens in time, again confining the living lava; then with the pressure from behind there is a fresh rupture in the confining shell. While the lava is held in check as I have described, the uninitiated visitor will pronounce the flow to have ceased. But it is only accumulating its forces. Suddenly the hardened crust is ruptured with a crash, the lava moves forward again, and a new joint is added to the covered way. Thus the fusion may flow at white heat for thirty or forty miles, and reach the sea at a distance of more than fifty miles from the mountain-source. By virtue of this confining crust, the red-hot lava, growing viscous as it loses heat, may even be propelled up-hill for a certain distance, if the outbursting rush of lava be directed upon an upward slope.

The eruption of 1855-1856 continued for fifteen months, the lava making steady progress seaward all this time, though after the first few days the progress was extremely slow. Within the present century, the lava-flows of 1801, 1828, 1840, 1859, and 1868, reached the sea at different points on the coast; the northeastern part of the island being the only one that is not subject to volcanic outbreaks. These, however, have only twice, within historic times, been destructive to life; and the greatest eruptions can generally be visited with safety, even during the time of their highest activity.

Climate.—The climate is sub-tropical. The usual temperature at sea-level is from 70° to 80° Fahr., with extremes of 77° and 92°. Depression of heat is unknown, and white labor-
ers easily work all day long, a circumstance unknown in any other country within the tropics. This uniformity at an agreeable temperature is the unique feature of the Hawaiian climate. Other tropical islands, as Tahiti and Jamaica, the Philippines and the Sundaas, enjoy equal uniformity, but a uniformity of excessive heat, the mercury for half the year never coming as low as 70°. In Hawaii the pandanus and the banana flourish, while yet it is cool enough for one species of the peach, and on the uplands the strawberry and the raspberry are indigenous. The immediate cause of this equality at comfortable temperatures is the singular coolness and dryness of the ocean temperature, which is never far from 70° Fahr., or cooler than in any other region in the same latitude. Mr. Sereno E. Bishop, of Honolulu, employing the “Challenger” temperature soundings, shows that this coolness, and the consequent dryness of the climate, is due to an ocean-current from the north. This first makes its way as a deep-sea current all the way from the south-polar seas to the Arctic region, and is then reflected southward to the Hawaiian Islands, as a cool surface-current, from the closed Arctic extremity of the Pacific Ocean.

The air-currents are, in consequence of the equable coolness of the water and small evaporation, comparatively dry. They yield their entire moisture to the windward coasts of the islands, where the annual rainfall varies from 150 to 240 inches. The leeward sides are dry, as a rule, and often arid. But when the mountain-barriers are high enough to cut off the trade-wind completely, the leeward coasts receive alternating land-breezes by night and sea-breezes by day, and are moist. The temperatures vary with the elevation above the sea, giving the resident the choice of climates from the tropical to the temperate zone; though most of the population is found near the level of the sea. These varied conditions of dryness and humidity, and mountain-elevation, produce so many climatic contrasts that, while the climate of each particular region is equable to an unexampled degree, there are probably more kinds of climate in the little Hawaiian kingdom than anywhere else in the world on an equally limited area. The group is destined for this reason, among others, to become an important sanitarium for Americans.

Production.—The principal islands are only mountains that lift themselves to great heights from the sea; and but a small part of their area is adapted to agriculture. Their lofty interiors are unavailable for anything except in places for pastureage, the older formations being scored into immense ravines divided by knife-edged ridges. The newer volcanic tracts are seldom arable, though the lavas decompose with great rapidity into fertile soil. There is, however, as usually in tropical countries, a great deficiency of good pasture-grass, except in the interior of Hawaii, where thousands of wild cattle (introduced by Capt. Vancouver) and goats range the uplands; these are hunted for their hides. Wild hogs and wild turkeys are also abundant. Various kinds of grasses have been introduced, as yet with little success, in the effort to remedy this defect of intertropical regions; among them the Bermuda grass, the “false Guinea grass” (Panicum spectabile), and the alfalfa, a tender forage-plant resembling clover, introduced from Chili, which has been planted in the same rows with sorghum.

The lands that are available for the cultivation of the staple crops—the sugar, coffee, rice, fruits, etc.—are limited to a marginal ring of coast territory, of varying breadth, but never broad. On the leeward sides of the islands much of this land requires expensive irrigation; even where the rainfall exceeds 100 inches per annum, irrigation has been found necessary for security against droughts. The uplands, however, are moist as well as fertile, and here the best cane-growing land is found. But the total acreage available for the sugarcane, though it is variously estimated, can not exceed 90,000 acres. The percentage of arable land is the greatest on Kauai, the oldest island, and the least on Hawaii, the newest—Hawaii being, indeed, still an unfinished island, geologically speaking, while on the other islands volcanic action has been immemorially extinct. Puna, the southeastern district of Hawaii, has an area of nearly six hundred square miles, nearly all being partly decomposed lava; but there is not in the whole district a single tract of ten acres that has a soil deep enough to plow, though the climate is perfect for the cultivation of any staple crop.

On the windward sides of the islands, again, the land is cut up by deep and precipitous gorges or clefts, which head far inland, and open seaward between steep precipices that wall the coast. The upland flats between these gorges are generally narrow, and do not afford room enough for a large plantation. It is a matter of extreme inconvenience to a planter to have his farm cut up into three or four pieces by gorges 800 to 500 feet deep, which are very difficult to cross; and if the component parts are too small, his farm will not pay.

But in the limited tracts that are available for sugar, deep soil of great richness is found, and these produce abundantly. The average yield per acre between Oct. 1, 1862, and Oct. 1, 1888, for the whole group, was 27.1 tons per acre; the total area cultivated, 21,824 acres; the total yield, 59,124 tons. At Wainane, on the leeward side of Kauai, where there are great advantages of soil and climate, a field of 223 acres yielded, in 1884, 406,168 pounds of sugar, or 44 tons per acre. Other localities have yielded five tons an acre; and one planter took fifty tons of sugar from seven acres of ground, his plantation being 2,500 feet above sea-level; but this unexampled crop had been three years in maturing. In other sugar-growing countries two tons an acre is considered an ample yield. The Demerara cane
HAWAIIAN ISLANDS.

Fields, with improved cultivation and powerful machinery, average a sugar production of but 1½ tons to the acre. The sugar crop can remain long in the ground without injury. It is not infrequent to plant only once in three years, taking off two ratoon-crops meanwhile.

The area actually cultivated in cane is at present 23,000 acres, distributed as follows:

<table>
<thead>
<tr>
<th>Area</th>
<th>Kanal</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td>12,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Maui</td>
<td>6,800</td>
<td>2,000</td>
</tr>
</tbody>
</table>

The value of the sugar-lands in the islands is estimated at $15,886,800, of which amount $10,235,464 belongs to Americans.

The process of manufacture employed is the old one of crushing the cane and evaporating the juice, of which not more than about 75 per cent. can be expressed by the most improved mills, nearly 25 per cent. being lost. The amount of sugar yielded by this process is about 8 per cent. of the weight of the cane. To save this very considerable waste, it is proposed to introduce the diffusion method, as now practiced on a vast scale in France and Germany in the manufacture of beet-sugar.

The process consists essentially in carrying a stream of water, increasing in temperature as it flows, through a series of tanks filled with sliced cane. By the action of osmosis, this current takes up nearly all the sugar through the vegetable cell-walls, whether of the cane or the beet-root, leaving scarcely a chemical trace of sucrose behind. The cells not being broken as by the crushing process, few impurities are disengaged, and nearly all of these are congealed by the heat employed, so that the diffusion-juice is much purer than mill-juice; its only disadvantage being its considerable dilution by the water employed in the process. The immense European production of beet-sugar by diffusion, within the past two years, bringing the price of sugar down to four or five cents a pound, threatens to drive the cane-mill and the cane-planter to the edge of ruin. The United States has one of the most natural advantages he enjoys, unless more improved processes of manufacture are soon introduced.

Trade with the United States.—On the 9th of September, 1876, a commercial treaty of reciprocity between the United States and Hawaii went into effect, to remain binding for seven years from that date, and further until the expiration of twelve months after either of the high contracting powers shall give notice to the other of its wish to terminate it. This treaty, which is in the ninth year of its operation, remitted the taxes on the chief products of either country in the ports of the other. It has greatly stimulated the sugar-culture and the general trade between the two countries.

San Francisco is the direct market for the Hawaiian products, which are mostly consumed on the Pacific coast. Many Americans have gone to the islands and have engaged in agriculture or mercantile pursuits, and have reaped fair returns. American capital to the amount of $3,200,000 in ships and wharves, and $3,800,000 in loans, was invested, in 1882, in the islands; and in all, about $20,000,000 of American capital has found permanent employment in the group. Three fourths of the vessels that visit the islands are American, and 95 per cent. of the commerce between the United States and Hawaii is carried in American vessels.

The imports are of very varied character. They include agricultural implements and machinery (though much of the latter is imported from England), breadstuffs, cotton manufactures, hardware, clothing, and supplies of many kinds. The total value of the imports from the United States, under the treaty, for the year ending June 30, 1888, was $8,811,918; of exports to the United States, $8,029,835; making an excess of exports over imports of $4,217,092. This is practically the amount of admission free of duty from the islands, the balance being set off by merchandise sent free of duty to that country. This apparent balance against the United States represents, however, the profits of Americans engaged in agriculture, navigation, and trade and provincial dealings with the Hawaiian people. Interest and profits on the $20,000,000 investments already specified are $2,000,000. Freight, insurance, and handling of produce interchanged, amount to $1,184,174 on a low estimate; American commissions and profits, estimated at 5 per cent., are each $592,087.40; in all, a sum of $4,366,543, which more than cancels the apparent balance of trade against the United States. In point of fact, Americans are not called upon to ship coin or to transmit exchange to Hawaii to pay it, but, on the contrary, exchange is now (March, 1888) considerably against Hawaii.

In the year before the treaty (1875) the Hawaiian trade, including exports and imports, was $1,722,555. In the absence of the treaty this would not have been materially increased. In 1884 the trade with the United States had increased to $8,528,000 exports from the United States, and $7,926,000 imports from the islands; total, $11,449,000, or a nearly sevenfold increase, the treaty having caused nearly all of this increase. The United States are the creditor country, and handle nearly all of the commerce; and the taxes remitted by the United States are upon articles that are consumed by her people. The exported Hawaiian raw sugars are refined on the Pacific coast, and consumed there, at a cost but a trifle greater than that of their production. The treaty permits the exportation of “muscovado, brown, and other unrefined sugars” from the islands free of duty, and charges have been brought against the exporters of falsifying the grades. These charges have not been sustained, it having been shown that the centrifugal separator and the vacuum-pan were in general use among the planters before the treaty was drafted.
The crop of rice has also been much increased under the treaty, the exports rising from 3,934,005 pounds in 1877 to 6,436,000 pounds in 1884. Coffee, of excellent quality, unsurpassed in flavor, and less "wakeful" in its effect than the Eastern coffees, is produced in small quantity. The best comes from the district of Kona, on Hawaii; but it is subject to a destructive blight, which has checked its cultivation.

The following table shows the amount and value of the principal Hawaiian exports for 1882-83, and indicates a slight falling off in the value of the latter year, due principally to a dry season and consequently a short crop of sugar, and to the considerable decline in prices.

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Sugar</th>
<th>Hawaiians</th>
<th>Japanese</th>
<th>Chinese</th>
<th>Americans</th>
<th>Hawaiians-born of foreign parents</th>
<th>British</th>
<th>Portuguese</th>
<th>Germans</th>
<th>French</th>
<th>Other foreigners</th>
<th>Total</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1883</td>
<td>114,107,153</td>
<td>198,377</td>
<td>1,803</td>
<td>5,848</td>
<td>5,618</td>
<td>124</td>
<td>863</td>
<td>5,569</td>
<td>273</td>
<td>61</td>
<td>81</td>
<td>51,095</td>
<td>$7,294,777</td>
</tr>
<tr>
<td>1884</td>
<td>145,654,028</td>
<td>110,569</td>
<td>4,994</td>
<td>9,490</td>
<td>1,174</td>
<td>1,847</td>
<td>1,247</td>
<td>1,163</td>
<td>818</td>
<td>61</td>
<td>81</td>
<td>57,218</td>
<td>7,575,369</td>
</tr>
</tbody>
</table>

Population.—An official census of the Hawaiian Islands was taken Dec. 27, 1878, showing a total population of 57,985, distributed under the following nationalities:

Native Polynesians:                 41,938
Half-breeds of various races:       4,349
Chinese:                           5,918
Americans:                        1,574
Hawaiian-born of foreign parents:  947
British:                           581
Portuguese:                       458
Germans:                          273
French:                           81
Other foreigners:                 63

Total population, December, 1878: 57,985

Since 1878 the foreign population has rapidly increased, mainly by the importation of Chinese and Portuguese laborers for the sugar-plantations. The distribution of present population is nearly as follows:

Native Polynesians:                 40,000
Half-breeds:                       4,000
Chinese:                           18,000
Americans:                        2,000
Hawaiian-born of foreign parents: 1,000
British:                           1,500
Portuguese:                       900
Germans:                          1,000
French:                           761
Other foreigners:                 2,175

Total population, December, 1883: 50,375

The Chinese male adults now considerably outnumber the Polynesian.

The aboriginal population continues to decrease, as it has done since the first estimate, made in 1779 by Cook. The successive estimates have been as follows:

<table>
<thead>
<tr>
<th>A.D.</th>
<th>Total population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1779</td>
<td>estimated by Captain Cook</td>
</tr>
<tr>
<td>1828</td>
<td>estimated</td>
</tr>
<tr>
<td>1841</td>
<td>official census</td>
</tr>
<tr>
<td>1846</td>
<td>official census</td>
</tr>
<tr>
<td>1853</td>
<td>official census (native and half-breed)</td>
</tr>
<tr>
<td>1860</td>
<td>official census (native and half-breed)</td>
</tr>
<tr>
<td>1865</td>
<td>official census (native and half-breed)</td>
</tr>
<tr>
<td>1872</td>
<td>official census (native and half-breed)</td>
</tr>
<tr>
<td>1877</td>
<td>official census (native and half-breed)</td>
</tr>
<tr>
<td>1884</td>
<td>official census (native and half-breed)</td>
</tr>
<tr>
<td>1888</td>
<td>official census (native and half-breed)</td>
</tr>
</tbody>
</table>

This rapid and persistent decrease of the aborigines is not mainly due to foreign diseases, though these have swept over multitudes; epidemics of small-pox, typhus, measles, and even of influenza have been especially fatal. But the peculiar feature of the movement of population, not only in the Hawaiian but in all the other Polynesian areas, is that it is always steadily retrogressive, and does not tend to restore any part of its losses, as is the tendency in other populations after the greatest losses. The process of depopulation goes forward unchecked, even though the community be apparently healthy. Between the censuses of 1832 and 1884 the aboriginal and half-caste population has decreased 86 per cent.

The reason of this swift and continuous depopulation has been pointed out by Charles Darwin in his work on "The Descent of Man." It is the sterility of the people under changed conditions, and the high mortality among the children, probably a consequence of this lowered fertility. The advent of the trader and the missionary, and the sudden and complete change wrought by them in the dress, the usages, the religion, the amusements, and to a great extent in the food of the aborigines, these have broken up the completely adjusted environment of the Polynesian, and he has been unable to support the change. In his work on "The Descent of Man," Darwin says, "One of my informants, Mr. [T. Mapu| Coan, who was born on the island, remarks that the natives have undergone a greater change in their habits of life during fifty years than Englishmen during a thousand years." This revolution in their physical and psychological condition has made it comparable to that of wild animals under restraint, among which infertility is the rule. As early as 1843 the Hawaiian Government rewarded parents who had three children by exemption from taxes, while those who had more than three received gifts of land and other encouragement. Darwin's conclusion in respect to the extinction of the Polynesian races is this:

"The reproductive system can be shown to be susceptible to an extraordinary degree (though why we know not) to changed conditions of life. Seeing how general is this law of the susceptibility of the reproductive system to changed conditions of life, and that it holds good with our nearest allies, the Quadramans, I can hardly doubt that it applies to man"
his primitive state. Hence, if savages of any race are induced suddenly to change their habits of life, they become more or less sterile, and their young offspring suffer in health in the same manner and from the same cause as do the elephant and hunting-leopard in India, many monkeys in America, and a host of animals of all kinds, on removal from their natural conditions."

The extinction of the pure Hawaiians is apparently only a question of time, and the question what foreign occupancy shall follow the native rule is one that must possess interest for the United States, as the Hawaiian Islands are now the only remaining group in the North Pacific Ocean that is not a colonial dependence of some power in Europe or Asia.

HAYTI. (For details relating to area, territorial divisions, population, etc., see "Annual Cyclopaedia" for 1883.)

Government.—The President of the Republic is Gen. Salomon, elected for seven years, dating from 1879. The Cabinet is composed of the following named ministers: Foreign Affairs, Finance, and Commerce, Gen. Damiere; Justice and Public Worship, O. Madion; War and Navy, Michel Pierre; Interior, Ovide Cames; Public Instruction and Agriculture, F. Mamigat.

The United States Minister Resident and Consul-General at Port-au-Prince is the Hon. J. M. Langston, and the American Vice-Consul-General is Dr. J. B. Terres. The Haitian Minister to the United States is Mr. S. Preston; and the Haitian Consul-General at New York, E. D. Bassett.

The Rebellion.—On Dec. 21, 1883, President Salomon informed the foreign representatives and consuls that Jeremie had surrendered, and that one of the clauses of the capitulation was that several of the foreign diplomats or consuls should assist in the execution of the treaty of surrender. The President at the same time asked the representatives to assist him in the settlement of peace, and to accede to the fulfillment of the clauses stipulated. The foreign ministers and consuls agreed to send three men-of-war of different nationalities to Jeremie, carrying as many commissioners, one of each nationality, and appointed the United States Minister and the consuls of Spain and England as commissioners, who witnessed the entry of the Government troops into the city and fortress, and next day returned to Port-au-Prince. Before Jeremie surrendered, the Government troops had taken by assault the villages of Cornil and Pestel. Jacmel was driven to capitulation by want of provisions. The Revolutionary Committee of the town, knowing that President Salomon had excluded its members from the amnesty accorded to the rest of the insurgents, took refuge at the foreign vice-consulates, and left to their military chief the task of stipulating the terms of their surrender. Several days afterward Gen. Prophete took Cotes-de-Fer by assault.

Events of 1884.—In January it was announced that the Haitian ports of Belruit, Anse d'Hainault, and Dame Marie, which had been temporarily opened to foreign commerce in place of Jeremie and Jacmel, would be closed again on February 15. At Miragoane the surrender occurred on January 24.

The Minister of Finance, with the appointed delegation, signed bank-notes to the amount of $1,000,000, which were issued in spite of the protest of the National Bank.

On February 18, in the United States District Court, in session at Philadelphia, a verdict, by agreement, for $500 was rendered in favor of the Government against Warner and Merritt, owners of the steamer Tropic. This represented a penalty for carrying as passengers insurgents taken aboard of the vessel at Inagua and landed at Miragoane, Hayti, when the certificate of the vessel forbade the carrying of passengers. It was represented that a similar action had been brought by seamen on board of the vessel, and the penalty in that case paid. The question was pending as to whether a double penalty could be exacted.

On February 20 President Salomon proclaimed at Port-au-Prince full amnesty to the revolutionists of Cotes-de-Fer, excepting Gen. Chevil Mode and other members of the Revolutionary Committee. At the foreign consulates in Jacmel 380 refugees were awaiting the President's decision to execute or pardon them.

On March 1, Judge Hughes, of the United States Circuit Court, sitting at Richmond, Va., refused to confirm the sale of the arms and munitions of war seized on the schooner E. G. Irwin, intended for the Haitian insurgents. They were purchased at auction in bulk on February 28 by a New York firm. The judge considered the amount ($2,580) bid at the sale entirely inadequate to the invoiced cost of the material ($7,500), and ordered a new sale.

When summoned in March to deliver to the authorities the army deserters who sought refuge with them, the foreign consuls at Jacmel refused, on the ground that during a civil war there were no recognized deserters.

In April the Haitian Government put into circulation the dreaded additional $1,000,000 of paper money, which had a depressing effect upon commerce. Coffee was at the time quoted at $4 to $5 cents; cocoa, $4 to 9 cents; and logwood, $5.50 to $7.

The number of persons killed during the revolution was officially declared to have been 7,000. The disappearance of several persons implicated in the revolution caused considerable commotion. On June 17 a configuration reduced to ashes nearly half of all the buildings at Jeremie, the business quarter suffering very heavily.

On October 3 the Chamber of Representatives passed the indemnity bill, fixing the amount to be paid to claimants who suffered through the riots of September 22 and 23 at
HAYTI.

$588,418, payable in six equal installments, the first on November 30, 1884, the next on September 30, 1886, and on the same date in 1887, 1888, 1889, and 1890. The first payment of $93,069 was to be refunded out of an additional export duty of 10 per cent. that was to be levied.

On the occasion of the fifth anniversary of his accession to the presidential chair, October 23, General Salomon decreed full and unrestrained amnesty to all that had been condemned for political misdeeds, whether then in Hayti or exiled.

A Question in Dispute.—In 1872 an American company established itself on the little island of Navassa, one of the territorial dependencies of Hayti, and raised the American flag. Navassa is simply a guano-island, about twenty-seven miles from the mainland. This island, the Haytians claim, belongs to the republic, not only because it is a part of the same geographical system, but because it is mentioned by name as belonging to her political jurisdiction in her Constitution. At the time the island was taken possession of by this American company, there was a vigorous protest that this was done by a filibustering expedition, and that the manner was a subject of diplomatic representation on the part of Hayti in Washington. But the protests received no consideration, and nothing has since been done about it. The American firm remains in possession, exporting the guano; claiming the right to do this under sections 2,579 to 2,578 Revised Statutes, which provide that whenever any citizen of the United States discovers a deposit of guano on any island not within the lawful jurisdiction of any other government, and not occupied by the citizens of any other government, and takes peaceable possession thereof, and occupies the same, such island may, at the discretion of the President, be considered as pertaining to the United States. The demands of the Haytian Government for redress have been renewed.

The Coffee-Crop of 1884—85.—The following was communicated from Port-au-Prince under date of Sept. 10, 1884: “The first receipts from the new coffee-crop will make their appearance in October, and their quality will be fair. There has been rainfall enough just at the time it was needed. At present low prices in Europe and the United States the 31,000 tons will not command at the shipping ports over $5 the 100 pounds. We shall not have more than from $4,000,000 to $5,000,000 worth of goods to export, and our imports will also have to be limited to that much. Business generally has meanwhile been almost at a stand-still for two months past, because of a dispute that arose between the treasury and the bank about the paper money that was put into circulation.

American Trade with Hayti.—The following tables show the imports and exports in the American trade:

<table>
<thead>
<tr>
<th>YEAR ENDED JUNE 30</th>
<th>Coffee</th>
<th>Tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>$15,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>1881</td>
<td>$10,000</td>
<td>$2,000</td>
</tr>
<tr>
<td>1882</td>
<td>$15,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>1883</td>
<td>$20,000</td>
<td>$4,000</td>
</tr>
<tr>
<td>1884</td>
<td>$25,000</td>
<td>$5,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YEAR ENDED JUNE 30</th>
<th>Wheat flour</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>500 bushels</td>
</tr>
<tr>
<td>1881</td>
<td>600 bushels</td>
</tr>
<tr>
<td>1882</td>
<td>700 bushels</td>
</tr>
<tr>
<td>1883</td>
<td>800 bushels</td>
</tr>
<tr>
<td>1884</td>
<td>900 bushels</td>
</tr>
</tbody>
</table>

American Manufactures.—In his report to Department of State, Consul-General Lang writes as follows:

The imports from the United States have come for the most part of provisions, such as pork, hams, flour, sugar, rice, codfish, herrings, mace, butter, lard, cheese, canned meats and fruits, soap, drugs and medicines, paints, hardware, surgical implements, hoes, shovels, spades, axes, tins and lumber, shoes, and carriages. For many years past, too, denims have been imported and used in Hayti. In fact, they have constituted for some time the chief article of that special manufacture in greatest demand in this country, and it is now ceded that they do, and will continue to here hold the specialty in the Haytian market. They also prove, as many of the most intelligent merchants of the country predict, the forerunners of the general and general introduction of American cotton goods not only into Hayti, but into the West India islands. And this result will be produced upon the retail of the goods referred to, in spite of efforts made by the competing manufacturers in other countries, who have more convenient terms of credit are given: chutes, and special endeavor is made to accomplish what are falsely supposed to be the circumstances to the Haytian consumer, with a cheap, inferior sort of American denims, as compared with all others, a premium in the markets of this country. But false trade-markers do not deceive in this matter for the texture and quality of the goods constitute guarantees appreciated by the buyer. It is not as therefore, that the Haytian mountaineer, in seeking for such article, with other words his need, calls it “the cloth in which the Haytian is cheated.”

HENDRICKS, THOMAS ANDREW, Vice-President of the United States, was elected by the people of the United States, on the 7th of November, 1819. On the other side he is of Scotch descent. His mother, Jane Thomson, was a granddaughter of J. Thomson, who emigrated from Scotland to Pennsylvania before the Revolution, and by representations of the advantages of the country, induced a large following of Scotchmen by whom Cumberland County was chiefly settled. Thomas's grandfather was one of the first settlers of Westmoreland County, and held various township and county offices.
HENDRICKS, THOMAS A.

and was a member of the State Legislature. The father of Thomas, was born in Ligonier Valley, and not long after marriage he moved to Zanesville, Ohio, and on a farm near that place Thomas was born.

When he was six months old his parents removed to Madison, Ind., then the residence of his uncle, William Hendricks, who was successively a member of Congress, Governor of Indiana, and United States Senator. John Hendricks was appointed by President Jackson as Deputy-Surveyor of Public Lands, and long served in that capacity. In 1839 he removed again, and located a homestead in the sparsely-settled county of Shelby, and the county town, Shelbyville, is upon a part of the old Hendricks farm.

In this home Thomas A. Hendricks passed his boyhood till 1837, when he entered Hanover College, at Hanover, Indiana, from which he was graduated in 1841. His brother, Abram Hendricks, went through the course at the University of Ohio and at Hanover, and became a Presbyterian clergyman. Thomas went to Chambersburg, Pa., studied law in the office of his uncle, Judge Thomson, was admitted to the bar in 1848, and returned to Shelbyville to practice. His success in his profession was phenomenal. In 1845 he married Eliza C. Morgan. They have no children, their only son having died in infancy. In the same year, at the age of twenty-six, he was sent to the State Legislature, where he served one term, but he would not accept a re-election. In 1851 he was elected without opposition a member of the convention that was called to revise and amend the State Constitution of Indiana, and was prominent and efficient in that work.
HENDRICKS, THOMAS A.

In 1851, and again in 1853, he was a member of Congress from the Fifth District of Indiana. At the close of his second term he intended to return to his law practice, but President Pierce appointed him Commissioner of the General Land-Office, and he served in that capacity for four years, administering the affairs of the office with great ability. In 1860 he was nominated as Democratic candidate for the governorship of Indiana, but was defeated by the Republican candidate, Henry S. Lane, who became Governor by 9,757 majority. In the same year Mr. Hendricks removed from Shelbyville to Indianapolis, where, in 1862, he formed a law partnership with Oscar B. Hord, extended in 1866 to Mr. Hendricks's cousin, Col. A. W. Hendricks, under the firm title of Hendricks, Hord & Hendricks.

From 1863 to March, 1869, Mr. Hendricks was a member of the United States Senate from Indiana, and was regarded as a Democratic leader in that body. He served efficiently on the Committees on Claims, the Judiciary, Public Lands, and Naval Affairs. He strongly opposed the Republican plan of reconstruction, and opposed the amendments to the Constitution as being hasty. He did not wish to hinder the progress of rational settlements of great difficulties, but wanted to make haste slowly. In 1864 he advocated and voted for large appropriations to bring the war to a close, and spoke eloquently in favor of an amendment to increase the pay of the soldiers 50 per cent., because of the depreciation of the currency.

In the Democratic National Convention of 1868, in New York, on the twenty-first ballot, he received 139 votes as candidate for the presidency, standing next to Gen. Hancock, who received 194; but on the final ballot Horatio Seymour was nominated. In the autumn of that year he was again a candidate for the governorship of Indiana, but was defeated by 941 majority by the Republican candidate, Conrad Baker, who afterward became a law partner of Mr. Hendricks. At the close of his senatorial term he returned to Indianapolis, and resumed the practice of his profession.

In 1872 he was elected Governor of Indiana, defeating the Republican candidate, Thomas M. Brown, by a majority of 1,148. In July, 1874, he was permanent chairman of the State Democratic Convention, at Indianapolis. In the National Democratic Convention at St. Louis in June, 1876, he received 1384 votes for the presidential nomination, and, when Samuel J. Tilden was nominated, he received 730 out of 738 votes as candidate for the vice-presidency.

In 1877, and again in 1883, accompanied by Mrs. Hendricks, he made a brief tour in Europe as a relaxation from his arduous professional pursuits. He was a member of the National Democratic Convention at Chicago in July, 1884, and in behalf of the Indiana delegation nominated Joseph E. McDonald, of that State, for the presidency. After the nomination of Grover Cleveland, William A. Wallace, of Pennsylvania, nominated Thomas A. Hendricks for the vice-presidency, and the entire 816 votes cast for him made him the unanimous nominee of the convention. He was at Saratoga when he was officially notified of his nomination, and subsequently made formal acceptance in a brief letter. (For the result of the election, see CLEVELAND, GROVER, and UNITED STATES.)

Mr. Hendricks is five feet nine inches tall, weighing one hundred and eighty-five pounds, and, from his irrepresible habits through life, is still strong and vigorous. He is a consistent member of the Protestant Episcopal Church, and his private life is without a stain.

HONDURAS, a republic of Central America. Area, 29,600 square miles; population, 400,000, of whom fewer than 10,000 are pure whites, the rest being mestizos and Indians. It has a coast-line of 60 miles on the Pacific and 400 on the Atlantic. The Cordilleras mountains traverse the republic 60 miles from the Pacific, in a northwest and southeast direction, and contain many rich veins of silver, gold, and other minerals.

The climate, twenty miles from the coast and in the mining districts, is exceptionally healthful, the temperature seldom falling below 60° or exceeding 85°.

Government.—The presidential term is four years. The legislative department consists of a Senate and Chamber of Deputies composed of members elected from the thirteen departments into which the republic is divided.

The President, Gen. Luis Bográn, was elected on Nov. 27, 1888. The Cabinet was composed as follows: Minister of War, Education, and Justice, Dr. Rafael Alvarado; Minister of Foreign Affairs, Señor Jeronimo Zelaya; Minister of the Interior, Señor Crescencio Gomez; Minister of Finance, Señor Abelardo Zelaya; and Minister of Public Works, Señor Francisco Planas.

The United States Consul at Rústán and Trujillo is Mr. W. C. Burchard.

The Consul-General of Honduras at New York is Mr. J. Baiz; at San Francisco, Mr. W. V. Wells; the Consul at New York, Mr. E. G. Marsh, and at New Orleans, Mr. L. de Averanda.

Finance.—The budget estimate for 1884 placed the income at $1,100,000, and the outlay at $1,004,567.

The home indebtedness consists of $700,000 bonds, while the floating debt amounts to $50,000.

Railroads, etc.—The line between Puerto Cortez and San Pedro, 60 miles, is in operation.

There were, in 1883, 33 telegraph offices, with 280 operators. Length of lines, 1,360 miles; number of messages, 107,970. Receipts, $12,620; expenses, $11,784.

In 1883 there were 28 post-offices, forward-
HONDURAS.

192,894 letters, 2,290 postal-cards, and 184,130 newspapers and samples: together, 299,614 tons of mail matter. The receipts amounted to $4,600, and the expenses to $22,913.

Port.—On the Atlantic there are Trujillo, Puerto Cortez, Omoa, Yriona, and Rusatan; on the Pacific there is Amapala. The port of Puerto Cortez affords an excellent harborage for vessels of all draughts, and perfect protection from 'norther.' On the north side of the harbor are the wharf and depot of the Interoceanic Railroad, this being the Atlantic terminus of the partially completed railway that is to cross the Republic of Honduras to the Gulf of Fonseca on the Pacific, 220 miles. Prior to the building of this section of the road Puerto Cortez was known as Point and Bay of Catallos, and of no importance; at present it is the business center for all the shipping interests of the interior and surrounding country, which formerly, and for nearly 800 years, were assembled at Omoa, ten miles westward. In order to afford the New York market a steady supply of cabinet woods and bananas from this part of Honduras, the United States Mail Steamship Company now runs fast steamers direct between Puerto Cortez and New York, with an average cargo of 8,000 bunches of bananas.

Rusatan Island, with its neighbors, forming the group known as the Bay Islands, although comparatively unknown, is one of the most fertile. It formerly belonged to British Honduras, but for the past twenty years has been under the Republic of Honduras, and yields a fair amount of revenue. Rusatan is thirty-seven miles in length, and from three to four miles wide, and has an undulating surface, the hills rising from 200 to 600 feet. The land yields coconuts, bananas, plantains, and pineapples. The annual yield of coconuts is 45,000, of bananas 10,000, of plantains 10,000, and of pineapples $1,000,000. The bulk of imports is from the United States via New Orleans by steamers every seven days, sailing under the Honduras flag, and carrying the mails. Some of the so-called "coconut walks," or plantations, consist of 8,000 to 10,000 trees, each bearing 100 to 200 nuts, which are sold at $15 to $30 a thousand.

Minas.—The causes that led to the long abandonment of the Honduras mines, and have prevented their reopening by the natives, are common to all the Spanish-American mining districts, and are the same that caused the old "espe" mines in Tolima, Colombia, and the "El Callao" of Guayana, Venezuela, to remain unworked for over fifty years. The separation from Spain revolutionized the labor conditions of these countries. The liberated slaves either refused to work, or were impressed into the military service of the rival revolutionary factions. In the mean time the mines filled up with water, or were abandoned. In the Spanish-American method of mining, machinery was unknown, and all work, of whatever magnitude, was done with men, or left undone. The mines below water-level, or those above, to which, owing to their situation, it was impossible to drive adits for drainage, were kept free of water by gangs of men who carried it out in hide-buckets on their backs. Another cause of the abandonment of many mines was deficient ventilation. Natural ventilation was the only system known, and, when two openings with considerable difference of level could not be obtained, the extent of the work was limited. The mining-tools were the bar and the horn spoon. In hard rock a short drill and powder were used. The mines were opened sometimes with drifts or adits, but most frequently on the crop. An opening was, for example, made twelve feet in depth, and a notched log set up the side for a ladder. A platform or shelf was left, and a second hole sunk and another log set up; this process was continued until the water or lack of ventilation compelled a halt. At convenient distances levels were driven in the vein and the richest chimneys of ore worked out. The roof was kept up with natural pillars or with wood, which is abundant. All the water and material were carried up these ladders on the backs of men, and this is still the case in the mines worked under native auspices.

The methods of reduction were as crude as the system of mining was primitive. The ore was prepared for the "arrastre," in which it was pulverized, by being broken into small pieces with hand-hammers. The best pieces were selected for treatment, and, after being ground in the "arrastre," were amalgamated by the barrel or "patio" process. Good authorities estimate that not more than 60 per cent. of the assay value of the ore is saved by this treatment, while the expense, owing to the time consumed, labor expended, and loss of mercury, is very great. The lowest cost at present of mining and working the ores, by the native methods, at Tuscara, is $25 a ton.

In order to encourage the development of mines, the mining laws have during late years been modified so as to place foreigners on an equality with natives in taking up new or re-opening abandoned mines. Mining machinery and supplies are admitted duty free, and there are no export duties on the products of mines. Meanwhile the Government of Honduras, with the view of informing the American people as to the resources of Honduras, caused samples of ores and minerals to be made and shipped to San Francisco, where a collection of them was placed on exhibition. Simpler steps to advance the material interests of the country were supplemented by the grant, under authority of the legislature, of valuable abandoned mines and reduction rights to American capitalists, and are now bearing fruit in the rapid development of the country. The mineral or mining district of Tuscara is in one of the most healthful and delightful departments of the republic. It is 5,000 feet above the level of the sea, and the climate varies during
HYDROPHOBIA.

the year only from 60° to 85° Fahr. The nights are cool, the water is excellent, and the mineral district presents the anomaly of a mining camp surrounded by the intelligence, refinement, and culture of the best citizens of the country. These mines have been worked for the past 150 years in the old, rude Spanish way. The native reduction-works have a capacity of about fifteen tons a day, and are kept running to their full extent.

New York capitalists have formed companies to work mines in this district, and are sending on large plants of machinery, with engineers and men. Among the historical mines controlled by these companies are the Queenas, the Guayabilla, Sacramento, Flore, Tamagast, California, and Santa Elena.

Commerce.—The imports during late years have averaged $1,500,000 per annum, and the exports $1,800,000. The latter embrace $600,000 of bullion, $200,000 worth of indigo, $150,000 of cattle, $180,000 in cabinet and dye woods, and $100,000 of hides and skins.

HUNGARY. See Austria-Hungary.

HYDROPHOBIA. This terrible and mysterious malady has hitherto been little understood by physicians, and when fully developed it has been impossible to arrest its course. Several theories have been advanced as to the cause of the disease. Pasteur believes that he has discovered certain micro-organisms that are the essential virus of rabies. Koel is equally confident that these parasites, though undoubtedly present, have nothing to do with the peculiar phenomena. The ingenious idea has been advanced that small blisters or "bysis" appear beneath the tongue in one to three weeks after the bite is received, and that these blisters, in some mysterious way, stand in the relation of cause and effect to the hydrophobic manifestations. In accordance with this theory, it has been claimed on very good authority that the disease has been warded off by promptly cauterizing these vesicles. Even the distinguished French physiologist Pasteur lends his support to this practice. But by far the most important observations with regard to this fatal malady have been recently reported by M. Pasteur, whose name is so famous in connection with the germ-theory of disease. He has been engaged for four years in making experiments with the virus of hydrophobia, and announcement of his results has created a profound impression upon the scientific world. His deductions are briefly these:

1. The poison of hydrophobia, if taken from a dog to a monkey, and then from monkey to monkey, loses some of its power with each fresh inoculation. The poison requires the same virulence that it had at first.

2. When transmitted to successive hosts of the same kind, the virus gains in power.

3. Virus that has once been diminished by passing through animals of different kinds may again be increased in activity by being transmitted to animals of the same kind.

The importance of these experiments was appreciated when we hear that M. Pasteur believes he has at last discovered a cure for hydrophobia. He says, "Thanks to the efforts of the period of incubation of rabies, the communication with the bite of a rabid dog I have reason to believe that we can produce a condition of insensitivity in those who are bitten before the malady is due." The distinguished scientist had not made this confident assertion without a strong basis of fact upon which to rest. He is well known to be an accurate and painstaking observer, and statements might sound chimerical when proceeding from a lesser man. Our careful consideration is justified by the fact that they are made by him.

M. Pasteur himself is far from prepared to put his theory to the test by inoculating a human being with the virus of hydrophobia: he thinks that many additional experiments must be performed upon animals before he will be justified in venturing upon the human subject. But his statements have received approval. The committee appointed by the International Medical Congress to test the reliability of the communications that he made have already reported upon their series of experiments. Forty-three dogs selected, nineteen of which were inoculated with the virus of rabies. All of the others were then exposed to the bites of rabid dogs. The nineteen vaccinated animals alone escaped death, the others being attacked with hydrophobia.

IDAHO. Territorial Government.—The following were the Territorial officers during the year: Governor, John N. Irwin, succeeded by William M. Bunn; Secretary, Edward L. Curtis; Comptroller and Superintendent of Public Instruction, James L. Onderdonk; Treasurer, John Huntoon; Chief-Justice of Supreme Court, John T. Morgan; Associate Justices, Norman Buck and Henry E. Frickett.

Financial.—The Territory is practically free from debt, having a funded indebtedness of $69,268.60, which is represented and to be paid as follows:

Bonds due Dec. 1, 1865. $600
Bonds due Dec. 1, 1891. 600
Total. 1,200
To off this there is cash on hand. 600

This result has been achieved under a tax rate of from 75 cents to 1 dollar on the $100 within the past three years, from 40 cents to 25 cents during the past year and during the time, owing to the increased population, a heavier drain by the price of indigestion sickness, and insane, etc., the expenses of the Territory have more than doubled. There is due from the counties, on the
or this year, the sum of $35,980.54, is the burden of expense to which the establishment is subjected in the care of the Territorial inmates. The amounts expended on the past two years are as follows:

- Marshal's bills ........................................ $30,980.00
- for transportation ...................................... $40.00
- for capture of escaped prisoners ..................... $10.00
- Total .................................................. $31,030.00

Monthly table shows the number of tax-payers and the total valuation of real and personal property in the Territory for the past seven years:

<table>
<thead>
<tr>
<th>Year</th>
<th>Tax-payers</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1884</td>
<td>5,698</td>
<td>$4,494,960.57</td>
</tr>
<tr>
<td>1885</td>
<td>5,102</td>
<td>$3,782,419.80</td>
</tr>
<tr>
<td>1886</td>
<td>5,670</td>
<td>$4,216,058.14</td>
</tr>
<tr>
<td>1887</td>
<td>6,041</td>
<td>$5,062,620.75</td>
</tr>
<tr>
<td>1888</td>
<td>6,162</td>
<td>$5,580,071.05</td>
</tr>
<tr>
<td>1889</td>
<td>7,019</td>
<td>$6,456,453.81</td>
</tr>
<tr>
<td>1890</td>
<td>12,971</td>
<td>$10,467,069.94</td>
</tr>
</tbody>
</table>

The number of children began at five and twenty-one, in 1885, 6; in 1886, 14; in 1887, 9; in 1888, 238. Graded schools established in Boise City and Lewiston number 25; in 1884, 42. There were 64 convicts in the Territorial Penitentiary. It is claimed that all the public property and the Territory has a valuation of $30,000, at the rate of 20 per cent. per annum.

- The Governor, in his report to the Governor, says:

> our chief source of wealth, and employs a greater number of men and a greater capital than any other industry. The discovery of gold and silver during the past year a ratio of 80 per cent.; the output of mining, as nearly as can be estimated, about $70,000,000. Idaho has a greater population than any other Territory in the United States, in 100 miles of the Rocky Mountains, in the Owyhee county, and run the entire to Lake Pend d'Oreille, 400 miles. The discovery of gold and silver has been the mainstay of this Territory, and is now generally the richest silver-lead producing country.

Agriculture and Stock-Raising. Agriculture has been steadily on the increase. The considerable mining towns and camps afford a market for the farmer. Wheat, barley, potatoes, and garden vegetables, yield abundantly. The valleys are admirably adapted to the growth of fruit. In stock-raising, 80,000 head of cattle are employed, and the total number of cattle in the Territory is estimated at 80,000.

Reclamation of Desert Land. The progress of this important work may be seen from the following table:

<table>
<thead>
<tr>
<th>Railroad</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utah and Northern</td>
<td>900</td>
</tr>
<tr>
<td>Oregon Short Line (main line)</td>
<td>420</td>
</tr>
<tr>
<td>Oregon Short Line (Wood river branch)</td>
<td>120</td>
</tr>
<tr>
<td>Northern Pacific</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>520</td>
</tr>
</tbody>
</table>

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<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>520</td>
</tr>
</tbody>
</table>
a canal is nearly finished that will reclaim between 40,000 and 50,000 acres in Cassia county (along the south side of the Snake river), Raft river, Goose creek, and many smaller streams are owned entirely by the Mormons and held by them for agricultural purposes. At Shoshone, in Afton county, twenty-five miles north of Snake river, Little Wood river has been turned on the desert, and a thriving town with its outlying farms has grown and is growing, where but two short years ago was a sage-brush-covered, desert plain. In the Bruneau valley 60,000 acres are already under cultivation, and a canal has been started to cover from 25,000 to 30,000 acres more. In Wood river valley a canal has been constructed and irrigates over 20,000 acres, while below these now fruitful acres lie 50,000 acres that will shortly be covered with water and cultivated. The Idaho Mining and Irrigation Company of New York is constructing a canal with a capacity of 4,000 cubic feet of water per second, which takes the waters of the Boise about seventy-five miles above its confluence with Snake river. This canal will irrigate and reclaim about 600,000 acres of land on the north side of Snake river and south of Boise City. On Payette river two canals are nearly completed that will cover over 50,000 acres, while a third is contemplated that will reclaim 30,000 acres more. On the Weiser about 75,000 acres are being irrigated and will be irrigated when the new canals now building in addition to the above, are maturing to take the waters of Snake river and reclaim nearly 3,000,000 acres of valley land.

Mormonism.—On this vexed subject, which is becoming involved in the politics of the Territory, the Governor expresses his views with great emphasis:

The question of polygamy has grown to such gigantic and monstrous proportions as actually to overshadow our present and imperil our future as a Commonwealth. With Utah on the southern borders of Idaho, crowded with Mormons, the passes through the Owyhee mountains at hand and inviting immigration, swarms of the faith flit through the passes, pre-empt the land, founded villages, erected temples of idolatry, and have since lived in defiance of all law, except the canons of the Mormon Church and the direct commands of the apostles of lechery. Their numbers are so considerable, their organization so close, and their obedience to the command of church so servile, that they are able, by alliance with one of the political parties of the Territory, to throw what was, what is now, what was once, the entire weight of the juridical, or executive, or legislative authority, to the purposes of the community. In fact, the influence of the body is so great that the government of the State is in a degree a mere appendage to the Mormon Church.

The Anti-Mormons act with the Republicans.

The most important law passed before the close of the session was one directed against Mormons requiring county and precinct officers, before entering upon the discharge of their duties, to give bond with two or more sureties in considerable sums for the faithful discharge of their official duties, and to take and subscribe the following oath, to wit:

I do solemnly swear that I am a male citizen of the United States over the age of twenty-one years. That I have actually resided in Idaho Territory for a period of four months and in this county thirty days not preceding the date of my election (or appointment). That I am not a member of any order, sect, or organization which teaches, advises, or encourages the practice of bigamy or polygamy, or any other crime defined by law, as a duty or privilege resulting or arising from the faith or practice of such order, sect, or organization; or that teaches, counsels, encourages, or advises any person or persons to commit the crime of bigamy, polygamy, or any other crime defined by law, as a religious duty. That I am not a bigamist or polygamist. That I do not cohabit with any woman as my lawful wife. That I do not either publicly or privately teach, counsel, encourage, or advise any person or persons to enter into bigamous or polygamous relations. That I believe in no illegal or adulterous marriage. That I hold the Constitution of the United States and the laws thereof as of this Territory, as interpreted by the courts, as the
ILLINOIS.

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I. L. S. T. E. O. N. G. — The following State officers during the year: Governor, John M. Hamilton, Republican; Secretary of State, Henry D. Dement; Treasurer, John Smith; Auditor, Charles F. Swigert; Attorney General, James McCartney; Superintendent of Public Instruction, Henry Raab; Railroad Commissioners, Edward C. Lewis, Charles M. Cottrell, and William N. Brainard. Judges of the Supreme Court: Chief-Justice, Benjamin R. Sheldon; Associate Justices, Alfred Craig, John M. Schofield, T. Lyle Dickey, Horatio H. Walker, John H. Maloney, and John Cottrell.

The receipts from all sources from 1, 1882, to Sept. 30, 1884, inclusive, were as follows:

FOR THE YEAR 1883.

<table>
<thead>
<tr>
<th>Personal property</th>
<th>Land</th>
<th>Town and city lots</th>
<th>Railroads</th>
<th>Capital stock of corporations</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$168,097,810</td>
<td>$254,180,313</td>
<td>$194,015,669</td>
<td>$200,983,300</td>
<td>$2,015,092</td>
<td>$717,954,717</td>
</tr>
</tbody>
</table>

FOR THE YEAR 1884.

<table>
<thead>
<tr>
<th>Personal property</th>
<th>Land</th>
<th>Town and city lots</th>
<th>Railroads</th>
<th>Capital stock of corporations</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>$160,994,410</td>
<td>$266,425,899</td>
<td>$194,529,562</td>
<td>$200,570,297</td>
<td>$2,015,092</td>
<td>$719,502,599</td>
</tr>
</tbody>
</table>

ASSESSMENT OF LIVE-STOCK FOR 1883 AND 1884.

<table>
<thead>
<tr>
<th>HOGS</th>
<th>CATTLE</th>
<th>BULLS AND ASS.</th>
<th>SHEEP</th>
</tr>
</thead>
<tbody>
<tr>
<td>915,186</td>
<td>$29,491,955</td>
<td>1,409,587</td>
<td>$20,561,411</td>
</tr>
<tr>
<td>915,900</td>
<td>$29,058,664</td>
<td>1,421,927</td>
<td>20,105,905</td>
</tr>
</tbody>
</table>

ACRES IN CULTIVATION, ETC.

<table>
<thead>
<tr>
<th>Wheat</th>
<th>Corn</th>
<th>Oats</th>
<th>Maize</th>
<th>Other field products</th>
<th>Inclosed pastures</th>
<th>Orchard</th>
<th>Woodland</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,926,572</td>
<td>7,946,290</td>
<td>5,449,560</td>
<td>2,922,290</td>
<td>3,029,290</td>
<td>710,749</td>
<td>4,065,096</td>
<td>509,795</td>
</tr>
<tr>
<td>2,926,572</td>
<td>7,946,290</td>
<td>5,449,560</td>
<td>2,922,290</td>
<td>3,029,290</td>
<td>710,749</td>
<td>4,065,096</td>
<td>509,795</td>
</tr>
</tbody>
</table>

The necessary revenue for State approved June 2, 1883, authorized raise for general State purposes on for the assessment for 1883, and on the assessment for 1884; and school purposes $900,000 on the assessment for 1883, and $1,000,000 on the assessment for 1884. Each $100 of the equalized assessment for 1883, for general State purposes, 20 cents; for State school purposes, 12 cents; and for general State purposes, 14 cents, thus making the aggregate rate of State tax for 1883 32 cents, and for 1884 35 cents.

Tuition.—The following summary of statistics shows the condition of the common schools of Illinois for the year ending June 30,
1884. Some comparisons are made between the years 1874 and 1882, and the year 1884:

<table>
<thead>
<tr>
<th>Category</th>
<th>1874</th>
<th>1882</th>
<th>Increase in two years</th>
<th>Increase in ten years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole number between 6 and 91 in 1874</td>
<td>1,066,517</td>
<td>1,427,947</td>
<td>361,430</td>
<td>361,430</td>
</tr>
<tr>
<td>Whole number between 6 and 91 in 1882</td>
<td>1,288,679</td>
<td>1,601,459</td>
<td>312,780</td>
<td>312,780</td>
</tr>
<tr>
<td>Increase in two years</td>
<td>361,430</td>
<td>361,430</td>
<td>361,430</td>
<td>361,430</td>
</tr>
<tr>
<td>Increase in ten years</td>
<td>361,430</td>
<td>361,430</td>
<td>361,430</td>
<td>361,430</td>
</tr>
</tbody>
</table>

The total number enrolled in graded schools in 1884 was 226,705; in 1882 it was 226,620; increase in two years, 93,085.

<table>
<thead>
<tr>
<th>Category</th>
<th>1884</th>
<th>1882</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male enrolled in ungraded schools</td>
<td>200,000</td>
<td>198,934</td>
<td>$1,066</td>
</tr>
<tr>
<td>Female enrolled in ungraded schools</td>
<td>198,934</td>
<td>198,077</td>
<td>857</td>
</tr>
<tr>
<td>Total</td>
<td>398,934</td>
<td>397,011</td>
<td>1,923</td>
</tr>
</tbody>
</table>

The total enrollment in ungraded schools in 1884 was 399,976; in 1882 it was 417,811; decrease in two years, 17,835. The number of school-houses is given thus:

<table>
<thead>
<tr>
<th>Category</th>
<th>1874</th>
<th>1882</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stone school-houses</td>
<td>998</td>
<td>111</td>
<td>887</td>
</tr>
<tr>
<td>Brick school-houses</td>
<td>1,366</td>
<td>1,280</td>
<td>86</td>
</tr>
<tr>
<td>Frame school-houses</td>
<td>10,178</td>
<td>10,241</td>
<td>63</td>
</tr>
<tr>
<td>Log school-houses</td>
<td>281</td>
<td>874</td>
<td>593</td>
</tr>
<tr>
<td>Total</td>
<td>13,053</td>
<td>11,594</td>
<td>1,459</td>
</tr>
</tbody>
</table>

The total number of schools in 1884 was 11,998, and the total number of teachers 19,997. The average wages paid to male teachers was $51.81 a month; to female teachers, $40.44. The total amount paid to teachers was $5,640,473.05. A fair accurate estimate of the cost of maintaining the public schools of the State, and the educational institutions of the State that belong to the public-school system, is this:

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$5,640,473.05</td>
</tr>
</tbody>
</table>

The total expenditures by districts were as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$5,640,473.05</td>
</tr>
</tbody>
</table>

The portion of this that has to be met by taxation is $5,444,489.75, a little more than one per cent upon the assessed value of the property of the State.

The estimated value of school property is as follows:

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>School buildings and sites</td>
<td>$20,508,085</td>
</tr>
<tr>
<td>School furniture</td>
<td>712,970</td>
</tr>
<tr>
<td>School apparatus</td>
<td>230,546</td>
</tr>
<tr>
<td>Total</td>
<td>$21,451,601</td>
</tr>
</tbody>
</table>

This does not include the value of libraries, grounds, apparatus, and apparatus held by State and county educational institutions. The estimated value of these is:

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois State Normal University</td>
<td>$184,500</td>
</tr>
<tr>
<td>Illinois Industrial University</td>
<td>47,017</td>
</tr>
<tr>
<td>Institution for the Deaf and Dumb</td>
<td>443,094</td>
</tr>
<tr>
<td>Institution for the Blind</td>
<td>178,912</td>
</tr>
<tr>
<td>Institution for the Feeble-Minded</td>
<td>220,000</td>
</tr>
<tr>
<td>Cook County Normal School</td>
<td>120,900</td>
</tr>
<tr>
<td>Total</td>
<td>$353,612,602</td>
</tr>
</tbody>
</table>

Charitable Institutions.—The following figures show the number of inmates, cost per capita, total expenditures, etc., of each State charitable institution:

<table>
<thead>
<tr>
<th>Category</th>
<th>Number of Inmates</th>
<th>Cost per Capita</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Insane Hospital</td>
<td>205</td>
<td>$209</td>
<td>$42,950</td>
</tr>
<tr>
<td>Eastern Insane Hospital</td>
<td>514</td>
<td>$460</td>
<td>$235,640</td>
</tr>
<tr>
<td>Central Insane Hospital</td>
<td>389</td>
<td>$360</td>
<td>$139,020</td>
</tr>
<tr>
<td>Southern Insane Hospital</td>
<td>756</td>
<td>$217</td>
<td>$163,262</td>
</tr>
<tr>
<td>Institution for the Deaf and Dumb</td>
<td>800</td>
<td>$271</td>
<td>$217,000</td>
</tr>
<tr>
<td>Institution for the Blind</td>
<td>920</td>
<td>$450</td>
<td>$414,000</td>
</tr>
<tr>
<td>Asylum for the Feeble-Minded</td>
<td>291</td>
<td>$100</td>
<td>$29,100</td>
</tr>
<tr>
<td>Soldiers' Orphans' Home</td>
<td>817</td>
<td>$175</td>
<td>$143,525</td>
</tr>
<tr>
<td>Eye and Ear Infirmary</td>
<td>70</td>
<td>$294</td>
<td>$20,580</td>
</tr>
<tr>
<td>State Reform School</td>
<td>36</td>
<td>$151</td>
<td>$5,436</td>
</tr>
<tr>
<td>Total</td>
<td>3,709</td>
<td>$208</td>
<td>$757,535</td>
</tr>
</tbody>
</table>

The total expenditures by each institution were as follows:

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<tr>
<th>Category</th>
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<td>20,580</td>
</tr>
<tr>
<td>State Reform School</td>
<td>757,535</td>
</tr>
<tr>
<td>Total</td>
<td>$1,067,027</td>
</tr>
</tbody>
</table>

Penitentiaries.—The Northern Penitentiary at Joliet is self-supporting so far as ordinary expenses are concerned. The $50,000 appropriated by the last General Assembly as a contingent fund has not been drawn upon. This result has been produced by the favorable position and opportunities of the penitentiary for securing good contracts for the work of the prisoners.

The Southern Illinois Penitentiary at Chester is comparatively new and is still incomplete. It has only a capacity for taking care of 400 prisoners as a maximum. It has but one workshop, which is occupied by the contractors in shoe-manufacturing. It has also a brick-yard, making bricks from clay within the stockade, which is let to contractors. These two industries contract for and employ about 300 men at good wages. Of the average of 700 kept in the Southern Penitentiary, about 300 were let on contract work, while the remaining 400 were either employed in the immense stone-quarry within the stockade, reducing a hill of stone, and producing rip-rap and paving stone, which
sold at good prices, or were doing work of State improvement about the penitentiary. Much work for the State for improvements about the penitentiary has been done by the convicts, which does not show in cash against the subsistence account.

High License.—The Supreme Court during the year affirmed the judgment of the lower court in the case of Tunn v. Harrison, Mayor of Chicago. This was a case brought by Tunn on behalf of the Illinois State Liquor-Dealers' Association against Mayor Harrison to compel him to issue to the complainant a $100 saloon license, under a city ordinance passed prior to the time when the Harper law went into effect —July 1, 1883. The license was refused by Mayor Harrison, on the ground that the "Harper" law required the payment of $500 for a license to sell spiritsuous liquors within the State. Tunn's bill set up the unconstitutionality of the law. The decision rendered was against the liquor men, and pronounced the "Harper" law constitutional.

Military Affairs.—On Sept. 30, 1884, the Illinois National Guard was shown by official reports to number 4,939 officers and men. It is well organized into nine regiments of infantry, one regiment of cavalry, three batteries of artillery, and one detached company (colored) of infantry.

The Corn-Crop.—The area of the corn-crop of 1884 was 6,894,819 acres, which is less than that of any preceding year since 1873. The average yield for the State is 35 bushels an acre, which exceeds the yield since 1872, excepting the crops of 1875 and 1879. The aggregate corn-crop for the State for 1884 is 207,556,662 bushels, and exceeds the corn-crops of the three preceding years by 20,000,000 to 30,000,000 bushels. The average price in first hand is reported to be 29 cents a bushel. The price for corn has not ruled so low in the State since 1860, except in 1861, 1862, 1872, 1877, and 1878.

National.—The Republican State Convention met in Peoria April 18, chose delegates to the National Convention of the party, and nominated candidates for President, for Vice President, and for the Senate. The following were the nominees: For Governor, Richard J. Oglesby; for Lieutenant-Governor, John C. Smith; for Secretary of State, Henry D. Dement; for Treasurer, Charles P. Swigert; for Auditor, Jacob Gross; for Attorney-General, George R. Egbert.

The Prohibition State Convention met in Bloomington June 19, and nominated J. B. Hobbs for Governor; Dr. Perryman was nominated for Lieutenant-Governor; Hale Johnson, for State Attorney; Uriah Copp, for Treasurer; A. B. Irwin, for Auditor; C. W. Enos, for Secretary of State.

The Joint State Convention of the Greenbackers and Anti-Monopolists met in Bloomington August 57, and the following ticket was nominated: Governor, Jesse Harper; Lieu-
tenant-Governor, A. C. Vandewater; Secretary of State, H. B. Baldwin; Auditor, E. F. Reeves; Attorney-General, John M. Gwinn; State Treasurer, H. W. Goodhue.

The Democratic nominees were: For Governor, Carter Harrison; for Lieutenant-Governor, Henry Seiter; for Secretary of State, Michael J. Dougherty; for Treasurer, Albert Orendorff; for Auditor, Walter E. Carlin; for Attorney-General, Robert B. McKinlay.

The vote on November 4 was as follows: Republican Presidential Electors, 387,469; Democratic, 381,951; Greenback, 10,776; Prohibition, 12,074. The Republican nominees for State offices were all elected, by pluralities ranging from 14,599 to 24,806.

The appropriation for completing the State House was approved by the people, and a constitutional amendment authorizing the Governor to veto one or more items or sections of a bill, and approve the residue, was ratified.

The Legislature of 1885 consists of 36 Republicans and 35 Democrats in the Senate, and 76 Republicans and 77 Democrats in the House—a tie on joint ballot, though some of the members are of independent proclivities. Extensive election frauds were brought to light in Chicago, especially in the Sixth Senatorial district, where an attempt was made to count out the Republican and count in the Democratic candidate, but without ultimate success. Ten Republicans and ten Democratic Congressmen were elected.

The Governor discusses the election laws, with special reference to the frauds just mentioned, and says: "I have no doubt whatever that it is not only the plain command of the law, by implication at least, that canvassing boards shall only canvass returns known to be true returns, and shall reject returns known to be false and forged, but that every sense of right and justice commands them to do it. Neither have I the slightest doubt that the power is vested by the Constitution and laws of the State in the Governor to refuse to issue certificates of election to persons shown to have been elected on returns known and universally admitted to be false and forged, and not the expression of the will of the people; nor of his power to issue certificates of election to the person shown to be elected by true returns, if such true and legal returns were once made out, and their contents can be unquestionably ascertained, even if canvassing boards do, in violation of law, canvass the false returns, and thus attempt to show one elected who was not."

Chicago.—The total number of white persons in the city, as shown by the census taken by the Board of Education, on the 1st day of June, was 616,323, of which number 209,631 were German, 143,000 American, and 114,005 Irish.

The total representation of the white nations that make up the population of Chicago was as follows:
The question of the constitutionality of the act under which damages could be recovered from the owners of horses in which money had been lost in gambling, came up during the year in this city in the case of Learned vs. Tierman. In 1878 the husband of the plaintiff lost $3,000 gambling in a house of the defendant. The wife brought suit for damages under the penal code, which allows triple damages for losses sustained in gambling. Judge Smith, of the Superior Court, declared the act unconstitutional for defect in the title.

INDIA, an empire and viceroyalty in Asia, subject to the British Crown. The area and population of British India, according to the census taken on Feb. 17, 1881, are as follows:

<table>
<thead>
<tr>
<th>PRESIDENCIES AND PROVINCES</th>
<th>Square Miles</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under the Governor-General:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ajmere</td>
<td>2,711</td>
<td>480,739</td>
</tr>
<tr>
<td>Bencor</td>
<td>17,711</td>
<td>3,829,678</td>
</tr>
<tr>
<td>Bombay, including Sind</td>
<td>144,001</td>
<td>81,783,651</td>
</tr>
<tr>
<td>Bengul</td>
<td>108,190</td>
<td>6,388,941</td>
</tr>
<tr>
<td>North West Provinces and Oudn</td>
<td>104,114</td>
<td>64,107,569</td>
</tr>
<tr>
<td>Punjab</td>
<td>106,683</td>
<td>53,306,662</td>
</tr>
<tr>
<td>Under Chief-Commissioners:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assam</td>
<td>44,941</td>
<td>4,551,645</td>
</tr>
<tr>
<td>British Burmah</td>
<td>87,920</td>
<td>5,858,710</td>
</tr>
<tr>
<td>Central Provinces</td>
<td>94,440</td>
<td>5,995,391</td>
</tr>
<tr>
<td>Total British administration</td>
<td>211,070</td>
<td>201,685,997</td>
</tr>
<tr>
<td>Native states</td>
<td>417,849</td>
<td>50,002,924</td>
</tr>
<tr>
<td>Total</td>
<td>1,209,924</td>
<td>500,681,921</td>
</tr>
</tbody>
</table>

The male element predominates in the population, numbering 129,841,651 individuals, against 129,949,970 females.

Races and Creeds. There were in 1881:

- Hinduos 187,987,450
- Mohammedans 60,129,543
- Parsees 6,486,311
- Parsees 8,414,984
- Christians 1,952,004
- Others 926,029

Total 258,991,821

Coeliac Emigration. The numbers of cooies who left India in search of occupation elsewhere during eleven consecutive years were as follows:

- 1879: 11,084
- 1880: 11,600
- 1881: 15,413
- 1882: 20,987
- 1883: 29,248
- 1884: 29,950
- 1885: 30,823
- 1886: 11,498
- 1887: 11,500

City Population. The last census established the population of the largest cities as follows:

- Bombay 719,198
- Calcutta 745,391
- Madras 485,945
- Hyderbad 524,835
- Benares 199,700


The American Consul-General for India, at Calcutta, is J. A. Leonard; the Consul at Bombay is B. F. Farnham.

Army. The British and native forces in India are composed as follows:

<table>
<thead>
<tr>
<th>BRITISH ARMY</th>
<th>Dec. 31, 1881</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse artillery</td>
<td>9,200</td>
<td>11,900</td>
</tr>
<tr>
<td>Foot artillery</td>
<td>7,000</td>
<td>9,500</td>
</tr>
<tr>
<td>Sappers and miners</td>
<td>7,000</td>
<td>9,500</td>
</tr>
<tr>
<td>Foot infantry</td>
<td>1,500</td>
<td>1,500</td>
</tr>
<tr>
<td>Superior officers</td>
<td>1,500</td>
<td>1,500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NATIVE ARMY</th>
<th>Officers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horse 48 regiments</td>
<td>500</td>
</tr>
<tr>
<td>Foot 145 regiments</td>
<td>500</td>
</tr>
</tbody>
</table>

Total 8,212 117,670 125,882

Finance. The public debt of India stood thus on March 31, 1882:

Consolidated debt | £147,055,000
Payable in India | £81,013,000
Payable in England | £56,042,000

Portions of debt not consolidated | £22,165,000

Total | £171,120,000

Against debt March 31, 1881 | £170,640,000

The budget estimates were as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>847,000,000</td>
</tr>
<tr>
<td>Expenditure</td>
<td>847,000,000</td>
</tr>
</tbody>
</table>

ACTUAL INCOME AND OUTLAYS.

<table>
<thead>
<tr>
<th>Item</th>
<th>Income</th>
<th>Outlay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>70,120,571</td>
<td>70,120,571</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Income</th>
<th>Outlay</th>
</tr>
</thead>
<tbody>
<tr>
<td>1891-92</td>
<td>72,144,601</td>
<td>58,124,189</td>
</tr>
<tr>
<td>1892-93</td>
<td>70,120,571</td>
<td>50,356,000</td>
</tr>
<tr>
<td>1893-94</td>
<td>14,101,960</td>
<td>69,416,000</td>
</tr>
</tbody>
</table>
INDIA.

1881. 1882.

Gross earnings... £14,830,988 £15,901,289
Expenses... 7,071,941 7,260,000
Net earnings... £7,759,047 £8,641,289
Profit on capital... 54 per cent. 58 per cent.

The East Bengal Railroad paid the highest dividends, 10½ per cent. in 1882, and 9½ per cent. in 1881; the next highest, the East India Railroad, 8½ per cent. and 9½ per cent. The rolling stock consisted in 1883 of 2,453 locomotives, 5,680 passenger and 47,431 freight cars. The number of employes was 169,577 on Sept. 30, 1881, 162,043 of whom were natives, and a year later 185,736, 178,018 of them being natives.

Without counting the Assam, Jodhpur, and Pondicherry Railway, on March 31, 1884, there were in operation 10,882 miles. The gross earnings in 1883 had been £16,899,381, the expenses £7,951,773, leaving net earnings to the amount of £8,947,610.

The movement during three years is shown thus:

<table>
<thead>
<tr>
<th></th>
<th>1881</th>
<th>1882</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Passengers</td>
<td>Freight, tons</td>
<td></td>
</tr>
<tr>
<td></td>
<td>54,763,608</td>
<td>15,214,074</td>
<td>55,098,528</td>
</tr>
<tr>
<td></td>
<td>56,873,918</td>
<td>14,389,348</td>
<td>56,098,528</td>
</tr>
</tbody>
</table>

In the summer of 1884 the Bombay Chamber of Commerce submitted a memorial to the Viceroy, urging that railway extension be prosecuted at the rate of 2,000 or 3,000 miles annually for the next ten years, at a cost of £200,000,000 per annum. The Chamber, at the same time, recommended that this sum be raised by sterile loans in London at a guaranteed interest of 5½ per cent. in perpetuity. A committee of the House of Commons, independently of the suggestion coming from Bombay, simultaneously recommended an advance of about £80,000,000 for the same purpose, on condition that private capitalists subscribe an equal amount.

J. M. Maclean, late proprietor of the Bombay "Gazette," meanwhile read a paper on the "State Monopoly of Railways in India," before the London Society of Arts. He contended that the custom, which Indian financiers found so convenient when they were preparing their annual budgets, of regarding the Indian railways as one great property, and thinking all was well, provided they could show a net surplus, led to results that were by no means advantageous or just to the trade of the country. The inherent weakness of the state monopoly became apparent when it was found that this system tempted the Government to cover deficits on unprofitable lines, by making illegitimate gains out of excessive rates charged on the traffic of productive lines; the commercial lines were forced to bear, not only their own expenses, but also a large proportion of the cost of working the lines constructed mainly for political purposes.
Ship Routes.—According to a statement made by Messrs. Duncan Brothers, of Calcutta, the amount of merchandise that is shipped to England from Calcutta began in 1888 to preponderate in favor of the Suez route, as compared with that around the Cape of Good Hope.

Telegraphs.—The number of offices in operation in 1888 was 324, exclusive of those connected with the railway service. Length of lines, 21,740 miles; length of wire, 62,880 miles, exclusive of 180 miles of cable; number of paid messages, 1,810,906; receipts, £541,515; expenses, £205,379.

Postal Services.—The following tabular statement shows the growing importance of the amount of items of mail matter dispatched:

<table>
<thead>
<tr>
<th>Years</th>
<th>Off.</th>
<th>Letters</th>
<th>Newspapers</th>
<th>Receipts</th>
<th>Expenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>1879-80</td>
<td>4,410</td>
<td>118,067,004</td>
<td>3,350,021</td>
<td>£295,817</td>
<td>£224,189</td>
</tr>
<tr>
<td>1880-81</td>
<td>4,802</td>
<td>142,908,105</td>
<td>3,932,804</td>
<td>999,278</td>
<td>969,501</td>
</tr>
<tr>
<td>1881-82</td>
<td>4,819</td>
<td>150,213,467</td>
<td>3,258,500</td>
<td>945,825</td>
<td>928,269</td>
</tr>
<tr>
<td>1882-83</td>
<td>5,010</td>
<td>160,118,869</td>
<td>4,073,617</td>
<td>971,885</td>
<td>963,725</td>
</tr>
</tbody>
</table>

The Afghan Frontier.—When, in March, 1885, the Afghan frontier question came to be settled between Great Britain and Russia, after the occupation of Merv by the Russians, February, 1884, the danger of seeing Herat fall into the possession of the Russians caused, both in India and England, the greatest excitement. On March 5, Baron de Staal, the Russian ambassador, had an interview with Mr. Gladstone and communicated a dispatch from M. de Giers, the Russian Minister of Foreign Affairs, in which he denied that the Russian occupation of Akrobat, Bulukar Pass, and Sarijuz was designed to forestall the decisions of the joint commission on the Russo-Afghan frontier. He said the advance of the Russians from Pul-i-Khatum was only ordered after the Afghans, in July last, preceding the negotiations for the organization of the commission, had occupied Penjdeh, and in January had occupied Sarijuz, whence the Afghans withdrew on the advance of the Russians; that M. de Giers did not object to the right of Russia to hold the disputed outposts, but that he refused to withdraw the Russian troops until the commission presented its report on the frontier question.

Newspapers.—India, in 1884, possessed 280 newspapers in the languages of the country. The first paper in a native language appeared in 1808, being founded by missionaries, and occupied entirely with religious matters. These papers have only occupied themselves with political affairs since 1860. Among the names they assume are: the "Mirror of Medicine," the "Noblist of all Papers," the "Ocean ofWisdom," the "Poet's Garland," and the "Water of Indian Life."

Goats and Famine.—According to the "Indian Forster," famines in India are caused by goats. The goats of India appear, as a rule, to live always on the brink of starvation, collecting a scanty livelihood out of the barrenest materials. They attack the green shoots and topmost twigs of every young tree they come across. A herd of goats, numbering 15,000 to 20,000, as is sometimes the case in those desert tracts, is not likely to leave much vitality in the saplings in its line of grazing. The old trees, unless re-enforced from time to time by a younger growth, die off, and whole forests thus disappear. Without forests the rainfall ceases, and without rain the crops fail. In spite of the enormous extent of the Indian plains, it is possible that the action of goats is thus indirectly responsible for the droughts.

Snakes.—The enormous annual loss of life in India by snake-bites, amounting to nearly 80,000 persons, continues in spite of the wholesale destruction of these venomous creatures. The rewards paid by the Government to snake-destroyers show that there were killed in 1884, throughout India, 329,421, of which 263,384 were found in the Bombay Presidency alone. Local authorities are warned to remove from town or village sites, or their vicinity, boas, cactus, or thorn hedges, ruined houses and walls, and the like, which harbor these reptiles.

Gold.—Interest in the India gold properties, which thus far have proved a lamentable failure, has revived in consequence of the success of the Mysore Gold Company. From June to November, both inclusive, this company crushed 622 tons of rock, which yielded 970 ounces of gold, the result of stamping 191 tons in November being three ounces a ton. Several defunct companies in the district were preparing to reorganize, and the prospect toward the close of the year was favorable.

Petroleum.—The discoveries of petroleum at Sibi, near Quetta, in the northwest of India, may affect the future of the Russian wells at Baku, on the Caspian Sea, much more than it will affect the Russian business in the Caspian region, for it will be seen whether the Sibi strata will justify the hopes entertained of them, as they have not been thoroughly tested by boring. But arrangements were in contemplation to introduce Caspian oil into India by way of the Suez Canal and the Red Sea.

Tea.—It appears from recent statistics that 1888 was a favorable year for tea-cultivation in Assam, the prices obtained being better than those of the previous year, and the output being nearly 7,000,000 pounds in excess of the yield of 1882. Many new gardens were opened. The total area of land held by tenants in 1883 was 928,654 acres—an increase of 140,802 acres over the area of 1882, and of 217,015 over the area of 1881. The yield of tea during the year was 52,171,207 pounds, of which the gardens in the Assam valley contributed 84,111,320 pounds, and the gardens in the Surma valley 18,920,944 pounds. The average yield per acre was for the whole province 253 pounds, as compared with 292 pounds in 1882. There has been a continuous increase in the production of tea in Assam during the past five years, the yearly quantity having risen from 51,886,686 pounds in 1879 to 52,171,207 pounds in 1882.
in 1883. Regarding the profits of the year, the net returns upon the capital employed during 1883, by thirty-nine companies making balance-sheets for the year, were 1, or 21 per cent. on their capital; six companies that made a profit on return of 3 per cent. on their capital, even lost at the rate of 7 per cent. on pitiable. There are now fifty-three teas registered in India.

**making.**—Paper-making on an extensive scale has been inaugurated in India. There are mills in the neighborhood of Calcutta, Lucknow, one in Gwalior, and one in , all worked by machinery and native ca.

**European overseers.** Much of the Government paper is obtained of local manufacturers in As, the Calcutta "English" daily of four large pages, was printed made at Barrackpore, on the banks of Hooghly. The paper was equal to the imported superior, and the cost considerably cheaper. The cheapness of raw material, galee labor at 35 a month, and considerations of economy, have been predisposing to Europe. In a report Mr. J. E. O'Connor, of the Indian Cotton, Commerce, thus criticises this curious thing that the Indian paper—mills dispose themselves to making paper of the kind, using old gunny-bags for their mate—seeking everywhere for fibrous materials fit for purpose, while the manu factory sends bags and other raw materials for good paper to England and the other paper—making materials, sufficiently to make a very good beginning for useful development which in this country is desirable. The official report from Calcutta, an. 16, 1886, said that, in the North-Western Provinces and Oude, the area under on with wheat had been increased no less than 300,000 acres, the total area being now 5,328,000 acres, against 5,106,000 in 1882. The report of wheat from India in 1882 was 00 hundred-weight; in 1883 it was 90 hundred-weight. The Government "Revenue and Agricultural Department of India," issued in January, 1885, the report relating to the area under on wheat, as well as crop prospect." Averages area under wheat in India in ordinary order to a recent estimate, is about 36,000; the average crop was 7,000,000 tons. Of this area 18,000,000 acres, or nine-tenths, lie in the four British provinces of the North-Western Provinces and Oude, the provinces and Bombay. During the last year of monthly forecasts of the condition of and the wheat-crop was tentatively started in provinces, and reports for November and December have now been received. In the Punjab the prospects are very bright; the crops are excellent. The area under crop is estimated at 7,350,000 acres, the average area being 6,000,000 acres. In the North-Western Provinces and Oude the November forecast was exceptionally favorable. An area of 5,500,000 acres had been sown, against an average of 4,000,000 acres, the seed having germinated well owing to the late October rains, and a bumper crop was predicted. The December forecast, however, is less favorable, as, owing to the entire absence of winter rains, the young crop has suffered. In the central provinces, owing to the early cessation of the monsoon rains, a smaller area than usual has been sown with wheat. The average area of recent rains has been nearly 4,000,000 acres. This year the decrease ranges in the several districts from 5 to 10 per cent. Present prospects are all that could be desired, as, owing to recent rain, the crop is in excellent condition. A special report from the Benares estimates the present year's crop at 845,000,000, or 5 per cent. above the average, and says the crop is in good condition.

**Irrigation.**—The rainfall during a period of four months on the west slopes of the Nilgiri mountains is about 400 inches, and on the mountains east of Calcutta 600 inches. In the Carnatic, the region south and west of Madras, there are only about 40 inches altogether. This falls principally in heavy bursts, often 10 or 12 inches in a night, thus giving half a year's supply in two showers. In the Madras Presidency alone there are 40,000 tanks for the storage of water, many of which are from 10 to 25 miles in circumference, and from 10 to 60 feet deep. One of these reservoirs will contain 100,000,000 cubic yards of water. Besides these tanks there are many old irrigating canals leading off from the rivers. These are supplied by weirs built of immense stones across the streams, the ingenious construction of which by the natives has shown the British authorities the best way of doing similar work on a much larger scale across some of the largest rivers. For many years the Indian Government has been improving the ancient irrigating works and perfecting new systems. In the Tanjore district alone the returns to the Government from this policy have been enormous, the revenue having increased £200,000 a year, on an expenditure of £400,000. The system has been extended to other parts of India, and all the belts of land, comprising many millions of acres, that have been reached by this grand system of irrigation now present a marked contrast to the tracts of arid waste that met the eye of the traveler a few years ago.

**Calcutta International Exhibition.**—One of the reports on the American exhibit contained the following passages. It bore the date of Jan. 15, 1884:

The space occupied by American manufacturers is not extensive, nor is it the display imposing. However, there is reason to hope that those who are represented will either directly or indirectly be compensated for any expenditure incurred. There are manufacturers in the United States who do not show their goods at world's fairs for the mere purpose of extending their foreign business, but to demonstrate to unprejudiced judges that the exhibits will not suffer by comparison with those of any country. The value of the direct imports from the United States to this country during the fiscal year 1882-83 amounted to £68,806,000, and of the exports direct from India to the United
INDIA.

Commerce.—The ensuing tabular statement shows the foreign trade movements of India during two fiscal years, 1882 and 1883, in thousands of pounds sterling:

<table>
<thead>
<tr>
<th>ARTICLES</th>
<th>IMPORTS</th>
<th>EXPORTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1881-82</td>
<td>1882-83</td>
</tr>
<tr>
<td>Rice and bread stuffs</td>
<td>11,679</td>
<td>11,885</td>
</tr>
<tr>
<td>Seeds and fruit</td>
<td>6,895</td>
<td>6,844</td>
</tr>
<tr>
<td>Groceries</td>
<td>1,935</td>
<td>1,991</td>
</tr>
<tr>
<td>Liquors, wines, and beer</td>
<td>1,864</td>
<td>1,808</td>
</tr>
<tr>
<td>Coal</td>
<td>1,064</td>
<td>1,005</td>
</tr>
<tr>
<td>Metals and their manufactures</td>
<td>4,028</td>
<td>4,028</td>
</tr>
<tr>
<td>Wood and stone</td>
<td>7,024</td>
<td>6,974</td>
</tr>
<tr>
<td>Textiles</td>
<td>7,024</td>
<td>6,974</td>
</tr>
<tr>
<td>Hides and skins</td>
<td>4,028</td>
<td>4,028</td>
</tr>
<tr>
<td>Drugs, dyes, resins, substances, and oils</td>
<td>8,500</td>
<td>8,500</td>
</tr>
<tr>
<td>Opium</td>
<td>20,058</td>
<td>20,058</td>
</tr>
<tr>
<td>Dry-goods</td>
<td>20,058</td>
<td>20,058</td>
</tr>
<tr>
<td>Other manufactures</td>
<td>6,974</td>
<td>6,974</td>
</tr>
<tr>
<td>Sundry goods</td>
<td>8,065</td>
<td>8,065</td>
</tr>
<tr>
<td>Total merchandise</td>
<td>128,532</td>
<td>128,532</td>
</tr>
<tr>
<td>precious metals</td>
<td>2,058</td>
<td>2,058</td>
</tr>
<tr>
<td>Grand total</td>
<td>130,590</td>
<td>130,590</td>
</tr>
</tbody>
</table>

Cotton.—The export of cotton from Bombay has been as here given:

<table>
<thead>
<tr>
<th>DESTINATION</th>
<th>1884</th>
<th>1885</th>
</tr>
</thead>
<tbody>
<tr>
<td>To England</td>
<td>1,300,000</td>
<td>1,300,000</td>
</tr>
<tr>
<td>To the Continent</td>
<td>685,000</td>
<td>685,000</td>
</tr>
<tr>
<td>To the United States</td>
<td>9,980</td>
<td>9,980</td>
</tr>
<tr>
<td>Total</td>
<td>1,995,000</td>
<td>1,995,000</td>
</tr>
</tbody>
</table>

India.—The export of indigo from Calcutta, crop of 1884, to December 31, was:

<table>
<thead>
<tr>
<th>DESTINATION</th>
<th>1884</th>
<th>1885</th>
</tr>
</thead>
<tbody>
<tr>
<td>To England</td>
<td>7,000</td>
<td>7,000</td>
</tr>
<tr>
<td>To France</td>
<td>2,700</td>
<td>2,700</td>
</tr>
<tr>
<td>To the United States</td>
<td>7,000</td>
<td>7,000</td>
</tr>
</tbody>
</table>

Stock, December 31, 81,000 maunds, of which 56,000 were Bengal and Hinterland, and 25,000 from northern districts.

Rice.—The export of rice from Rangoon, Akyab, Bassin, and Moulmain has been as follows:

<table>
<thead>
<tr>
<th>PARTY</th>
<th>1884</th>
<th>1885</th>
</tr>
</thead>
<tbody>
<tr>
<td>To Europe</td>
<td>885,000</td>
<td>139,200</td>
</tr>
<tr>
<td>To other countries</td>
<td>712,000</td>
<td>120,500</td>
</tr>
<tr>
<td>Total</td>
<td>1,597,000</td>
<td>259,700</td>
</tr>
</tbody>
</table>

Silk.—The silk export from Calcutta has been:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1883</th>
<th>1884</th>
<th>1885</th>
</tr>
</thead>
<tbody>
<tr>
<td>From Rangoon</td>
<td>8,191</td>
<td>568,000</td>
<td>1,000</td>
</tr>
<tr>
<td>From Akyab</td>
<td>5,000</td>
<td>430,000</td>
<td>1,000</td>
</tr>
<tr>
<td>From Bassin</td>
<td>8,754</td>
<td>568,000</td>
<td>1,000</td>
</tr>
</tbody>
</table>

American Trade.—The American trade with British India sums up thus:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>1883</th>
<th>1884</th>
<th>1885</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total foreign</td>
<td>4,948,789</td>
<td>4,948,789</td>
<td>4,948,789</td>
</tr>
</tbody>
</table>

The Governor, in his message to the Legislature, says it is evident that unless economic
INDIANA.

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The successful taxation will have to be some-
raised, or a sufficient sum borrowed be exigency. The failure of the gen-
operation bill occasioned great incon-
to two or three of the public insti-
tuted the fact that no law could be
and such provision could for them.
sual taxes for the year ending May 31,
$14,372,553.71. The total value of
property of all kinds was $340,481,925.
out of the treasury Nov. 1,
$503,927.19. The receipts from all
ings the year ended Oct. 31, 1884,
88,465.08. The balance in the treas-
sey, 1884, was $431,206.59.
are.—The total value of all farm prod-
duced in 1884, as estimated according to the
market prices, is $155,085,668.
are, 14,958,547 rods of drain-tile in
in 1884, against 11,487,814 in 1883;
3 rods of open ditches were reported
the apple-crop for 1884 was 2,
shelves of summer and fall, and 1,788,
als of winter apples, giving a total of

Statutes.—The mine and quarry pro-
duced during the year was: 768,878
of sandstone, 6,013,110 cubic feet of
, 2,244,508 bushels of lime burned,
bushels of cement made, 1,732,089
al mined, and 502,115 cubic yards of
d; value of stone and coal, $2,500-

turbing.—The following is a summary
manufacturing statistics for the year:

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishments</td>
<td>$30,991,649</td>
</tr>
<tr>
<td>Material</td>
<td>$7,307,609</td>
</tr>
<tr>
<td>Baked products</td>
<td>$9,381,679</td>
</tr>
<tr>
<td>Number of hands employed</td>
<td>78,994</td>
</tr>
<tr>
<td>Paid</td>
<td>$3,170,040</td>
</tr>
</tbody>
</table>

There were added during the year
59 miles of main track, 796 miles second
ck, and 65-10 miles of side-track, so
entire length of railroads now in Indi-
to 5,429-49 miles of main track,
e of second main track, and 990-44
ide-track. The total valuation of all
sold property in Indiana for 1884
$55,077,877, against $53,450,933.
One hundred and eighty-seven per-
killed by railroad accidents in Indi-
g the year, and 617 were injured.

The permanent fund for the
of the common schools of the State
now to $9,389,327.88. The increase
during the year from fines, forfei-
other sources was $28,150.87. Tha-
the fund during the past ten years
same sources have averaged $63,988.-

The revenue derived from taxation
port of schools and from interest on
funds amounted during the year to
The salary for the mainte-
nance of schools—not including the cost of
new-school-houses—was about $4,000,000. The
umber of public-school houses in the State is
9,664. The number of children of school age,
according to the last enumeration, is 732,881.
The number who actually attended school dur-
ing the year was 501,143.

A uniform course of study and of final ex-
amination of pupils is now pursued in all the
public schools of the State. This uniformity
has been adopted under a recommendation
made last year by a State meeting of county
superintendents, and not in pursuance of any
requirement of law.

A continual improvement is being made in
school architecture, including mode of heating
and ventilation. The embellishment of school-
grounds by the cultivation of trees and flowers,
through the efforts of teachers and pupils,
without expense to the State, is also becoming
general.

The aggregate value of the common-school
property of the State is $18,449,479, against
$18,019,931 in 1883, being an increase of $429,
548. During the year, 305 new school-houses
were built, at a cost of $544,680.
The number of teachers is 13,615.

Insane Asylums.—The cost per capita for main-
tenance of the insane during the last fiscal year
was $177.02, against $194 during the years
1888 and 1888, and against $185 during the
years 1881 and 1882. Most of this reduction
is ascribed to the reduced price of provisions
during 1884.

The Governor calls the attention of the Le-
gislature to the following points:

The experiment of the disease of mechanical re-
straints in the treatment of the insane, begun a little
more than a year since, has proved satisfactory, and
it is deemed to have been demonstrated that a hospi-
tal for the insane can be managed without confining
the inmates in cells or tying them to beds, or any of
the old-fashioned restraints, but by the use of other
milder mechanical restraints which, since the trial
have been used by American hos-

The extensive new building constituting a part of
the hospital, designed especially for women, was
completed on June 3, 1884.

By the act passed at the last session of the General
Assembly, providing for the building of three addi-
tional hospitals for the insane, the Governor was re-
quired to appoint four commissioners. The commis-
sioners selected the sites for the institutions, and
endorsed the bills. For building the hospital near
Evansville, the lowest bid was $286,565.20; for build-
ing the hospital near Richmond, the lowest bid was
$269,760.35; for building the hospital near Logans-
port, the lowest bid was $366,682.29. These bids
were accepted, but not until provision had been made
for considerable reduction of expense to the State, by
simplifying the style of architecture, and contracts
were entered into accordingly. To reconcile a differ-
ence of views among the commissioners, the cottage
plan of buildings was adopted at Richmond; a system
of detached buildings connected by covered corridors
was adopted for the hospital near Logansport; and the
congregate plan of building was adopted for the hospi-
tal near Evansville. The foundations of the several
buildings have been completed.

State Prisons.—The average number of priso-
ners at the State Prison North during the
fiscal year was 547. At the State Prison South the average number was 570. The receipts of the Northern Prison from the labor of prisoners exceeded by $7,908.71 the outlay for current expenses. The receipts from the labor of prisoners at the Southern Prison did not equal the outlay for these expenses. The deficiency in the receipts of the latter prison is ascribed to the inferior quality of the buildings used for manufacturing purposes, the want of land for raising garden products, and other disadvantages. In the State Prison South the use of the lash for the correction of prisoners has ceased. The reports of both prisons urge that a better provision shall be made for insane convicts.

Reform School for Boys.—The average number of boys in the Reform School during the year was 295. The superintendent says in his report that “the health of the boys has never been better, the work of reformation has never been more thoroughly done, and the industrial features of the school have never been more satisfactory.”

Reformatory Institution for Women and Girls.—This institution, exclusively under the management of women, continues to be conducted in a most satisfactory manner. The average number of inmates in both departments during the year was 196. The number of thorough reformatory corrections that have been effected by this institution is encouraging.

Social Statistics.—The total number of church organizations, of all denominations, in the State is 4,130, with 1,788 church edifices, and a total membership of 246,888. Number admitted to full membership during the year, 37,413. Total value of church buildings, lots, and other church property estimated at $11,960,961; salary paid ministers during the year, $1,130,796; other church expenses, $92,091; missionary and other charitable contributions, $241,033; number of Sunday-school teachers, 24,401; and number of pupils attending Sunday-school, 24,846. Number of births registered by the State for 1884, 10,597; number of deaths, 24,115; number of sewing-machines, 145,593.

The Circuit Clerks of 68 counties reported 1,237 divorces, of which number 782 were granted to the wife and 414 to the husband. Naturalizations were reported from 64 counties, showing a total of 1,310 persons naturalized during the year.

There were 5,473 inmates of county asylums for 1884, 1,847 males and 3,656 females; 2,735 were over sixteen years of age, and 692 under sixteen years. Of the total number, 94 were blind, 39 deaf and dumb, 649 insane, 899 idiots, 243 crippled, 390 aged, 449 were sent to asylums for medical treatment, and 344 died during the year.

Vital Statistics.—The total number of births for the year ending Sept. 30, 1884, was 40,153, viz., 20,385 white and 17,668 colored; 458 of the white were multiplicity births, and 573 illegitimate. The total number of marriages was 18,763, the highest number occurring in September and October, and the lowest in June and July. The total number of deaths during the year was 15,868, of which number 7,575 were males, and 7,493 females.

**Political.**—The Democratic State Convention met in Indianapolis on June 26, selected delegates to the National Convention of the party, and nominated Presidential Electors and the following State ticket:

For Governor, Isaac P. Gray; Lieutenant-Governor, Malbon D. Mansfield; Secretary of State, William E. Myers; Auditor, James H. Rice; Treasurer, John J. Cooper; Attorney-General, Francis T. Hord; Superintendent of Public Instruction, John W. Holmes; Judge of Supreme Court, Fifth District, J. A. S. Mitchell; Reporter Supreme Court, John W. Kern.

The Republican candidates were:

For Governor, William H. Canfield; Lieutenant-Governor, Eugene H. Bundy; Secretary of State, Robert Mitchell; Treasurer, Roger B. Shiel; Auditor, Bruce Carr; Attorney-General, William C. Wilson; Superintendent of Public Instruction, B. G. Hobbs; Judge of Supreme Court, E. O. Hammond; Supreme Court Reporter, William M. Heggatt.

For Governor, the Greenbackers nominated Hiram Z. Leonard, and the Prohibitionists Robert S. Dwiggins. The Democratic ticket was elected on November 4. The following was the vote for Governor: Democratic, 245,140; Republican, 287,745; Greenback, 8,336; Prohibition, 8,868. Republicans were elected to Congress in the Sixth, Eighth, Tenth, and Eleventh districts, Democrats in the other six.

The Legislature of 1885 consists of 33 Democrats and 17 Republicans in the Senate, and 65 Democrats and 35 Republicans in the House. The vote for Presidential Electors was as follows: Democratic, 244,990; Republican, 288,308; Greenback, 8,306; Prohibition, 8,068.

**Iowa.**

**State of Iowa.**—The following were the State officers during the year: Governor, Buren R. Sherman, Republican; Lieutenant-Governor, O. H. Manning; Secretary of State, John A. T. Hull; Treasurer, E. H. Conger; Auditor, John L. Green; Attorney-General, Smith McPherson; Superintendent of Public Instruction, John W. Akers; Railroad Commissioner, Peter A. Day, L. S. Coffin, and A. R. Anderson, succeeded by J. W. McAllister; Adjutant-General, Supreme Court: Chief-Justice, James H. Rothrock; Associate Justices, Joseph B. Reed, Joseph M. Beck, Austin Adams, and William H. Seever.

**Legislative Session.**—The Legislature met on January 14, and adjourned on April 5. On January 22, William B. Allison, Republican, was re-elected United States Senator.

The following are the principal acts and joint resolutions passed by this General Assembly:

*To repeal section 1865 of the Code and to make a substitute therefor, in relation to intoxicating liquors. This is known as the Kennedy bill.*

*To amend section 1, chapter 104, laws of the Seventeenth General Assembly, relating to mutual insurance companies.*

*Increasing the number of Circuit Judges in the Second Judicial District.*
and preserve the fish in the permanent
ponds within the State.
ste mining and mining, and to repeal chapter
acts of the Eighteenth General Assembly.
pt from judicial sale the pension money
person by the United States Government,
of the proceeds and accumulation thereof.
se for the erection of and maintenance of
aces and connections at the points of inter-
ng of two or more railroads.
s. 1621 of the Code and to enact a
ating to a course of study for the State
 College.
de for the assessment and taxation of lands
railroad companies or corporations which he
earned but not patented.
d. section 1884 of the Code in relation to
the protection of game.
de for the levy of one half mill additional
for selling, leasing, and patenting the
aging to the Iowa State Agricultural Col-
bit giving or selling fire-arms to minors.
d. chapter 147, laws of the Nineteenth Gen-
ly, relating to the bonding of county in-
bit the use of barb-wire in inclosing public
all citizens in their civil and legal rights.
de for the distribution of funds by the
ceivents.
d. section 2578 of the Code in relation to
ure of liens on real estate.
nt the spread of small-pox.
g actions against railroad companies to
the name of the State on recommendations
railway Commissioners.
g additional penalties for the violation of
ning of grounds for union
izing the condemnation of grounds for union
authorizing the organization of companies
ng the killing of quail for two years.
g for the refunding of bonded indebtedness
not more than 3 per cent.
g trains to stop before reaching the cross-
tracks.
ator of Labor Statistics, and provide
ounty of a commissioner of the
re-annum.
g for the semi-annual collection of taxes.
s. sections 2068 and 2067 of the Code re-
ferences on non-negotiable paper.
peak or admission to the bar.
g townships that have voted tax in aid of
ition of railroads to vote an additional five
he State Inspector.
 a system of drainage and for the reclaim-
and overflow lands.
ning an additional Insane Hospital in south-
and appropriating $150,000 therefor,
ating $50,000 for land for the State Agri-
ity for a permanent location.
ating $200,000 for completing the new
 improving the surrounding streets.
to amendments to the Constitution pro-
ces Nineteenth General Assembly.
wing are the amendments: 1. The general
State, district, county, and township of,
held on the Tuesday next after the first
November.
regular session of the General Assembly
ay be divided into the necessary judicial
District Court purposes, or the said dis-
be reorganized, and the number of the
h the judges of said courts increased or
diminished; but no reorganization of the districts or
diminution of the judges shall have the effect of re-
moving a judge from office.
3. The grand jury may consist of any number of
members, not less than five nor more than fifteen, or
the General Assembly may provide for holding per-
sions to answer for any criminal offense without
the intervention of a grand jury.
4. That section 13 of Article V of the Constitution
be stricken therefrom, and the following adopted as
such section:
Sec. 13. The qualified electors of each county shall
shall at the general election in the year 1886 and every
two years thereafter elect a county attorney, who
shall be a resident of the county for which he is
voted, and who shall hold his office for two years,
and until his successor shall have been elected and
qualified.
The woman-suffrage amendment passed the
by a vote of 26 to 24, but was lost in the
House, on a motion to postpone indefinitely,
by a vote of 50 to 44.
Prohibition.—The prohibitory law passed at
this session took effect on the 4th of July.
The following is its language:
Sec. 1. That section 1555, chapter 6, title 11 of the
Code be and the same is hereby repealed, and the fol-
achelso enacted in lieu thereof:
Sec. 1555. Wherever the words intoxicating liquors
occur in this chapter the same shall be construed to
mean alcohol, ale, wine, beer, spirituous, vinous, and
malt liquors, and all intoxicating liquors whatever,
and no person shall manufacture for sale, or sell, or
keep for sale as a beverage any intoxicating liquors
whatever, including ale, wine, and beer; and the same
provisions and penalties of law in force relating to
intoxicating liquors shall be in like manner be held and
construed to apply to violations of this act, and the
manufacture, sale, or keeping for sale, or keeping
with intent to sell, or keeping or establishing a place
for the sale of ale, wine, and beer, and all other intox-
icating liquors whatever.
It passed the Senate by a vote of 35 to 18,
and the House by a vote of 52 to 41, one Democrat voting for it.
A State Temperance Convention met in Des
Moines on January 28, and passed, among oth-
er results, following resolutions:
That we fully trust and confidently expect that
our present Legislature will promptly meet the wishes
of the people in not only repealing the statute per-
mitting the sale of ale, wine, and beer as beverages,
but enact and provide suitable penalties to enforce the
law so that the citizens in any part of the State can
effectually close up and put a stop to all traffic in
intoxicating beverages of whatever name or nature,
whether sold or given away in a saloon, hotel, club-
room, drug-store, private house, or any other place or
in any manner.
That however wise, judicious, and stringent pro-
hibitory laws our General Assembly may pass (and
pass such it unavoidably will), it still will remain as
much the imperative duty of the friends of temper-
ence to keep up their several organizations for the
purpose of seeing that such laws shall be executed
and enforced, as it was for them to create the public
sentiment that brought these laws into being, and
upon the practical carrying out of this purpose de-
ends largely the success of the prohibition movement
in our State.
On February 8, the Women’s Christian Tem-
perance Union presented a memorial to the
Legislature in favor of a prohibitory law.

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ITALY.

Italy, a kingdom of southern Europe. (For details relating to area, population, etc., see "Annual Cyclopaedia" for 1888.)

Government—The King, Humbert I, born March 14, 1844, the eldest son of Victor Emanuel, succeeded to the throne Jan. 9, 1878. During the cholera season of 1884 he distinguished himself by visits to the infected cities, and personal inspection of the hospitals and means of relief. The ministry is: President of the Council, Signor Depretis; Interior, Signor Morsa; Finance, Signor Magliani; Justice and Educational Affairs, Signor Giovanni Savelli; Foreign Affairs, Signor Mancini; War, Signor Ricotti, since Oct. 24, 1884; Navy, Admiral Rauch; Public Works, Signor Gelasi; Agriculture, Industry, and Commerce, Sig. Citro; Public Instruction, Signor Baccelli.

The United States Minister in Rome is William W. Astor, and the Italian Minister at Washington, Baron de Fava. The Italian Consul-General at New York, G. B. Raffo.

Flaviano.—At the close of the fiscal year, ended June 30, 1884, Italy owed 11,000,000 lire, 2,000,000,000 of which represented the floating debt, not paying interest; there were therefore 9,000,000,000 consols, on which the annual interest amounts to 442,313,977 lire; 485,904,987 thereof at 5 per cent. interest, and 6,408,080 at 3 per cent.; and there was, besides, the 5 per cent. interest on the debt due to the Holy See, which interest amounts to 3,228,000 lire. The budget for the fiscal year 1885, which estimated an income of 1,810,000,000 lire, is shown to have produced in reality an income of 1,854,000,000, or 24,000,000 more, while the expenditure was 1,828,000,000, instead of the estimated 1-
LE TREMBLAY III
VICTOR HUGO

A. APPLETEN & CO.
ITALY.

308,000,000. The budget for 1884 was as follows:

**Revenue.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Lire.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue of the Government</td>
<td>34,904,705</td>
</tr>
<tr>
<td>Direct taxes</td>
<td>860,474,580</td>
</tr>
<tr>
<td>Excise, stamps, and tobacco</td>
<td>109,550,200</td>
</tr>
<tr>
<td>Customs, liquors, tobacco, and salt</td>
<td>244,204,245</td>
</tr>
<tr>
<td>Lottery</td>
<td>72,359,000</td>
</tr>
<tr>
<td>Postage, telegraphs, and telephones</td>
<td>129,500,135</td>
</tr>
<tr>
<td>Sequestrations and fines</td>
<td>23,011,586</td>
</tr>
<tr>
<td>Real and turnover taxes</td>
<td>70,702,811</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,206,075,095</td>
</tr>
</tbody>
</table>

**Expenditure.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Lire.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treasury</td>
<td>784,653,978</td>
</tr>
<tr>
<td>Finance</td>
<td>314,131,239</td>
</tr>
<tr>
<td>Justice</td>
<td>180,403,887</td>
</tr>
<tr>
<td>Foreign Affairs</td>
<td>7,138,781</td>
</tr>
<tr>
<td>Public Instruction</td>
<td>84,417,541</td>
</tr>
<tr>
<td>Interior</td>
<td>64,482,509</td>
</tr>
<tr>
<td>Public Works</td>
<td>154,320,096</td>
</tr>
<tr>
<td>War</td>
<td>266,967,697</td>
</tr>
<tr>
<td>Navy</td>
<td>47,378,939</td>
</tr>
<tr>
<td>Agriculture</td>
<td>11,956,104</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,050,358,099</td>
</tr>
</tbody>
</table>

There were outstanding, Sept. 30, 1884, 255,844,600 lire in treasury notes, the circulation being greater by 10,936,500 than on June 30 of the same year.

The Government having resumed the tobacco monopoly from the Tobacco Régie Company, and having to pay it 68,000,000 lire for tobacco, etc., a loan was made at 3½ per cent., payment to be made on April 1, 1885, instead of on Dec. 31, 1885, a saving of 1½ per cent., and the Tobacco Régie Company was being credited interest at the rate of 5 per cent. per annum. A 100,000,000 lire loan having been voted by the Chamber in December, 1884, and the bill also having passed the Senate on Jan. 11, 1885, for the sanitary improvement of Naples, and certain public works to be there undertaken for the same purpose, it was proposed to place on the market 5 per cent. bonds, to run sixty years, dating from January, 1886, and to be gradually paid off by a sinking fund.

During the first ten months of 1884, the movement of the precious metals in lire was as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold bullion</td>
<td>8,519,200</td>
<td>184,900</td>
</tr>
<tr>
<td>Gold coin</td>
<td>14,985,700</td>
<td>7,071,200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>19,504,900</td>
<td>8,991,100</td>
</tr>
<tr>
<td>Silver bullion</td>
<td>938,789</td>
<td>6,028,595</td>
</tr>
<tr>
<td>Silver coin</td>
<td>8,997,000</td>
<td>7,774,097</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>9,935,789</td>
<td>13,770,092</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td>29,440,689</td>
<td>22,761,200</td>
</tr>
</tbody>
</table>

**Agricultural Credit Reform.—** A bill was introduced in the Italian Parliament, toward the close of 1884, abrogating the law of June 31, 1869, and remodeling the basis on which money may be loaned by agricultural credit banks to farmers. Under the old law, the proprietor of the soil enjoyed superior privileges as a mortgage holder, if his tenant stood in need of money. The new law provides first mortgage; to the proprietor on the land and crops, but not on the cattle on which the credit-bank is to have secured a first mortgage. The loans will have to be made for at least three years, but not to exceed thirty years, nor the interest 5 per cent.

**Army.—** The standing army numbers 750,765 men and officers; the militia mobile, 341,250 men and officers; the reserve, 5,281, and the territorial militia, 1,021,934—constituting a joint force, in time of peace, of 2,119,250 men. In time of war Italy can place in the field 690,000 men of the line; 300,000 militia mobile, and 1,000,000 territorial militia—together, 1,990,000 soldiers.

**Navy.—** There were launched in August, at Castellamare, the ironclad Ruggiero di Lauria, and in December the ironclad Francesco Morosini; to be followed in March, 1885, by the Andrea Doria—three line-of-battle steamers of the first class, built after the Acton model; and there were building in the spring of 1885 the Italia and the Lepanto. When these formidable men-of-war are all in being, Italy will have 15 vessels of the first class, 10 of them ironclad; 14 second class; 13 third class; 11 transports, and 43 torpedoes. The Ruggiero di Lauria cost, with armament, 19,000,000 lire or francs; the Duilio as much; and the Lepanto, the Italia, and the Dandolo, when armed, will cost between 22,000,000 and 24,000,000 each. The Duilio is to carry four 100-ton guns. Out of the 10,802 sailors and marines, and 567 officers, by whom the Italian navy is manned, there will be doing active service on board ship in 1885, 396 officers and 9,093 men, a proportion unknown in any other navy. A novel arrangement is the having in readiness so-called "reserve ships," to sail at forty-eight hours' notice. The navy was commanded and officered on Jan. 1, 1885, as follows: one admiral, Prince Carignano; 4 vice-admirals, 10 rear-admirals, 104 captains, and 362 lieutenants; 10,300 sailors, and 1,597 gunners, men for torpedo service, and engineers.

**The Red Sea Expedition.—** For several years there has been rivalry between the Italian, French, and Egyptians, to secure the trade between their possessions on the Red Sea coast of western Africa, and Abyssinia and the Gall countries. The Italians have acquired a settlement at Assab, and the French farther south at Abock. Both settlements are poor, the coast being a complete desert, while the flourishing countries inland, especially Shoa, are difficult and expensive to reach, the freight on camels' backs being very high, and transportation, a distance of 400 miles, very slow, so that it sometimes takes months to reach a market from Assab. Valuable as the latter is as a settlement, it has, nevertheless, been retained, because during the colonization mania that has seized upon the French and Germans, Italy, without any other colony, considers it in her political rather than her commercial interest to obtain a firm foothold somewhere near the
Italy.

The number of persons that left Italy in 1882 was 28,665, 29,930 in 1883. Most of these are poorers who cross the frontier for two or three harvest-time, in France, Austria, Switzerland, and then return. In the war there left for Northern Africa 6,128, 7,773 the previous year; for the United States 2,871, against 18,689; for 9,297, against 54,639; and for other countries, 15,976, against 16,500; r. 63,888, against 59,605; for South Asia, and Oceania, 926, against 164.

The Government issued in September allowing the temporary admission for silk manufacture for export of high nattist. At Como, 2,000 launds mansuch goods; at Milan, 1,600; and it was sd that this measure would save for an seventeen lire annual. With privilege it would have been difficult even with Lyons, where temporary ad has been introduced for a similar pur.

Silk-crop of 1884 was not only smaller than immediate successor, as the ensuing at shows:

**COCONOS PRODUCED.**

<table>
<thead>
<tr>
<th>Yellow</th>
<th>Domestic Gross</th>
<th>Grown from foreign seeds Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kilns</td>
<td>Kilns</td>
<td>Kilns</td>
</tr>
<tr>
<td>11,700</td>
<td>14,743</td>
<td>14,699</td>
</tr>
<tr>
<td>11,346,720</td>
<td>19,350,692</td>
<td>19,350,692</td>
</tr>
<tr>
<td>11,996,638</td>
<td>14,900,706</td>
<td>14,900,706</td>
</tr>
<tr>
<td>13,682,256</td>
<td>14,910,711</td>
<td>14,910,711</td>
</tr>
<tr>
<td>13,560,925</td>
<td>14,952,196</td>
<td>14,952,196</td>
</tr>
</tbody>
</table>

**SILK-ROSES CULTIVATED.**

<table>
<thead>
<tr>
<th>Yellow</th>
<th>Foreign</th>
<th>Domestic Gross</th>
<th>Grown from foreign seeds Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kilns</td>
<td>Kilns</td>
<td>Kilns</td>
<td>Kilns</td>
</tr>
<tr>
<td>870</td>
<td>897</td>
<td>871</td>
<td>871</td>
</tr>
<tr>
<td>448</td>
<td>468</td>
<td>448</td>
<td>448</td>
</tr>
<tr>
<td>480</td>
<td>587</td>
<td>578</td>
<td>578</td>
</tr>
<tr>
<td>501</td>
<td>544</td>
<td>544</td>
<td>544</td>
</tr>
<tr>
<td>483</td>
<td>498</td>
<td>498</td>
<td>498</td>
</tr>
<tr>
<td>480</td>
<td>498</td>
<td>498</td>
<td>498</td>
</tr>
</tbody>
</table>

**COCONOS, WHERE PRODUCED.**

<table>
<thead>
<tr>
<th>Yellow</th>
<th>Domestic Gross</th>
<th>Grown from foreign seeds Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kilns</td>
<td>Kilns</td>
<td>Kilns</td>
</tr>
<tr>
<td>2,100,709</td>
<td>2,100,709</td>
<td>2,100,709</td>
</tr>
<tr>
<td>2,100,709</td>
<td>2,100,709</td>
<td>2,100,709</td>
</tr>
<tr>
<td>1,910,081</td>
<td>1,910,081</td>
<td>1,910,081</td>
</tr>
<tr>
<td>1,910,081</td>
<td>1,910,081</td>
<td>1,910,081</td>
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<td>1,910,081</td>
<td>1,910,081</td>
<td>1,910,081</td>
</tr>
<tr>
<td>1,910,081</td>
<td>1,910,081</td>
<td>1,910,081</td>
</tr>
</tbody>
</table>

**FISCAL YEAR.**

| Imports from Italy to the United States. |
|-------|-----------------|
| 1882 | 1883 |
| $11,995,058 | $10,114,565 |

**MERCHANT MARINE.**—The Italian commercial marine, on Jan. 1, 1882 and 1883, was composed as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
<th>Tons.</th>
<th>Number.</th>
<th>Tons.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1882</td>
<td>7,036</td>
<td>882,865</td>
<td>7,270</td>
<td>865,881</td>
</tr>
<tr>
<td>1883</td>
<td>7,036</td>
<td>882,865</td>
<td>7,270</td>
<td>865,881</td>
</tr>
</tbody>
</table>

**Events of 1884.**—Cholera made its first serious
appearance in the provinces of Massaccarrara, Parma, Porto Maurizio, and Turin on August 18, soon spread with great rapidity to other provinces, and reached its climax of virulence at Naples in September, disappearing again from Italy on Nov. 3. (See CHOLERA.)

The Pope displayed, during the year, extraordinary zeal in mitigating, by means of donations, the visitations of cholera and earthquakes. The Pope has taken great interest in missionary matters in China, near the seat of war and elsewhere.

The Turin Exhibition was international so far as applied electricity was concerned. At the same time, opening on October 20, a so-called "Phylloxera Congress" was held. Both were well attended, in spite of the cholera. On November 4, the distribution of premiums took place, the King and royal family being present, and 6,000 prizes being awarded to 15,000 exhibitors. The exhibition terminated on November 16. Previously a great banquet, to which 200 guests had been invited, was given by the Minister of Agriculture, Signor Grimaldi, to the members of the Phylloxera Congress.

There had been a standing complaint on the part of Italy that a well-organized smuggling of wines was going on for a long time past, from Italian Switzerland into Italy, across the frontier, and during the cholera quarantine, Italy found that the extra expense of greater vigilance exercised, had the effect of greatly increasing the revenue in that quarter, the difference more than covering the expense of guarding the frontier at those points. Remonstrances were accordingly made, but it took considerable time ere the Swiss Government could be made to agree to a stringent customs convention like the one existing between Austria and Italy.

On October 7, a violent cyclone swept Catania, in Sicily, killing thirty people and wounding five hundred, besides destroying property to the amount of 5,000,000 lire, and between Jan. 21 and 29, 1888, destructive avalanches surprised the population of Cuneo, Ivrea, Susa, Broassaco, Sparone, Monaca, Exilles, and Fresinare, in the Piedmontese Alps, burying many people, eighty-seven of whom perished. The usual floods also occurred in the spring of 1888. Shocks of earthquake were felt at Rome, Frascati, and Albano on August 7, and at Cosenza and Rossano on August 19.

The disturbed commercial condition created by the cholera epidemic interfering with trade, was the cause of heavy failures in Milan and Genoa, where a severe crisis set in with the failure at Milan of the Fabbrica Lombarda, on August 29; the suspension of Pagani & Vi- lani in the same city, and of the joint-owning firm of Andrea Danovaro at Genoa early in September, followed in January by the failure of Lorenzo Cotta-Ramsinus, of Montara, Parela.

JAPAN. The empire of Dai Nippon (great sunrise), called by the Romance nations Japan, and by the Tontonic Japan, stretches through 27 degrees of north latitude, and 33° of longitude. It consists of a chain of volcanic islands nearly 2,000 miles long, its area equaling that of the British Islands, Holland, and Belgium. The best known part, or Japan proper, consisting of Hondo (main island), Kiushiu, Shikoku, and Yezo, comprises three fourths of the total area. The three outlying groups or fringes are Riu Kiu (hanging tassels), Chijima (thousand islands), and Ogasawara, or Bonin Shima (no man's land). The area of the empire is 145,571.77 square miles, of which Honshu has 58.9, Kiushiu 9.4, Shikoku 4.7, Yezo 20.6, and the remaining islands 6.4 percentage of the whole. Old Japan, the Oyashima of ancient history, consists of Honshu, Kiushiu, and Shikoku, with their neighboring islands, all of which were conquered and colonized by the Japanese in very early times. New Japan consists of acquisitions of the last few centuries, or of very recent times, which have so far occupied a different political position, and are to be regarded as colonies of the mother-country. The area of the former is 109,738.46, and of the latter 85,830.29 square miles. A careful study of the empire on scientific principles is now being carried on. The population, by census of 1874, was 33,662,523, of which Old Japan had 33,512,162 and New Japan 311,361; Hondo had 25,473,834, Ki- shiu 4,965,638, Shikoku 2,284,638, Yezo 146,069, Riu Kiu 167,078, Bonin 69, and the smaller islands of Old Japan 362,177. The foreign residents numbered, in 1888, 2,292 Americans and Europeans, and 4,134 Chinese. The present year, in Japanese reckoning, is the 17th of Meiji (Enlightened Peace), or the 2,544th from the foundation of the empire of Japan by Jimmu Tenno. The government since 1868 has been that of the ancient system in vogue from the seventh to the twelfth century, before the establishment of the military conscription by the Sho-gun (or later Tycoon), modified by the adoption of features from European governments. The Mikado, the 133rd ruler of the line, officially styled Tenno (divine ruler), is aided by a Supreme Council of State, a Council of Ministers, each of whom is head of a department, and a Senate. The cities and prefectures are ruled by the Council of State. Since the Restoration of 1868, the drift of affairs has been toward a constitutional monarchy. The establishment of a Senate in 1866, and of local or prefectural assemblies in 1873, was followed by the imperial decree of Oct. 13, 1881, providing for the establishment of a National Parliament, with limitation of the impe-
JAPAN.

STATE OF THE RESERVE FUND.

<table>
<thead>
<tr>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 80, 1888</td>
<td>28,415,636 445</td>
</tr>
<tr>
<td>April 30, 1884</td>
<td>47,408,156 083</td>
</tr>
</tbody>
</table>

LOAN ACCOUNT.

<table>
<thead>
<tr>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 80, 1888, advances</td>
<td>15,081,309 297</td>
</tr>
<tr>
<td>April 30, 1884</td>
<td>25,699,183 400</td>
</tr>
</tbody>
</table>

Increase over preceding year. 4,884,469 103

FUND FOR RELIEF OF AGRICULTURAL DISTRESS.

<table>
<thead>
<tr>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 80, 1888</td>
<td>2,197,982 288</td>
</tr>
<tr>
<td>April 30, 1884</td>
<td>2,280,564 148</td>
</tr>
</tbody>
</table>

Increase 82,582 850

The national debt amounts to 324,709,018-800, of which 8,476,072-000 is foreign, at 7 per cent. The domestic debt bearing interest amounts to 214,479,316-000, and that bearing no interest to 8,339,271-000; the paper money in circulation to 88,414,360-900. Total domestic debt, 816,352,941-800. Among the items are the following:

- New debt at 6 per cent. 10,728,450-000
- Kinsatsu exclusive bonds 6,070,350-000
- Registered exclusive bonds 1,230,000-000
- Hereditary pension bonds 117,002,265-000
- Interest at 3% to 10% per cent. 137,185,370-000
- Pension bonds for ex-Shinto priests 143,125,200-000
- Loans for public works, at 6% per cent. 11,881,200-000
- Nakanosoda Railway bonds, at 7% per cent. 15,040,000-000
- Loan for suppressing the W. rebellion in 1874 10,000,000-000
- Old domestic debt without interest 9,499,571-000
- Paper money in circulation 80,214,490-800

The chief problems in Japanese finance are, to redeem (1) the bonds caused on the withdrawal of the old Kinsatsu (gold notes) currency, made of card-board, and issued during the first year of the Restoration; (2) the hereditary pension bonds used to commutate or extinguish the claims, formerly payable in rice, of the feudal military-literate or samurai class; (3) the loan made on account of "the Satsuma rebellion"; (4) to carry on internal improvements and public works, including railways and telegraphs; and (5) to call in enough of the outstanding paper money to maintain the credit of the Government. Owing to stagnation of trade, the visitation of severe storms, agricultural distress, and heavy taxes, caused by the instigation in some cases by gamblers with whom the Government has begun to deal rigorously—the past year has been declared by native editors "one of the blackest in our history."

The financial condition of the end shown by the estimates for the seven years of Meiji (1864-'85), in the notifi

DOMESTIC AND FOREIGN DEBT.

| Year | Domestic Debt 816,352,941-800 | Foreign Debt 8,476,072-000 |

Increase 82,582 850

The alarm of honest men on the one
hand, and Government pressure on the other, doubtless precipitated this unexpected result. After agrarian riots in the Saitama prefecture, October 81, some members of the former Liberal party were arrested on suspicion of instigating the disorders, and a few even of high treason. A Progressive party, which is still vigorous, affords a healthful rivalry and offset to the Conservatives. All eyes are now bent forward to 1890, and political education is vigorously conducted by an enterprising press, despite rigorous censorship.

In her foreign policy, Japan has as yet been unable to obtain the revision of the treaties made with the United States and European powers at the opening of the country some years ago. Her desire is that the tariff may be changed, and the odious extra-territoriality clause be expunged. These granted, she offers to open the whole country to the unrestricted trade, travel, and residence of foreigners. Negotiations to this end have been carried on for a decade, but thus far have been fruitless.

Corea.—Corea was the active theatre of Japan's foreign policy in 1884. A legation was built in Séoul in European style of architecture and furniture, costing $80,000, with military barracks attached. The pro-Japanese or Progressive party in Cérea were greatly encouraged by Japan's friendly attitude, and vigorous propagandism of Japanese ideas began in the capital. On the 11th of November, Mr. Takezōyé, the Mikado's envoy, made a communication at an audience with the King, by which the Government of Japan remitted $400,000 of the half-million of indemnity due by Cérea to Japan, for the destruction of the legation and murder of Japanese in 1882. This remission of debt was made by the Mikado to be "devoted to the introduction of civilization into the country."

On the night of the 4th of December, the strained relations between the rival Cérea parties broke out into open hostility of plots, counter-plots, assassination, and incendiaryism. The Cérea King asked of Mr. Takezöyé the protection of his legation guard, and at midnight the palace was guarded within by Japanese troops and surrounded by the Cérea military, who had been drilled partly in Japanese and partly in Chinese style. On the 5th, the Progressives, seizing the reins of government, filled the offices with their own nominees. In the disorders six of the expelled ministers, Conservatives, were killed. On the afternoon of the 6th, about the same time that the Japanese were re-enforced by a detachment of marines and sailors from their man-of-war at the seaport, the Chinese troops, encamped near Séoul since 1882, joined the Cérea Conservatives and approached the palace. Firing began between the jealous military and the Cérea troops, under the orders of the Cérea minister, and the artisans, numbering one hundred, including women and children, in the castle, the Japanese infantry kept the mob and native soldiers by bay, cut open the city gate, and reached Chimgipo late next day, nearly starved. The Mikado's ambassador, Count Inoué, Minister of Foreign Affairs, left Séoul December 22 with full powers. In Séoul, a convention was agreed upon by which the Chinese agreed to pay $500,000 indemnity, rebuild the Japanese legation building which was burned, and allow a garrison of 1,000 Japanese troops in Séoul.

With China, the Riu Kiw question, which had been referred to a joint high commission of the two powers, is not yet settled. The matter is one of boundary and possession, Japan in this case having nine points of the law. The issue, when apparently near settlement, was hindered by China's action in referring the solemn agreement of the joint high commissioners to the revision of certain mandarins.

JAPANESE SHAPER.
roads are being widened, newly metalled, while bridge-paths are being turned to roads able to bear wheels. On the 23d of September, 1884, the new line upon this branch of public industry was opened by public celebration in the Tochigi and Fukushima prefectures. The cabinet ministers and the Mikado's courtiers were present. More than 400 miles of railroad were opened in 1884 than in any year of history. The sections and branches open for traffic varied from Tsuruga to Nakagawa, seven miles; from Seki to Nagahama, twenty miles, May 25th; from Seki to Takasaki, sixty-three miles, June 30th. The two first, now owned by Government, and the latter is the property of the Nippon Railway Company. All lie in fertile regions, and serve as railroads to and from the sea.

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On the 11th of July, 1884, the final step toward religious toleration was taken in Japan. The government has promulgated laws by which all religions, Shinto, Buddhism, Christianity, and all others, are equal before the law. In this respect, the Asiatic nations are ahead of Russia and some other nations. Official priesthood was abolished, and all religions are treated as equal. In cases where Shinto priests, or government officers, or hereditary custodians of such rites, provision was made for the payment of salaries, and the use of Shrines.

It may be said that the father of forty-three children, and was born in 1837. Displaying talent at an early age, he was adopted into the family of Hitotsubashi, and at eighteen he was proficient in all arts pertaining to the education of a Japanese gentleman of high rank. On the 6th of January, 1887, he was made Sho-shu (Tycoon). At the outbreak of the civil war in 1868, he fled to the U.S.

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Steamship Iroquois to Yedo. He was pardoned by the new government, pensioned, and lived in retirement until his death. With the fall of the old government, Buddhism declined.

Agriculture.—The unusual distress suffered by the agricultural classes during 1884, owing to high taxes, storms, and want of trade, with partial failure of the crops, calls attention to the ancient methods of farming in vogue.

Only about one tenth of the entire area of Japan is cultivated, or about 9,000,000 acres, supporting not quite four persons to the acre. At least three fourths of fertile country lies fallow, awaiting the farmer's plow, improved methods, greater variety of crops, and the rearing of live-stock, in which the country is deficient. American merchants have endeavored to introduce our common agricultural instruments and labor-saving machinery, but thus far, except on model farms conducted under the auspices of the Government, with utter lack of success. It is probable that our tools are not sufficiently adapted to the peculiar conditions of the market, and that native prejudices are not sufficiently humored. The
Americans, by tact, study, and patience, may yet overcome the conservatism of the Japanese trades, though the cheapness of labor in Japan renders competition difficult and successful innovation very slow. The State Department has recently instructed its agents to gather information on the subject, and the illustrations used in this article were furnished by the United States consul at Hiogo, T. McF. Patton.

Almost all the improved farm-land in Japan has reached its present condition after fifty generations of human toil with spade and mattock. Most of it lies in valleys, and is irrigated with enormous labor. Fertility increases in proportion to nearness of, and diminishes in the ratio of distance from cities, as the chief if not the only manure in use is human excrement. All is economized by various expedients with painful anxiety, and used in the crude state, a common intestinal trouble among the natives is tape-worm. Very little hard land is utilized, and most of the work of the cultivator is in liquid mud. Rice-land is five times more valuable than arable land. Spade-husbandry is the main feature of farming, and in this the Japanese can be taught little. His tool, made of iron, wood, and rope, is chiefly made by hand. House-stocks are likewise of timber and metal. After these, in order come the plows, made of wood and shod with iron, and drawn either by human or bovine power. They cost from thirty cents to two dollars each. Nine out of ten "fields" in Japan are little squares a few yards across, separated from one another by slightly raised mud-banks, and communicating by an opening a foot wide for the water to flow through. Pulverizers and rollers are usually of wood, the spikes or cutters sometimes being of iron. Rakes are of wood, and the jōro, or scoop, takes the place of our shovel, the user pulling it toward him, instead of pushing it with us. Planting and harvesting are done by hand, each stalk or bunch, whether as stock for transplanting or as ripened stock, being seized by the hand. Hatchelling, winnowing, grinding, and pounding are still performed in the primitive way begun millenniums ago. Irrigation is carried on by terracing mountain pinneys or valleys in which a stream flows. When the field is higher than the stream, the tread-wheel by a single person, or the dipping-bucket slung by a pair, forms the usual apparatus. The present Lilliputian methods must be revolutionized, and the native bill of fare lengthened, before American tools are in demand. Male fieldhands work twelve hours a day, have five holidays in each month, and receive their foot, lodging, and wages ranging from 10 to 16 yen per annum ($3.80 to $12.90). Female laborers work the same hours, not entitled to holidays, and receive, besides their food and lodging, about 7 yen ($2) per annum. Labor costs about twelve dollars an acre.

Commerce.—The following is a synoptic table of the foreign trade of Japan during 1883:

### IMPORTS

<table>
<thead>
<tr>
<th>ARTICLES</th>
<th>Yokohama</th>
<th>Hiogo</th>
<th>Nagasaki</th>
<th>Hakodate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotton manufactures</td>
<td>$4,840,188</td>
<td>$2,789,661</td>
<td>$70,585</td>
<td>......</td>
<td>$7,600,434</td>
</tr>
<tr>
<td>Woolen and mixed cotton and woolen goods</td>
<td>2,361,089</td>
<td>1,350,907</td>
<td>40,587</td>
<td>......</td>
<td>4,101,985</td>
</tr>
<tr>
<td>Metal articles</td>
<td>1,183,561</td>
<td>759,568</td>
<td>80,584</td>
<td>......</td>
<td>1,423,719</td>
</tr>
<tr>
<td>Electrode articles</td>
<td>1,301,047</td>
<td>673,728</td>
<td>70,065</td>
<td>......</td>
<td>1,273,845</td>
</tr>
<tr>
<td>Sugar</td>
<td>5,380,465</td>
<td>2,010,795</td>
<td>314,771</td>
<td>91,941</td>
<td>8,896,083</td>
</tr>
<tr>
<td>Miscellaneous foreign products</td>
<td>2,313,529</td>
<td>1,859,051</td>
<td>342,964</td>
<td>12,927</td>
<td>6,336,467</td>
</tr>
<tr>
<td>Miscellaneous Eastern products</td>
<td>419,725</td>
<td>419,900</td>
<td>138,984</td>
<td>1,934</td>
<td>1,198,553</td>
</tr>
<tr>
<td>Merchantile article</td>
<td>119,619,619</td>
<td>2,399,692</td>
<td>70,210</td>
<td>4,376</td>
<td>125,116,688</td>
</tr>
<tr>
<td>Specie</td>
<td>2,091,045</td>
<td>2,446,059</td>
<td>118,920</td>
<td>4,352</td>
<td>4,740,359</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>$31,429,097</td>
<td>$10,794,329</td>
<td>$1,079,021</td>
<td>$4,876</td>
<td>$34,298,528</td>
</tr>
</tbody>
</table>

### EXPORTS

<table>
<thead>
<tr>
<th>ARTICLES</th>
<th>Yokohama</th>
<th>Hiogo</th>
<th>Nagasaki</th>
<th>Hakodate</th>
<th>Total</th>
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<tbody>
<tr>
<td>Silk</td>
<td>$18,470,919</td>
<td>$18,588</td>
<td>......</td>
<td>......</td>
<td>$18,470,919</td>
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<td>Silk-worst goods</td>
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<td>......</td>
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<td>Cocoon</td>
<td>270,328</td>
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<td>......</td>
<td>......</td>
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<tr>
<td>Tea</td>
<td>2,548,678</td>
<td>2,050,682</td>
<td>......</td>
<td>$64,577</td>
<td>4,665,932</td>
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<td>578,296</td>
<td>$111,586</td>
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<td>Porcelain</td>
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<td>181,068</td>
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<td>Sea-weed</td>
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<td>44,961</td>
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<td>141,227</td>
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<td>400,050</td>
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<td>Specie</td>
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<td><strong>Totals</strong></td>
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<td>$5,589,613</td>
<td>$9,219,314</td>
<td>$45,158</td>
<td>$32,363,253</td>
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</tbody>
</table>
KS See Druga, New.

State Government.—The State officers of the year were the following: Governor W. Glick, Democrat; Lieutenant Governor, D. W. Finney; Secretary of State Smith; Treasurer, Samuel T. Auditor, E. P. McCabe; Attorney General W. A. Johnston; Superintendent of Instruction, H. C. Speer; Insurance Commissioner, R. B. Morris; Railroad Comra, Henry Hopkins, James Humphrey, L. Turner. Judiciary, Supreme Court: justices, Albert H. Horton; Associate Daniel M. Valentine and David J. the latter succeeded by T. A. Hard.

and Present Condition.—Reviewing the state of the State since its admission, there is in its message to the Legislature of some statistics that indicate its thirty-one counties organized at the time of its admission have increased nearly two, and the population of the State, little in excess of 100,000, is now illion and a quarter. Then, only 406, of its area of productive soil were cultivation, and the leading crop-produced State aggregate only 154,175 bushels of corn, the year just closed, 9,458,727 acres for cultivation, and the leading cereal of the State aggregate 45,050,431 of wheat and 198,570,566 bushels of corn in 1861, the assessed value of sixty-three counties aggregate only $38; now it aggregates $237,092,391. illusory, and the leading producing districts of the State is 328, 884,559,906.86; and sixty-eight districts composed of four or five unorganized counties of the State filled by one or more lines of railroad, the live-stock of the State comprised 44 horses, 1,496 mules, 98,468 cattle, swine, and 17,569 sheep—a total of 391 head.

The total bonded debt of the State 1,188,85 was $95,500. Of this amount, current school fund held $54,400; the } fund, $29,000, and the sinking fund, a total of $514,500. Only $251,000 ands remain in the hands of indivi

als or corporations. The cash in the treasury belonging to the sinking fund is $13,202.58. During the two years covered by the fourth biennial report of the State Treasurer, viz., from July 1, 1883, to June 30, 1884, the receipts of the treasury (including a balance of $64,923.76 on hand July 1, 1882) aggregated $4,638,480.90. The disbursements during the same period were $3,883,948.43, leaving a balance in the treasury, June 30, 1884, of $754,512.07. From July 1 to Dec. 31, 1884, the receipts of the State treasury were as follows: From tax, $298,798,39; from principal of school lands, $118,811.39; from permanent school-fund bonds paid, $33,553.35; from interest on sales of school land, $267,966.50; from interest on permanent fund bonds, $35,338.60; from other sources, $114,846.44. Making an aggregate of $742,301.54, which, added to the balance on hand June 30, 1884, makes a total of $1,496,518.51. The disbursements during the same six months aggregated $1,118,452.96, leaving in the treasury, December 31, the sum of $308,043.55.

The indebtedness of the State,” says the Governor, “is so small that the contrast presented by the enormous aggregate of local debts is startling. The bonds issued by the several counties of Kansas, and outstanding on the 1st of July last, aggregated $7,447,741.90, and the county warrants outstanding at the same date aggregated $621,006.39, making a total county indebtedness of $8,068,748.29. The township bonds outstanding at the same time aggregated $2,635,243.55, and the township warrants outstanding, $34,787.35 making a total township indebtedness of $2,670,030.90. The city bonds thus outstanding aggregated $2,297,125.90; and the city warrants due and unpaid, $200,910.27—a total city indebtedness of $2,509,036.17. The school-district bonds outstanding at the same date aggregated $2,294,988.21, and the school-district warrants $13,926.19—a total school-district indebtedness of $2,318,914.40. Grand total of municipal indebtedness, county, township, etc., $15,501,928.96.

Public Education.—The school system of Kansas embraces the common schools, the University, the Agricultural College, and the Normal School. The expenditures of the State for public education exceed the aggregate of all its other expenditures. The school population—between the ages of five and twenty-one—numbers 111,250, an increase of 58,981 over
1883. The pupils enrolled numbered 308,601, an increase of 17,438 over the enrolment of the previous year. The attendance in 1883 averaged 165,117; for the year just closed, 207,221 — an increase of 39,104. Average wages paid teachers per month, males, $40.70; females, $32.85.

The school buildings and grounds are valued at $5,715,682. There are 6,605 school-houses, of which 417 were built during the past year.

The State University had 521 students enrolled during the last fiscal year, and is steadily growing. The State Agricultural College is flourishing. Its buildings are substantial and commodious, its grounds attractive, and its attendance has increased 26 per cent., 395 students now being enrolled. The new wing of the main college-building is completed. The endowment fund aggregates $475,905.18, all of which, except $3,111, is invested at rates of interest varying from six to ten per cent. The attendance at the State Normal School during the last fiscal year was 554.

Public Institutions. — There are six great public charities: the Insane Asylums at Osawatomie and Topeka, the Institution at Wyandotte for the Education of the Blind, the Institution at Olalla for the Education of the Deaf and Dumb, the State Reform School near Topeka, and the Asylum at Lawrence for Idiotic and Imbecile Youth.

More than two fifths of the total appropriations made by the Legislature for the support of the State government during the current fiscal year — $552,984 of a total of $880,946 — are expended for the maintenance of these charities. The Penitentiary not only continues self-sustaining, but the profits of the coal-mine have made it a source of revenue to the State. Its surplus earnings for the year ended June 30, 1884, were $26,717.09. The output of the coal-mine is steadily increasing.

Saccharum Sugar Industry. — There are three sugar-factories in the State, at Sterling, Hutchinson, and Ottawa, and they produced during the year 620,000 pounds of sugar and 155,500 gallons of sirup. This was made from 19,300 tons of sorghum cane. The quality of the sugar is identical with that of Louisiana sugar.

Prohibition. — Returns received in January from 66 of the 81 organized counties, including all the populous ones, relative to the working of prohibition, demonstrate, it is claimed, three facts favorable to prohibition: 1. That it has materially decreased the number of saloons. 2. That an unusually large per cent. of the prosecutions under the law have resulted in convictions. 3. That the principle of prohibition is growing stronger. The following are the figures:

| Number of saloons prior to May 1, 1881 | 729 |
| Number of saloons Jan. 1, 1884 | 518 |
| Number of saloons, decrease | 211 |
| Number of counties covered by report | 66 |
| Number of counties having no saloons | 41 |
| Number of counties in which there are saloons | 25 |
| Number of convictions in district courts | 351 |

Of the 818 saloons open Jan. 1, 1884, 10, or over one half, were in Leavenworth. The prohibitory law took effect May 1, 1881.

The State Temperance Union met in annual session in Topeka, near the end of November. The president, in his address, made these claims:

1. John A. Martin and the entire Republican ticket upon a platform demanding the honest enforcement of the prohibitory amendment, that the full effect of prohibition may be realized, that the declared will of the people may be respected, and that the majority of the law vindicated, has been elected by a majority of 38,489.

2. George W. Glick, C. K. Holliday, and the Democratic ticket, upon a platform denouncing prohibition and demanding re-election, and aided andabetted in their efforts by those Reubominationists who desired the Republican ticket, have been defeated by 38,489.

3. The Legislature elected by the people is two to one against reubomination and in favor of the honest enforcement of the prohibitory amendment in spite of the fusion of Democrats and Reubominationists.

4. The Republican party of Kansas by this ticket stands committed to the honest enforcement of the prohibitory amendment, against a Constitutional Convention, and against reubomination; and the people of Kansas have sustained the party’s position on these questions by 38,489.

A State Convention was held in Lawrence, Sept. 2, 1884, and a Prohibition party organized in Kansas, auxiliary to the National Prohibition party. A platform was adopted, and an electoral ticket put in the field. This party held a convention in December, and besides passing resolutions demanding prohibition, pronounced in favor of female surage.

Politics. — The following were the Republican candidates for State officers:

For Governor, John A. Martin; for Lieutenant-Governor, A. P. Biddle; for Secretary of State, E. B. Allen; for Auditor, E. P. McCabe; for Treasurer, S. T. Howe; for Attorney-General, S. B. Braden; for Superintendent of Public Instruction, J. H. Law- head; for Chief-Justice, A. H. Horton; for Associate Justices, W. A. Johnston.

For Representatives in Congress their candidates were:

First District, E. N. Morrill; Second District, E. B. Funston; Third District, B. W. Perkins; Fourth District, Thomas Ryan; Fifth District, John A. Anderson; Sixth District, Lewis Hanback; Seventh District, Samuel R. Peters.

The following was the Democratic ticket:

For Governor, George W. Glick; for Lieutenant-Governor, C. K. Holliday; for Secretary of State, Eugene Hagen; for Auditor, H. V. Gavigan; for
W. A. Hullam; for Attorney-General, Smith; for Superintendent of Public In- 
J. Keyes; for Chief-Justice, W. A. 
for Associate Justice, T. A. I'urd.

nion of Republicans favoring a re 
to the people of the prohibitory 
it was held. They supported the 
av ticket, but co-operated 
Democrats on State issues. The 
c nomine for Lieutenant-Governor 
rebellion. On the 4th 
ber the Republican ticket was elect- 
alloting is the vote for Presidential 
Republican, 154,406; Democratic, 
reenback, 16,841; Prohibition, 4, 
Republican Congressmen were 
Governor the vote was: Re 
Democratic, 108,394; oth- 
The Republican vote for the other 
lected, receive, and remove to such place of residence any 
personal estate of the custos jus trust. 
To provide for funding the State debt now owing to 
the banks. 
To equalize assessments for revenue purposes, and 
to provide for a State Board of Equalization. 
To provide for liberty of conscience. This 
declares that "all persons committed to any 
State prison, reform-school, house of refuge, 
or other place of confinement in said State, 
shall be allowed spiritual advice and spiritual 
ministration from any recognized clergyman of 
the denomination or church to which such per- 
sons so committed or received may respective- 
ly belong or have belonged."

Constitutional Amendment. — There was also 
passed "An act for taking the sense of the good 
people of this Commonwealth as to the neces- 
sity and expediency of calling a convention to 
amend the Constitution, and to ascertain the 
number of persons entitled to vote for Repre- 
sentatives." The vote is to be taken at the 
August election in 1885. The following is the 
provision for ascertaining the number of legal 
voters:

That all assessors are hereby required to enroll, in 
a column which each shall open in his assessor's book 
for that purpose, the names of all citizens having the 
right to vote for Representatives for the year 1885. 
But said assessors shall not enroll in such column the 
name of any person unless they shall at the time know 
that he is entitled to vote for Representatives at said 
election, and such knowledge shall be founded only 
upon (1) the personal acquaintance of the assessor; or 
(2) (3) sufficient information obtained by him directly 
from the person whose name is enrolled; or (3) a satis- 
factory statement, under oath, from other creditable 
persons who know the facts necessary to the qualifica- 
tion of such voter.

The Prison.—The new prison is intended for 
male criminals under thirty years of age, and 
not known to have been previously sentenced 
in this or any other State or country. The 
discipline to be observed in said prison shall be re- 
formatory in its tendency, and the said mana- 
gers shall have power to use such means of 
reformation, consistent with the improvement of 
the Inmates, as they may deem expedient. 
Agricultural labor or mechanical industry shall 
be chief elements in any plan adopted for the 
reformation of said criminals."

Education.—Perhaps the most important act 
of the session was one to amend and reform 
the common-school laws of the Commonwealth. 
The following are its most important provi- 
sions:

There shall be throughout the State of Kentucky a 
uniform system of common schools in accordance 
with the Constitution of the State, and the provisions 
of this act. No school shall be deemed a "common 
school," within the meaning of this chapter, or be 
entitled to any contribution out of the school fund, 
unless the same has been, pursuant hereto, actually kept
by a qualified teacher for three months in districts having 65 pupils or less, for four months in districts having more than 65 but less than 45 pupils, and for five months for districts having 45 or more pupils during the same school-year, and at which every child residing in the district, between the ages of six and twenty years, has had the privilege of attending, whether contributing toward defraying its expenses or not.

The annual resources of the school fund shall consist of:

- The interest on the bond of the Commonwealth, for $1,327,000, in aid of common schools, at the rate of 6 per cent. per annum, payable January 1st and July 1st.
- The dividends on 735 shares of the capital stock of the Bank of Kentucky, representing a value of $73,500, owned by the State.
- The interest on the bonds issued for surplus, due the counties by the State, at the rate of 6 per cent. per annum, payable on January and July 1st.
- The annual State tax of twenty-two cents on each $100 of the taxable property of the State, including railroads, and a proportionate share of the special taxes paid by turnpike-roads, banks, and all other corporations.
- The annual tax of fifty cents on each $100 of the capital stock of the Farmers' Bank of Kentucky, of the Bank of Kentucky, of the Farmers' and Drovers' Bank, and of the Bank of Shelbyville.
- All other monies and property-taxes, fines, and forfeitures, expressly set apart by existing laws in aid of common schools.

There may be a county tax not exceeding twenty-five cents on $100, and one dollar on each poll, levied for school purposes in any county a majority of whose qualified voters shall vote for it.

The Superintendent of Public Instruction, the Secretary of State, the Attorney-General, and their successors in office, together with two professional teachers to be elected by them, shall be a body politic and corporate, by the name and style of “Board of Education for the State of Kentucky.”

There shall be a board of superintendents of common schools elected for two years by the qualified voters of each county. The counties are divided into districts, each of which is under the control of three elective trustees. Towns and cities may have a separate school organization.

Colored school trustees for each colored school district shall be elected at the same time and in the same manner that white trustees are elected: Provided, however, That no tax shall be levied upon the property or poll, or any services required of any white person to aid in building or repairing a school-house for the use of colored children; and no tax shall be levied upon the property or poll, or any services required of any colored person to aid in building or repairing a school-house for the use of white children. And no colored person shall be allowed to vote for a trustee of a white school; and no white person shall be allowed to vote for a trustee of a colored school. It shall not be lawful, under any of the provisions of this act, for any white child to attend any common school provided for colored children, or for any colored child to attend any common school provided for white children.

There shall be separate teachers' institutes for colored teachers, and they may have a separate State Teachers' Association.

United States Senator. — On February 6, Joseph S. C. Blackburn, after a protracted struggle in the Democratic caucus, was elected United States Senator. He was born on a farm in Woodford county, Oct. 1, 1836. At the age of 16 he attended the normal school at Frankfort, whence he went to Centre College, Danville, graduating in 1857. In 1888 he began the practice of law in Chicago, but returned to his native county in 1886. Entering the Confederate army in 1861, he served through the war, after which he resided in Arkansas until 1888, when he returned to his former home. In 1871 and 1873 he was elected to the Legislature of Kentucky. In 1874 he was sent to Congress, and was serving his fifth term when elected Senator.

Political. — The Republican State Convention assembled in Louisville on the 1st of May, chose delegates to the National Convention to meet in Chicago, and nominated presidential electors. The convention demanded the enforcement of all the constitutional amendments, a free ballot and an honest count, the continuance of the system of protection to home industries, free tobacco, and national aid to education. The Democratic State Convention met in Frankfort on the 7th of May, nominated presidential electors, and chose delegates to the Democratic National Convention. The resolutions adopted demand a tariff for revenue only.

On August 4th William H. Holt, Republican, was elected judge of the court of appeals for the first appellate district over Robert Rice, Democrat, by a vote of 33,608 to 32,993. On the 4th of November the election resulted as follows: Democratic electors, 152,961; Republican, 118,123; Butler, 1,691; St. Joe, 8,193. Ten Democratic and one Republican (Ninth District) Congressmen were elected.

KOLBE, ADOLF WILHELM HERMANN, a German chemist, born in Ellischhausen, Göttingen, Sept. 27, 1818; died in Leipzig, Nov. 25, 1844. He was educated at the Gymnasium of Göttingen and at the university of that town, where he studied chemistry under Wohler from 1838 to 1842. During the three following years he was assistant to Bunsen, at Marburg, and in 1846 he became the assistant of Sir Lyon Playfair, at the Royal Institution, London. He was appointed successor to Bunsen in the professorship of Chemistry at the University of Marburg in September, 1851. This chair he held till 1855, when he was called to take charge of the chemical laboratory at Leipsic. Under his direction a magnificent laboratory was built, and at once thoroughly fitted up with the finest and most delicate apparatus necessary to chemical research. Students from all parts of the world flocked to the lectures, and the department of chemistry at Leipsic was by many considered superior even to that of the University of Berlin.

The greater portion of the many researches of Kolbe lie in the domain of organic chemistry. He shares with Frankland (his associate at Marburg and at London) the honor of originating the doctrine of the saturation capacity of carbon, a doctrine that has been more fruitful than any other in the development of theoretical organic chemistry. His publications date from 1845, when his researches on the
LAW, CONSTITUTIONAL. (INDIANS NOT CITIZENS.)

sition of fusel-oil of grain, the action of e upon carbon disulphide, and the dis-
off trichlor-methyl-hypo-phosphoric acid

ethyl-hypo-phosphoric acid appeared in
a "Annalen." While in England, he
ied (in 1847) conclusions, showing that
y acids and benzoic acid contain alco-
licals in place of an atom of hydrogen
ic acid. This theory he further devel-
ad experimentally verified, and later he
fully maintained his priority against the
made by Adam Wurtz. His work further-
as investigations on the cyanogen com-
of alcohol radicals, on dimethyl arsenic
ives, showing the exact constitutions of
esodyl compounds. His great knowl-
! theoretical chemistry led him to inter-
ctly the composition of numerous
compounds. He also enlarged our
le of the acids of o-nitro-benzoin, of the
al constitution of aspiragine and aspar-
cid, of the isomerie relations of sumario
le acid, as well as of itaconic, citra-
and mesaconic acid; of uric acid, of
derivatives of cyanogen, and the phos-
compounds of platinum. The most
ous of all his work, however, was the
sis of salicylic acid, and in 1874 he had
essfully modified his original method
leylic acid became a commercial prod-
uct. Kolbe was a decided opponent of the
ype and structural theories, and by his bitter
nd caustic criticisms did much good. Vagueness
and ambiguity of thought and expression in chemical memoirs and treatises he denounced
without mercy. By this action he isolated him-
to a great degree from the more conserva-
tive chemists of his time.

In 1847 he became editor of Liebig's and
Wohler's "Handwörterbuch der Chemie," and
in 1859 he undertook the editorship of Erd-
mann's "Journal für praktische Chemie." His
published works include a "Manual of Organic
Chemistry," in three volumes (1864-1878); volumes iii to v of Graham Otto's "Manual
of Chemistry"; a "Short Text-book of In-
organic Chemistry" (1877), a corresponding
"Text-book of Organic Chemistry" (1886),
and a satire, "Aus der molekular Welt." He
was the possessor of numerous degrees and
honors, and recently had been awarded the
Davy medal by the Royal Society of England
in recognition of his researches on the iso-
erism of alcohols. It was expected that he
would attend the annual meeting (December
1) and receive in person this testimonial; but
a few days previous, without any premonitory
symptoms, he was stricken with heart-disease,
and was found dead on his own door-step after
his day's work had been completed.

CONSTITUTIONAL. Several important
questions of constitutional law
rendered by the United States Supreme
during the session beginning in October,
(For the opinion of the Court on the
al of a conflicting treaty and act of
es, see TREATY EXAMINED OR THE
States, in this volume.)

as not Citizens of the United States.—The
n amendment to the Federal Consti-
declares that "all persons born or
ized in the United States, and subject
isdiction thereof, are citizens of the
States, and of the State wherein they re-
In the case of John Elk against Charles
, the Federal Supreme Court held, No-
3, that an Indian, born a member of
the Indian tribes within the United
is not, merely by reason of his birth
the United States, and the fact that he
ually withdrawn from his tribe and
up his residence among white citizens, a
within the meaning of the fourteenth
ment. Elk was a resident of Omaha,
a, and claimed the right to vote. The
ant was an election officer in that city,
osed to let him vote. The
opinion of the Court was prepared by
Gray. He first points out that, under
stitution of the United States as origi-
nalized, "Indians not taxed" were
from the persons according to whose
numbers representatives and direct taxes were
apportioned among the several States; and
that Congress had and exercised the power to
regulate commerce with the Indian tribes and
the members thereof, whether within or with-
out the boundaries of one of the States of the
Union. The Indian tribes, being within the
territorial limits of the United States, were
not, strictly speaking, foreign states; but they
were alien nations, distinct political commu-
nies, with whom the United States might, and
habituadly did, deal, as it saw fit, either through
treaties made by the President and Senate, or
acts of Congress in the ordinary forms of legis-
lation. The members of those tribes owed im-
mediate allegiance to their several tribes, and
were not part of the people of the United
States. They were in a dependent condition,
me of papilage, resembling that of a ward
to his guardian. Indians and their property,
empt from taxation by treaty or statute of
the United States, could not be taxed by any
State. General acts of Congress did not apply
to Indians, unless so expressed as clearly to
manifest an intention to include them. The
alien and dependent condition of the Indian
tribes could not be put off at their own will,
without the advice or assent of the United
States. They were never deemed citizens of
the United States, except under explicit pro-
visions of treaty or statute to that effect, either
declaring to be citizens a certain tribe, or such
members of it as chose to remain behind on the removal of the tribe westward; or authorize individuals of particular tribes to become citizens by naturalization.

Coming to the consideration of the fourteenth amendment, the Court says that the main object of the opening sentence was "to settle the question, upon which there had been a difference of opinion throughout the country, and in this court, as to the citizenship of free negroes (Scott vs. Sandford, 19 Howard, 398); and to put it beyond doubt that all persons, white or black, and whether formerly slaves or not, born or naturalized in the United States, and owing no allegiance to any alien power, should be citizens of the United States, and of the State in which they reside." (Slaughter-House Cases, 16 Wallace's Reports, 66, 73; Strader vs. West Virginia, 105 U. S. Reports, 303, 308.)" The opinion then proceeds:

This section contemplates two sources of citizenship, and two sources only: birth and naturalization. The persons declared to be citizens are "all persons born in the United States, except for persons born in one State, and subject to the jurisdiction thereof." The evident meaning of these last words is, not merely subject in some respect or degree to the jurisdiction of the United States, but completely subject to their political jurisdiction, and owing them direct and immediate allegiance. And the words relate to the time of birth in the one case, as they do to the time of naturalization in the other. Persons not thus subject to the jurisdiction of the United States at the time of birth can not become so afterward, except by being naturalized, either individually, as by proceedings under the naturalization acts, or collectively, as by the force of a treaty by which foreign territory is acquired.

Indians born within the territorial limits of the United States, members of, and owing immediate allegiance to, one of the Indian tribes (an alien, though dependent, power), although in a geographical sense born in the United States, are no more "born in the United States and subject to the jurisdiction thereof" within the meaning of the first section of the fourteenth amendment, than the children of subjects of any foreign government born within the domain of that government, or the children, born within the United States, of ambassadors or other public ministers of foreign nations.

This view is confirmed by the second section of the fourteenth amendment, which provides that "representatives shall be apportioned among the several States according to their respective numbers, counting the whole number of persons in each State, excluding Indians not taxed." Slavery having been abolished, and the persons formerly held as slaves made citizens, this clause fixing the apportionment of representatives has abrogated so much of the corresponding clause of the original Constitution as counted only three fifths of such persons. But Indians not taxed are still excluded from the count, for the reason that they are not citizens. Their absolute exclusion from the basis of representation, in which all other persons are now included, is wholly inconsistent with their being considered citizens.

So the further provision of the second section for a proportionate reduction of the basis of the representation of any State in which the right to vote for presidential electors, representatives in Congress, or executive or judicial officers, or members of the Legislature of a State, is denied, except for participation in rebellion or other crime, to "any of the male inhabitants of such State, being twenty-one years of age and citizens of the United States," can not apply to a denial of the elective franchise to Indians not taxed, who form no part of the people entitled to representation.

It is also worthy of remark that the language used, about the same time, by the very Congress which framed the fourteenth amendment, in the act of January 29, 1866, declaring that the Civil Rights Act of April 9, 1866, declaring that the Civil Rights Act of April 9, 1866, declaring that all persons born in the United States, and not subject to any foreign power, excluding Indians not taxed (U. S. Stat. 27; U. S. Rev. Stat., § 1990).

Such Indians, then, not being citizens by birth, can only become citizens in the second way mentioned in the fourteenth amendment, by being "naturalized in the United States," by or under some treaty or statute.

The Court adds that since the ratification of the fourteenth amendment Congress has passed several acts for naturalizing Indians of certain tribes, "which acts would have been superfluous if Indians were or might become, without any action of the Government, citizens of the United States;" and that "the recent statutes concerning homesteads are quite inconsistent with the theory that Indians do or can make themselves independent citizens by living apart from their tribes." In conclusion, the Court says: "Upon the question whether any action of a State can confer rights of citizenship upon Indians of a tribe still recognized by the United States as retaining its tribal existence, we need not and do not express an opinion, because the State of Nebraska is not shown to have taken any action affecting the condition of this plaintiff. (See Chirac vs. Chirac, 2 Wheaton's Reports, 293; Hecksmith vs. Howard's Reports, 363; United States vs. Holmes, 1 Wallace's Reports, 407, 420; United States vs. Joseph, 94 U. S. Reports, 614, 618.)" The plaintiff, not being a citizen of the United States under the fourteenth amendment of the Constitution, has been deprived of no right secured by the fifteenth amendment, and can not maintain this action."

From this decision Justices Harlan and Woods dissented, in separate, opinions written by the former. They maintain that there is nothing in the history of the adoption of the fourteenth amendment that justifies the conclusion that only those Indians are included in its grant of national citizenship who were at the time of their birth, subject to the complete jurisdiction of the United States. "A careful examination of all that was said by Senators and Representatives, pending the consideration by Congress of the fourteenth amendment, justifies us in saying that every one who participated in the debates, whether for or against the amendment, believed that, in the form in which it was approved by Congress, it granted, and was intended to grant, national citizenship to every person of the Indian race in this country who was not connected with any tribe, and who resided, in good faith, outside of Indian reservations, and within one of the States or Territories of the Union. This fact is, we think, entitled to great weight in determining the meaning and scope of the amendment."
to us that the fourteenth amendment, in as many Indians who, although born in tribal relations, in the complete jurisdiction of the United States, was intended to confer national citizenship upon the entire population in this country of Indian descent—the larger part of which was enslaved, and, by the same constitution, exclude from such citizenship Indians who had never been in slavery, and who, by be-cause, as residents of States and Territories over, subject to the jurisdiction thereof.

The language of the fourteenth amendment that "all persons born or naturalized in the United States and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside," was thus interpreted by Justice Field, of the Supreme Court, whose opinion was concurred in by Circuit Judge Sawyer and District Judges Sabin and Hoffman:

This language would seem to be sufficiently broad to cover the case of the petitioner. He is a person born in the United States. Any doubt on the subject, if there can be any, must arise out of the words "subject to the jurisdiction thereof." These words were designed to cover the case of children born in the United States of persons engaged in the diplomatic service of foreign governments, such as ministers and ambassadors, whose residence, by a fiction of public law, is regarded as a part of their own country. This extraterritoriality of their residence secures to their children born here all the rights and privileges which would inure to them if they had been born in the country of their parents. They also cover the case of persons born on the public vessels of a foreign country, while within the waters of the United States, and consequently within their territorial jurisdiction. Such persons are considered as born in the country to which the public vessel belongs. They are not born, in the sense of public law, within the jurisdiction of the United States.

The language used has also a more extended purpose. The doctrine recognized in the United States is the right of every one to expatriate himself and choose, if he likes, another country. This right would seem to follow from the greater right recognized and proclaimed to the world in the immortal document in which the American colonists declared their independence and separation from the British crown, as belonging to every one of us, whether born or chosen, the right of the people to change their government and to be free, subject wherever they go, never has taken root in this country, although there are dicta in some judicial decisions that a citizen can not renounce his allegiance to the United States without the permission of the Government, under regulations prescribed by law; and this would seem to have been the opinion of Chancellor Kent when he published his Commentaries. But a different doctrine prevails now. The naturalization laws have always proceeded upon the theory that any one can change his home and allegiance without the consent of his Government. And we adopt as our citizens those belonging to our race, who come from other lands and show attachment to our institutions, and desire to be incorporated with us. So profoundly convinced are we of the right of these dwellers in other countries to change their residence and allegiance, that when once they are naturalized, they are deemed entitled, with the native-born, to all the protection which the strong arm of the national Government can extend to them, wherever they may be, at home or abroad. And the same right, accorded to the people of other countries to become citizens here, is accorded to them and to the native-born, to change, if they choose, their allegiance from our Government.
to that of other States. As to the position of the
district attorney, that the restriction excludes the re-
entry of the petitioner into the United States, even if
he be a citizen, only a word is necessary. No citizen
can be banished from his country except in punish-
ment for crime. Banishment for any other cause is
unknown to our laws, and beyond the power of Con-
gress. The petitioner must be allowed to land, and
it is so ordered.

**Power to tax Immigrants.**—The right of Con-
gress to levy a head-tax on immigrants was
affirmed by the United States Supreme Court
in an opinion handed down December 8. In
several previous cases the Court had declared
unconstitutional State laws regulating immi-
gration and taxing immigrants (see "Annual
Cyclopedia" for 1882, p. 465). The ground of
the decision was that, as the subject pertain-
to foreign commerce, it is one on which a
State has no right to legislate, for the reason
that it falls within the exclusive jurisdiction of
Congress. These were cases in which the con-
stitutionality of State statutes was called in
question. The Court had not passed directly
upon an act of Congress before the suits now
under consideration. These were brought
against the Collector of the Port of New York
by certain steamship companies, which denied
the constitutionality of the act passed by Con-
gress in 1882, imposing upon the owners of
steamers and vessels a tax of fifty cents for
every alien brought to this country. The
purpose of the tax was the care of immigrants
and the protection of the country against the
burdens of immigration. The steamship com-
panies questioned the constitutionality of the
act on these grounds: first, Congress had no
power, under the commercial clause of the
Constitution, to pass it; second, assuming that
it was an exercise of the taxing power, the
tax was not levied to provide for the common
defense and general welfare of the United
States, nor was it uniform throughout the
United States; third, that it violated provisions
contained in numerous treaties of the
United States with friendly nations.

On the first point the Court, speaking through
Justice Miller, said:

The act of Congress is similar in its essential fea-
tures to many statutes enacted by States of the Union
for the protection of their own citizens and for the
good of the immigrants who land at seaports within
their borders.

That the purpose of these statutes is humane, is
highly beneficial to the poor and helpless immigrant,
and is essential to the protection of the people in whose
minds they are deposited by the steamships, is beyond
dispute. That the power to pass such a law should ex-
ist in some legislative body in this country is equally
clear. This Court has decided distinctly and fre-
quently, and always after a full hearing from able counsel,
that it does not belong to the States. That decision
did not rest in any case on the ground that the State
and its people were not deeply interested in the exist-
ence and enforcement of such laws, and were not cap-
able of enforcing them if they had the power to en-
sure them; but on the ground that the Constitution, in
the division of powers which it declares between the
States and the General Government, has conferred this
power only to the latter to the exclusion of the former. We
are now asked to decide that it does not exist in Con-
gress, which is to hold that it does not exist in
the framers of the Constitution have so worded
the act as to include our own, can, without restraint or re-
striction, deposit here, if they find it to their interest
to do so, the entire European population of criminals
and diseased persons, without making any
attempt to preserve them from starvation and its con-
sequences, even for the first few days after
leaving the vessel.

This court is not only asked to decide this
question, but to overrule its decision, several times;
unanimity, that the power does reside in the
Constitution, and the attention of Congress
to the duty which arises from that language;
the very law which is here in question.

That these statutes are regulations of com-
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amendment of the Constitution, on the ground that the act of the Iowa Legislature is a violation of the privileges and immunities of citizens of the United States, which the amendment declares shall not be abridged by the States; and that, in this case, it deprives him of his property without due process of law.

On the point whether making or selling of liquor is a privilege or immunity of citizenship, the Court said: "The weight of authority is overwhelming that no such immunity has hitherto existed as would prevent State legislatures from regulating and even prohibiting the traffic in intoxicating drinks, with a solitary exception. That exception is the case of a law operating so rigidly on property in existence at the time of its passage, absolutely prohibiting its sale, as to amount to depriving the owner of his property. A single case, that of Wynehammer v. The People (8 Kernan, 486), has held that, as to such property, the statute would be void for that reason. But no case has held that such a law was void as violating the privileges or immunities of citizens of the United States. If, however, such a proposition is seriously urged, we think that the right to sell intoxicating liquors, so far as such a right exists, is not one of the rights growing out of citizenship of the United States, and in this regard the case falls within the principles laid down by this court in the Slaughter-House Cases, 16 Wallace's Reports, 38."

Whether a liquor law deprives a person of his property, is a question which depends on the terms and effect of the statute. Whether a statute that deprives a person of his property does so "without due process of law," in violation of the fourteenth amendment, is a question that was not presented to, or decided by, the court in this case. On this point, the same Court, in the later case of Beer Company v. Massachusetts (97 U. S. Reports, 82), said:

If the public safety, or the public morals, require the discontinuance of any manufacture of intoxicating liquors, the hand of the Legislature cannot be stayed from providing for its discontinuance, by any incidental inconvenience which individuals or corporations may suffer. All rights are held subject to the police power of the State. We do not mean to say that property actually in existence, and in which the right of the owner has become vested, may be taken for the public good without compensation. But we infer that the liquor in this case, as in the case of Bartemeyer v. Iowa (18 Wallace, 191), was not in existence when the liquor law of Massachusetts was passed. Had the plaintiff in error relied on the existence of the property prior to the law, it behoved it to show that fact. But no such fact is shown, and no such point is taken. The plaintiff in error boldly takes the ground that, being a corporation, it has a right, by contract, to manufacture and sell beer forever, notwithstanding and in spite of any exigencies which may occur in the morals or the health of the community, requiring such manufacture to cease. We do not so understand the rights of the plaintiff. The Legislature had no power to confer any such rights. Whatever differences of opinion may exist as to the extent and boundaries of the police power, and however difficult it may be to render a satisfactory definition of it, there seems to be no doubt that it does extend to the protection of the lives, health, and property of the citizens, and to the
PRESERVATION OF GOOD ORDER AND THE PUBLIC MORALS.

The Legislature can not, by any contract, divest itself of the power to provide for these objects. They belong emphatically to that class of objects which demand the application of the maxim, actus populi est primus ius; and they are to be attained and provided for by such appropriate means as the legislative discretion may devise. That discretion can no more be bargained away than the power itself.

II. THE SAN FRANCISCO LAUNDRY ORDNANCE.—In April, 1884, the Board of Supervisors of San Francisco passed an ordinance reciting that the indiscriminate establishment of public laundries and wash-houses endangered the public health and safety, prejudiced the welfare of the community, and depreciated the value of property in their neighborhood. It then enacted that it should be unlawful for any person to establish or carry on such business within certain designated limits of the city, without first having obtained prescribed certificates from the health officer and the Board of Fire Wardens. Its fourth section declares that “no person owning or employed in a public laundry, or wash-house, within the prescribed limits, shall wash or iron clothes within the hours of ten in the evening and six in the morning, or on any portion of Sunday.” The fifth provides that no person engaged in the laundry business, within the limits, shall permit any one to suffer from an infectious or contagious disease to lodge, sleep, or remain on the premises. Violation of the ordinance is made a misdemeanor punishable by fine or imprisonment, or both. Francis Barbier was convicted, under the fourth section, of washing and ironing clothes between ten o’clock at night and six in the morning. He was sentenced to jail for five days. He obtained from the Superior Court a writ of habeas corpus, and on the hearing claimed that the fourth section of the ordinance was in violation of the fourteenth amendment to the Federal Constitution, and also of certain sections of the State Constitution. The grounds on which this contention was based were: that the section discriminates between the class of laborers engaged in the laundry business and those engaged in other kinds of business; that it discriminates between laborers beyond the designated limits and those within them; that it deprives the petitioner of the right to labor, and, as a necessary consequence, of the right to acquire property; that it is not within the power of the Board of Supervisors of the City and County of San Francisco; and that it is unreasonable in its requirements. The Superior Court overruled these objections and dismissed the writ.

The case was appealed to the United States Supreme Court. In an opinion delivered Jan. 5, 1885, that tribunal held that it had no authority to pass upon the questions raised under the State Constitution, that its jurisdiction was limited to a consideration of the Federal question, whether the fourth section of the ordinance was in conflict with the fourteenth amendment. It decided that on this point the ordinance was constitutional. The reasons concluded were thus set forth in the opinion of the Court, prepared by Justice Field:

The fourth section, so far as it is involved in this case before the police judge, was simply a provision to carry on the washing and ironing of clothes in laundries and wash-houses, within certain prescribed limits of the city and county, from ten at night until six o’clock in the morning of the following day. The prohibition against labor on Sunday is not involved. The provision is purely a police regulation within the competency of any munificent property of the ordinary powers belonging to the municipal bodies. And it would be an extraordinary thing in the authority of a municipality, if a Federal law could undertake to supersede such regulations. It may be a necessary measure of precaution composed largely of wooden buildings like San Francisco, that occupations in which fires are required, should cease after certain hours until the following morning; and of the necessity of such regulations the municipal bodies are, if we may believe the judges; at least any correction of their judgment can come only from State legislatures, not State tribunals.

The same municipal authority which by the existence of labor must necessarily prescribe the limits within which it shall be enforced, is the limit in a city, within which wooden houses can not be constructed. There is no tardy crimination against any one within the prescribed limits by such regulations. There is no regulation under consideration. The provision limits within which the business can not proceed on without the certificates of the health officer and Board of Fire Wardens is merely a design to have the portion of the city in which the press measures against fire and to secure proper means for it to be taken for the public health and safety. No legislation discriminating against any class or persons engaged in the same business with treated alike, are subject to the same restrictions are entitled to the same privileges under similar conditions.

The fourteenth amendment, in declaring that no State "shall deprive any person of life, liberty or property without due process of law, nor deprive any person within its jurisdiction of the equal protection of the laws," undoubtedly intended not only that there should be no arbitrary deprivation of life or property, but also that the process for protecting and securing these rights should be given to all in circumstances in the enjoyment of their personal rights and property; that all persons should be equally entitled to pursure their happiness and acquire property; that they should have like access to the courts of the State for the protection of their persons and property, the prevention and reparation of wrongs, and the enforcement of contracts; and in the administration of criminal justice no, or higher punishment should be imposed on any one except as applied to the same person others under like circumstances; and neither burdeons should be laid upon one than others in the same calling and condition, and the administration of criminal justice no or higher punishments should be imposed on three (as is prescribed to all for like behavior but neither the amendment—broad and comprehensive as it is — the amendment in the amendment, was to operate to interfere with the power of the State, as well as its power to prescribe regulations to promote the health, peace, morals, education, and good order of the people, and to legislate so as to create the industries of the State, develop its resources, and add to its wealth and prosperity. From the necessities of society, legislation of a specific kind, having these objects in view, must often in certain districts, such as for draining marshes, irrigating arid plains. Special burdens;
LAW, CONSTITUTIONAL.

y for general benefits—for supplying water, gas, lines, lighting districts, cleaning streets, parks, and many other objects. Regulations on, discriminating against some and favoring others, are prohibited.; but legislation which, in carrying out a public purpose, is limited in its operation to the sphere of its operation it affects alike all similarly situated, is not within the amendment.

The execution of admitted powers unnecessary for the purpose of which they are exercised, and excessive, is not a discrimination, and if no discrimination by the State is within the power of the State; but is remedied only by the State. In the case of the provisions requiring certificates from the Board of Fire Wardens and the Board of Fire Wardens may, in instances, be unnecessary, and the charges to meet the conditions prescribed may be some; but, as we have said, this is a matter for the Board of Fire Wardens and the Board of the municipality in the execution of the police powers, and not a violation of any right of the individual.

The Tenement-House Cigar Law.—One of the most important of recent opinions on the power of the police power of States was rendered Jan. 20, 1883, by the New York Court of Appeals—the highest court of the State—holding that a tenement-house cigar case, in which it was held unconstitutional, the police power passed by the State in the preceding Statute was entitled "An act to secure the public interest by prohibiting the sale of cigars and preparation of tobacco in any tenement-house in New York city and Brooklyn," was the case against a tenement-house. The law also regulated the knowledge, and that once becomes a criminal in consequence of another's act. It is plain, therefore, that this law interferes with the right to be followed by the owner or lessee of a tenement-house, who is a cigar-maker, and gives him the application of his industry and the disposition of his labor, and thus, in a strictly legitimate sense, it arbitrarily deprives him of his property and of some portion of his personal liberty. The constitutional guarantee that no person shall be deprived of his property may be thus violated without the physical taking of property for public or private use. If the Legislature has the power under the Constitution to prohibit the prosecution of one lawful trade in a tenement-house, then it may prevent the prosecution of all trades therein. So, too, one may be deprived of his property and his constitutional right thereto be violated without the actual imprisonment or restraint of his person. All laws which impair or trammel these rights, which limit one in the choice of his trade or his profession, or confine him to work or live in a specified locality, or exclude him from his house or restrain his otherwise lawful movements (except in police regulations), are infringements on his fundamental rights of liberty.

Of the claim that the Legislature can pass such an act in the exercise of the police power of a sovereign State, the Court says: "Under
the police power the conduct of an individual and the use of property may be regulated so as to interfere to some extent with the freedom of the one and the enjoyment of the other; and, in cases of great emergency, property may be taken and destroyed without compensation, and without what is commonly called due process of law. The limit of the power can not be accurately defined, and the courts have not been able or willing definitively to circumscribe it. But the power, however broad and extensive, is not above the Constitution. When it speaks, its voice must be heeded. It furnishes the supreme law, and, so far as it imposes restraints, the police power must be exercised in subordination thereto. If this were otherwise, the power of the Legislature would be practically without limitation; in the assumed exercise of the police power in the interest of the health, the welfare, or the safety of the public, every right of the citizen might be invaded and every constitutional barrier swept away. Generally it is for the Legislature to determine what laws and regulations are needed to protect the public health and secure the public comfort and safety; and while its measures are calculated, intended, convenient, and appropriate to accomplish the ends, the exercise of its discretion is subject to review of the courts. If it passes an act ostensibly for the public health, and thereby destroys or takes away the property of a citizen or interferes with his personal liberty, it is for the courts to scrutinize the act and see whether it really relates to and is convenient and appropriate to promote public health."

In considering the relation of the Tenement-House Cigar Act to the public health, the Court says that the law deals mainly with the preparation of tobacco and the manufacture of cigars, and its purpose obviously was to regulate them. Tobacco is used in some form by a large majority of the people in this State, and its manufacture into cigars is permitted without any hindrance except for revenue purposes in all civilized lands. The opinion then proceeds as follows:

"The law has never been said, so far as we can learn, and it was not affirmed in the argument before us, that its preparation and manufacture into cigars were dangerous to the public health. We are not aware, and are not able to learn, that tobacco is even injurious to the health of those who deal in it, or are engaged in its production or manufacture. We certainly know enough about it to be sure that its manipulation in one room can produce no harm to the health of the occupants of other rooms in the same house. To justify this law it would not be sufficient that the use of tobacco may be injurious to some persons, or that its manipulation may be injurious to those who are engaged in its preparation, but it would have to be injurious to the public health. This law was not intended to protect the health of those engaged in cigar-making, as they are allowed to manufacture cigars everywhere except in the forbidden tenement-houses. It can not be conceived how the cigar-maker is to be improved in his health or his morals by forcing him from his home and its haltered associations and beneficent influences to ply his trade elsewhere. It was not intended to protect the health of that portion of the public not residing in the forbidden tenement-houses, as cigars are allowed to be manufactured in private houses, in large factories and shops in the two crowded cities, and in all the cities of the States, or confined it to a single city or town, or have placed under a similar ban the trade of a baker, of a tailor, of a shoemaker, of a wood-carver, or of any other of the innocent trade carried on by artisans in their own homes. The power would have been the same, and its exercise, so far as it concerns fundamental constitutional rights, could have been justified by the same arguments. Such legislation may invade one class of rights to-day and another to-morrow, and if it can be sanctioned under the Constitution, while far removed in time, we shall not be far away in practical statesmanship from those ages when governmental prefects supervised the building of houses, the raising of cattle, the sowing of seed and reaping the grain, and all governmental ordinances regulated the movements and labor of artisans, the rate of wages, the price of food, the diet and clothing of the people, and a large range of other affairs, long since, in all civilized lands, regarded as outside of governmental functions. When a health law is challenged in the courts as unconstitutional, the ground is the arbitrary interference with personal liberty and private property without due process of law, the court must be able to see that it has, at least in fact, some relation to the public health, that the public health is the end actually aimed at, and that it is appropriate and adapted to that end. This we have not been able to see in this law, and we must, therefore, pronounce it unconstitutional and void.

Employers' Liability.—Though not on a question of constitutional law, one of the most important opinions rendered by the United States Supreme Court during the year was announced December 8, touching the liability of employers for death or injury caused to one employed by the negligence of another. The law on this point has not been fixed in the courts, either in the United States or in England. But in both countries there has been a strong current of judicial authorities recognizing and affirming the principle that an employer, while liable to a stranger, is exempt from the responsibility of his own servants for injuries caused by the negligence of an employé. Thus, when any passengers or persons not in the company's service are killed or injured by a railroad accident, due to negligence on the part of the road's servants, the corporation is liable in damages; but, if any of its own employés are killed or injured, it is not liable if the accident resulted from the negligence of a follow-servant. This distinction has been based on the theory that every employé must be presumed voluntarily to accept the ordinary risks of the service that he undertakes, and that his compensation is fixed with that end in view, while no such risk is, it is claimed, assumed by a passenger. It is further contended that the company's liability to passengers is created by an implied contract to carry them safely, which
waunee, and St. Paul Railway Company. The
plaintiff was an engineer on a freight-train,
and had been injured by a collision with a
gravel-train, caused by the negligence of
the conductors on the two trains. The court held
that the company was liable. It based its de-
cision on the ground that the engineer and
conductors, though employees of the same com-
pany, were not fellow-servants. The princi-
pies that it affirmed will impose an impor-
tant limitation upon the prevalent doctrine
of the courts, relating to the liability of em-
ployers. The opinion was written by Judge
Field. The rule laid down and the reasons for
it appear in the following passage:

It is not essential to the decision of the present con-
traversy to lay down a rule which would relieve
in all cases, what is to be deemed a common employment,
even if it were possible to do so.

There is, in our judgment, a clear distinction to be
made, in their relation to their common principal, be-
tween servants of a corporation, exercising no super-
vision over others engaged with them in the same em-
ployment, and agents of the corporation, clothed with
the control and management of a distinct department,
in which their duty is entirely that of direction and
superintendence. A conductor, having the entire con-
trol and management of a railway train, occupies a
very different position from the brakeman, the por-
ters, and other subsidiaries employed. He is in fact
and should be treated as the personal representative
of the corporation, for whose negligence it is respon-
sible to subordinate servants. This view of his relation
to the corporation seems to us a reasonable and just
one, and it will insure more care in the selection and
engagement of such agents, and thus give greater security to the serv-
ants engaged under him in an employment requiring
the utmost vigilance on their part, and prompt and
unhesitating obedience to his orders. The rule which
applies to such agents of one railway corporation must
apply to all, and many corporations operate sev-
eral trains over hundreds of miles at great distances
apart, each being under the control and direction of
a conductor specially appointed for its management.

We know from the manner in which railways are op-
erated, that, subject to the general rules and orders of
the directors of the companies, the conductor has en-
tire control and management of the train to which he
is assigned. He directs when it shall start, at what
speed it shall run, at what stations it shall stop, and
for what length of time, and everything essential to its
successful movements, and all persons employed on
it are subject to his orders. In no proper sense of the
words is he a fellow-servant with the fireman, the
brakeman, the porters, and the engineer. The latter
are fellow-servants in the running of the train under
his direction, who, as to them and the train, stands in
the place of and represents the corporation. As ob-
served by Mr. Wharton, in his valuable treatise on the
"Laws of Negligence": "It has sometimes been said
that a corporation is obliged to act always by servants,
and that it is unjust to impute to its personal negligence in
cases where it is impossible for it to be negligent
personally. But if this be true, it would relieve cor-
porations from all liability to servants. The true view
is, that as corporations can act only through superin-
tending officers, the negligence of those officers with
respect to other servants are the negligences of the
corporation." (§ 233 a.)

There are decisions in the courts of other States, more
or less in conformity with those cited from Ohio
and Kentucky, rejecting or limiting to a greater or less
extent the master's exemption from liability to a serv-
ant for the negligent conduct of his fellows. We agree
with them in holding—and the present case requires
no further decision—that the conductor of a railway
train, who commands its movements, directs when it

A
shall start, at what stations it shall stop, at what speed it shall run, and has the general management of it, and control over the persons employed upon it, represents the company, and therefore that for injuries resulting from his negligent acts the company is responsible. If such a conductor does not represent the company, then the train is operated without any representative of its owner.

From this opinion four of the nine justices—Bradley, Matthews, Gray, and Blatchford—dissented. "We think," they said, "that the conductor of the railroad train in this case was a fellow-servant of the railroad company with the other employees on the train. We think that to hold otherwise would be to break down the long-established rule with regard to the exemption from responsibility of employers for injuries to their servants by the negligence of their fellow-servants."

In 1890 an act was passed by Parliament in England "to extend and regulate the liability of employers to make compensation for personal injuries suffered by workmen in their service." It does not set aside entirely the rule that has grown up in the courts, but in certain specified cases it abolishes the distinction between a workman and a stranger by making employers liable to both on equal terms. Efforts to secure similar legislation have been made in New York, Massachusetts, and some other States, but without success.

JUICE. See DAVOS, NEW.

LIQUEFACTION OF GASES. The experiments of M.M. Caillélet and Raoul Pictet on the liquefaction of gases, and the apparatus they employed, were described in the "Annual Cyclopaedia" for 1877. The processes have since been much improved, the apparatus simplified, and more complete results obtained. M. Caillélet, having failed to liquefy hydrogen under a pressure of one thousand atmospheres, concluded that the result could not be accomplished by pressure alone, and was led to the discovery of a fundamental property of gases that had been overlooked. Andrews, experimenting on the compression of carbonic acid at 18° C., found that the rate of condensation increased more rapidly than Mariotte's law demanded, and progressively; and that, at fifty atmospheres, the gas suddenly became a distinct liquid. At 21° C. the same result was produced more slowly, and seemed to be accompanied by a kind of preparatory stage of more rapid condensation from some time before the beginning of the change. At 32° C. the signs of preparation were more marked, but instead of a distinct liquid, only wavy mobile striss appeared on the sides of the vessel; while at higher temperatures there were neither striss nor liquefaction. The temperature of 33° C., therefore, marks a division between the temperatures which permit and those which prevent liquefaction, or is the critical point, for carbonic acid. While a liquid usually has a greater density than its vapor, it may be heated in a closed vessel till it becomes as rare, or rarer. At the same time the vapor accumulating over it becomes more dense. When the densities of the two have become the same, the line of separation between them will be obliterated; they will be no longer distinguishable, and they may be described as being in the gaso-liquid state. All previous attempts to liquefy air had failed, because they had been made at temperatures above the critical point, while the matter was still in the gaso-liquid state. Caillélet and Pictet obtained their success by reducing the temperature to below the critical point and applying extreme pressure. The liquefaction was, however, still not complete, for the gases had not yet been collected in a static condition and separated from their vapors by the clearly defined concave surface which is called a meniscus. A more powerful refrigerant than had yet been applied was found in the hydrocarbon ethylene, which when liquefied boils at —103° C. M.M. Wroblewski and Olszewski, of Cracow, with M. Caillélet's apparatus, in April, 1883, by the ebullition of liquid ethylene obtained a temperature of —150° C., and reduced oxygen, previously compressed, to a fixed liquid, with a clearly defined meniscus. Its critical point was marked at —113° C., and it boiled rapidly at —186° C. Nitrogen was liquefied, under a pressure of thirty-six atmospheres, at —146° C. M. Caillélet simplified the process by introducing formene, or marsh-gas, as a refrigerant which, although less easily liquefied than ethylene, will produce by its ebullition in the air, without the necessity of creating a vacuum, a temperature of —160° C., under which both gases are liquefied. In July, 1884, M. Olszewski announced that he had produced by the ebullition of liquid nitrogen in a vacuum a tem-
LITERATURE, AMERICAN, IN 1884. (Fiction.)

re of —213° C., and obtained liquid hydrogen. Contrary to the expectations founded on the ordinary metallic behavior of hydrogen as a liquid would present the appearance of molten metal like mercury, it exhibited a gaseous behavior and the transparency of drocarbons.

James Dewar, of London, has pointed out that he suggested the use of marsh-gas before the experiments of M. Cailliet and his colleague, having proposed it as a convenient substance for producing an exceeding-temperature, in a communication made to the British Association meeting of 1883.

Dewar has devised an apparatus for liquefaction, which he recommends as convenient for the purposes of lecture dem- onstration, and as allowing the condensation of very large quantities of liquid oxygen. It is shown in the engraving. The oxy- gen reservoir, O, is made of iron, and contains gas compressed to 150 atmospheres. A is the stop-cock for regulating the flow of the gas in the glass tube F; the tube which connects the gas-reservoir with the glass tube F is shown at 1; while the pressure-mantleometer. The air-pump is marked at 2. H is the point of attachment leading to the air-pump. The glass tube G, which contains the liquid ethylidic carbonic acid, or liquid nitrous oxide, is to be boiled in vacuo, is placed middle of a larger tube, and has holes at E, in the upper part, so that the cool air in their course to the air-pump are to pass around the outside of the vessel to guard it from external radiation. The water valve of the outer cylinder is covered with pieces of chlorides of calcium shown at K. The stop-cock B is used for collecting the gas from the fluid and condensed vapor. The tube is five millimeters in diameter and about three inches in the walls, and when filled with the liquid, has a volume of at least 1/6 centimeter. This is sufficient to show the adhesion of the fluid at ordinary pressure, demonstrate the great reduction of tension attendant on the change of state. The condensation of oxygen may also be produced by solidification of carbonic acid or liquefied oxygen, substances which can be abundantly in their gaseous condition, a therefore more convenient in practice than palm, which is troublesome to make.

NATURE, AMERICAN, IN 1884. The number of books published in the United States in 1884 was 16,554, which amounts to about 20 per cent. In quality and value the product of the American publishers is not so fine as to any marked degree of pride in any one class, the book or appearance of American book publishing. The energy of the publisher has been directed both to cheap reprints and new and revised editions of old books. Many distinguished writers, both in England and the United States, have "gone over to the majority," and eminent living authors have hardly shown the same productiveness as in former years. In the highest lines of intellectual work, science and mental and moral philosophy, the record is the least encouraging, though the year was not without its notable productions. Poetry is represented by a few names only that the general reader will recognize. History and travel are represented by inferiority both in amount and quality; while in biography and political and social science there was a manifest advance not only in number of books issued but in character, several of them having been notably good and likely to prove permanent additions to standard literature. The depart- ments in which America was specially prolific were fiction, theology, law, medical science, juvenile literature, and educational textbooks. It goes without saying that the bulk of the new books of 1884, like that of preceding years, was of ephemeral value. Activity was displayed by publishers rather than by authors, if we are to be excused from the latter class mere compilers and editors and strictly professional men.

We give the total number of books published during the year 1884 in the United States, classified and compared with those of 1883, in the following summary taken from the "Publishers' Weekly," which probably closely approximates correctness. This list, it may be added, includes reprints of foreign books, as well as works by American authors, but an attempt will be made to distinguish carefully between these in the brief record and comment that will be found in this article:

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Total: 8,481

It will be seen from this list that the increase in number of books published was 607, the only decrease being in the divisions of medical science, hygiene, etc., in description and travel, in history, and in humor and satire.

Fiction.—Among the novels of the year, perhaps "Dr. Sevier," by G. W. Cable, may be given a leading place. It is characterized by the same quaint delineations of creole life and character that made his previous books so noticeable. Two novels were written by F.
Marion Crawford, "A Roman Singer" and "An American Politician." The former was a striking love-story freshly treated, but in the latter the author tries his skill with much less successful hand in describing and satirizing political life and methods in the United States. Charles Egbert Craddock (the pen-name of Miss Mary N. Murfree) became widely known through the story, "Where the Battle Was Fought," with its realistic descriptions of mountain-life and peculiar Southern types. Mrs. Helen Hunt Jackson's "Ramona" was a picture of life in southern California, noticeable as a protest against the treatment of the Indian. Miss Maude Howe's "The San Rosario Ranch," was a less tragic picture of rural Californian life. The "Fate of Mansfield Humphreys," by Richard Grant White, was a bright satire on English misconception of Americans; and George Parsons Lathrop produced a spirited picture of Newport fashionable life in "Newport." Julia Hawthorne was represented by "Beatrix Randolph," "Archibald Malmaison," and "Noble Blood," none of which was particularly noticeable. Among the novels of special merit was "The Making of a Man," a posthumous work by Rev. Wm. M. Baker, a book of more than ordinary cleverness. As even more noticeable than this may be mentioned Howe's "Story of a Country Town," one of the most successful "first" books of recent years, which was distinguished by its vivid realism and power to make ordinary things attractive. Edgar Fawcett's society novels, "The Adventures of a Widow" and "Tinkling Cymbals," were labor of interest, though burdened with a laborious style and somewhat forced satire. Another of this author's novels, "Rutherford," was reprinted from an earlier edition. Miss Sara Orne Jewett's "Country Doctor" attracted deserved attention by its nice characterization and delicate touch. A novel of great length by D. F. Forster was issued in serial monthly parts, the revival of an old form made famous by Dickens and other writers of half a century since. This was entitled "Allan Dare and Robert Le Diable" and was of a very round and conventional character. D. F. Forster was represented in "Nature's Serial Story" and "A Young Girl's Wooing." Noticeable work in fiction was done by Dr. William A. Hammond, the well-known specialist in nerve-diseases, and by Dr. Weir Mitchell. The former, in "La!" and "Doctor Grattan," not only found an effective vehicle for physiological theories, but succeeded in telling striking stories. Dr. Mitchell's "In War Time" made a distinct impression as a strong exhibition of character analysis. N. C. Kouss followed up the success of "Arius the Libyan" with "Dorcas," a story of early Christian life in Rome. A clever story of Southern life in the early part of the century was told in Johnson's "Old Mark Langton"; and another still more noticeable delineation of old Southern life was given in "The Entailed Hat," by George Alfred Townsend, the scene being laid in Maryland and Virginia, and turning largely on the kidnapping of negroes. Additions to the "Oldest Series" were "Almost a Duchess" and "Diane Corey," both of them tales of French life. The "American Novel Series" was begun early in the present year, and included several works of interest (the best of them being the first two named): Arlo Bates's "The Pagana," Miss Compton's "Esther," "A Letter-Day Saint," "Stratford by the Sea," and "Among the Chosen." Robert Grant's novel, "An Average Man," attracted some attention, and J. S. of Dale justified an earlier success, "Guernsdale," in "The Crimes of Henry Vane." "Vestigia," by Miss Julia Fletcher, was a story of recent Italian life, marked by vivid description and good delineation of character. Other works of some interest were "Phoebe," by the author of "Rutledge"; Miss Johnson's "Vainness of Tippy," Mrs. Kirk's "A Midsummer Madness," Miss Townsend's "But a Philistine," Miss Amanda Douglass's "Out of the Wreck," Edward Everett Hale's "Fortune of Rachel," Piercy's "A Matter of Taste," and Orpen C. Kerr's story of Borneo under the regime of Rajah Brooks, entitled "There was once a Man." Many volumes of short stories were issued, such collections having been the fashion with publishers. These were Henry James's "Tales of Three Cities," W. H. Bishop's "Choy Susan," Bret Harte's "On the Frontier," Joel Chandler Harris's "Wings," G. P. Lathrop's "True," Deming's "Tomkins," Miss Sally McLean's "Some Other Folks," Charles Egbert Craddock's "In the Tennessee Mountains," Frank Stockton's "The Lady or the Tiger," Sherwood Bonner's "Swane River Stories," and eight volumes of "Stories by American Authors," the latter being the supposed best short stories published in the American Press during the last twenty years. Among American reprints of English books there were a good many striking novels. Those specially worthy of mention were William Black's "Judith Shakespeare," and "A Character," Anthony Trollope's "Arms and the Man," "The Love," and Charles Reade's "A Perilous Secret," both posthumous works; Wilkie Collins's "I Say No"; Blackmore's "Tommy Umore," a parliamentary satire; Florence Ward's (the hitherto unknown writer) "Homes on the March," "At the World's Mercy," and "Del-dee," all of them books of strong sensational interest and of large sale; Hugh Conway's "Called Back" and "Dark Days," the former of which in popularity was one of the leading novels of the year, both published in the "Leisure Hour Series"; Jessie Fothergill's "Perl," published in the same series; Mrs. L. B. Walford's "The Baby's Grandmother," one of the most charming novels of recent years; "The Millionaire," published anonymously, but afterward acknowledged by Louis J. Ednings, the Anglo-American journalist, the hero
LITERATURE, AMERICAN, IN 1884. (History.)

This is a line of literary work and research that is rarely other than well represented each year by the works of American authors. There were not a few works of prominence in the year 1884. Francis Parkman’s “Montcalm and Wolfe” sustains the magnificent style and spirited elevation that have made this writer’s works so delightful. The present completes the story of the French struggle for domination in North America, one of the most stirring and dramatic episodes in modern history. One would look far to find a more absorbing narrative than that which flows on under Parkman’s pen. Another brilliant historical work was Eugene Schuyler’s “Peter the Great,” a biographical study in form, but more properly to be classed as history, as it relates the epic of a nation’s civilization. Mr. Schuyler’s long residence in Russia and the East, and preparations for this work, have borne excellent fruit in what will remain an American classic. In the exciting and interesting section of modern European history treated by Mr. Schuyler, he has found a congenial field for a mind well fitted for the task, that of writing an exhaustive history of the peoples, ancient and modern, of the western region of our continent from Behring Strait to the Isthmus of Panama, is being pressed with vigor by Hubert Howe Bancroft. The new revised edition of George Bancroft’s “History of the United States of America,” a work that has become a classic, reached its third, fourth, and fifth volumes during the year, and it is to be presumed that the final touches and improvements of the venerable author have been added. One of the most important books issued in 1884 was Francis Parkman’s “Montcalm and Wolfe.” This constitutes the seventh volume of “France and England in North America.” It is the closing chapter in the brilliant colonial episode of France in the New World, and Mr. Parkman presents it with that clear-cut vigor and piquerness of treatment which have emblazoned his historical studies in such an attractive form, and given him an exalted place in our literary Pantheon. A new and interesting line of studies is pursued by E. J. Lowell in “The Hessians.” He comes boldly to the rescue of the fair fame of the German auxiliaries of Great Britain during our War of Independence. In pursuing his object, he appears to have neglected no means of arriving at the exact facts, and his conclusions would seem to indicate sincerity and good judgment. To the many histories of that fascinating epoch in the evolution of European civilization, the period of the Thirty Years’ War, a fresh contribution has been added by the late United States Min-
LITERATURE, AMERICAN, IN 1884. (History.)

istor to Sweden, John L. Stephens. His history of Gustavus Adolphus, one of the greatest of European heroes, is really a history of the times that gave him birth and opportunity. It can hardly be said that the author has cast any fresh light on the life and achievements of the great Swedish king, but he presents a very clear and readable record of his career and of his influence as a factor in European politics. The occasion of the book's being was the author's long residence in Sweden, and the scholarly reader is somewhat disappointed that the book does not show more palpable fruits of original research. An addition to the literature of the late civil war was made in Col. Robinson's "Military Operations of General Beauregard in the War between the States, 1861-65." The author was a personal friend and staff-officer of Gen. Beauregard's, and presumably writes from the stand-point of friendship, but this strong coloring does not give enough bias to prevent the author from making an important contribution to a subject the literature of which is already becoming enormous. Other war histories, from the Federal stand-point, are Gen. James F. Eddy's "Operations of the Army under Buell," and "McDowell and Tyler in the Campaign of Bull Run," while Stevenson's "Battle of Stone River" presents a picture of a battle and the campaign that preceded it worthy of the student's attention as a hitherto underrated portion of the great civil conflict. The "American Commonwealth" series has justly been regarded as one of the most important ventures of recent years. Each State is to some extent a community by itself, and with its colonial or territorial records furnishes in many cases a curious and individual history differing widely from its fellows, however similar it may now be in its nominal forms. The additions for 1883 include Shaker and Brownian Maryland. The latter is specially worthy of the student's attention in its account of the early institutions of Maryland, and their yet palpable influence on local habits. Young's "History of the Ancient Empires of the East," a work of great value, which embodied all the most recent fruits of scholarly research and criticism. The important revisions of opinion that extensive discoveries in archaeology and philology have caused made a restatement necessary. One of the most important features of the book is the large place that the author gives to the empire of the Hittites, to which he ascribes an immense relative importance in the ancient civilization of the East. "Prehistoric America," by Marquis de Nadaillac, a French author, translated and published in this country, is a work of careful and enthusiastic scholarship which entitles it to be called one of the most important books of the year. It is a brilliant yet sound exposition of all the most trustworthy results of archaeological labors in America. In Prof. Gindely's "Thirty Years' War" is found the most able, comprehensive, and perhaps accurate estimate ever made of the causes, course, and consequences of the events that immediately followed the German Reformation. The volumes are profusely illustrated with maps and engravings and are worthy to be considered a final authority. Other important German works in history, translated and published in English were the first part ("The Oldest Historical Group of Nations and the Greeks") of Leopold von Ranke's "Universal History," and Ploetz's "Epitome of Ancient, Modern, and Medieval History." Lady Jackson added to her other volumes on French history "The Court of the Tulleries," which possesses the same quality of bright and picturesque narrative as its pre-
LITERATURE, AMERICAN, IN 1884. (Biography.)

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sors, but it is rather a work for young
ers, and those who need a strong spice of
ment added to information, than a serious
on to literature.

Bios.—The additions to this fascinating
h of literature were numerous and nota-
1884. "The Life and Letters of Bayard
" edited by his wife, was a work that
deserved interest and attention. The
nt of the biography, though not ranking
the foremost men of genius, yet, by
reat versatility, industry, ambition, and
ured a high place in American letters.
as greatly beloved as a man, and the rec-
f his career has a distinct value as an ad-
able account of steady activity as poet, nov-
journalist, and traveler. His diplomatic
ence was too brief to enter very largely
be important features of his life. The book
partment which, on the whole, attracted
reatest attention, and that not altogether
avorable causes, was Julian Hawthorne's
aniel Hawthorne and his Wife." A good
mote comment was called out by the
rate of the writer in quoting his father's
ns concerning several well-known liter-
ersonages, especially Margaret Fuller. It
ought that the occasional bitterness of
er Hawthorne's judgment was not neces-
be made known in order that the pub-
ld be able to understand what is really
owing about him. In other respects, 
ography was noticeably good in plan
ction. Two excellent legal biogra-
of more than ordinary value and inter-
tere contributed in Nielson's "Memoirs
us Choate," and Shields's "Sergeant S.
, both records of extraordinarily brill-
men and able lawyers, who occupied a
hare of public attention about the same
one in the North, the other in the South.
ife of Marcus Aurelius Antoninus," writ-
 the first time in a spirit of real scholar-
inner. The death of Paul Barrow, a
 young man recently graduated, ac-
at share of approval from literary judges,
ay be considered altogether an unusual
book in a line of serious writing. The
s to the "American Men of Letters"
were two, both of them important.
Wendell Holmes, as an intimate friend
erson, was admirably equipped to be his
p, and brought to his work a genial
ving yet critical spirit. While he dis-
ted many of Emerson's worshipers, he
obably given the most truthful and ju-
estimate yet taken of his place and in-
se as writer and thinker. Thomas Went-
 Higgins's "Margaret Fuller Osoli," a
same series, is an interesting though
what exaggerated estimate of a woman
her time, filled a highly prominent
 the minds of literary and other think-
. The American Statesmen Se-
with "James Madison," by
Howard Gay, and "John Adams," by
John T. Morse, Jr. Both are sound and well-
considered books, interesting alike from the
characters of the men themselves, and from
their relations to the important events and
times in which they lived and moved. In the
Habberton produced a humorous "Life of
George Washington," which was cleverly ex-
ecuted, in a comic vein, without too much
 trenching on the reverence which it is the
birthright of every properly constituted Ameri-
can to feel for the "Father of his Country."
Dr. Marion Sims's "Story of my Life" was
the record of a great career, simply and mod-
estly told, and made interesting, not only to
professional men, but to the general reader.
Probably few fully understand how great a
benefactor to the human race this remarkably
gifted inventive surgeon was, unless they have
read this autobiography. Gen. E. D. Town-
end, First Assistant Adjutant-General during
the war, was the author of "Anecdotes of the
Civil War," an exceedingly readable collection
of incidents, descriptions, sketches, and stories,
many of them very fresh, concerning the trou-
bled times, 1861-1865. A book, in a some-
what similar vein, though treated more elabo-
rateIy, was "Fifty Years' Observations of Men
and Events," by Gen. Erasmus D. Hoyes, a very
large portion of which related to the civil war.
One of the great men, of whom people never
tire of hearing and reading, was again made
the subject of a biography in W. O. Stoddard's
"Life of Abraham Lincoln," a book worthy to
rank among the best accounts of the character
and career of, perhaps, the most unique and
picturesque personage in American history.
Two readable additions to colonial and border
history were made in "The Diary and Letters
of Thomas Hutchinson," and Durrett's "John
Filson." Lives of James and Lucretia Mott,
and of Eliza P. Gurney, distinguished as phi-
anthropists, were written by relatives. A
brilliant young littérateur, Louis Henry Leila-
d, died, and Mr. Lincoln's sold-
dier's death in the late war, all too young for
his own fame and the good of American
letters, had his memory perpetuated in "A Life
of Theodore Winthrop," written by his sister.
J. Derby, an old New York publisher, gave a
series of pleasant memories of authors and
publishers in his "Fifty Years"; and Rev. Dr.
Hatfield, under the title of "Poets of the
Church," paid biographical tribute to the most
distinguished hymnologists. Col. C. Chaillé
Long, in his "Three Prophets," gave graphic
sketches of Arabi Bey, El Maahdi, and Gor-
don Pasha, the three most important figures
in the recent events in Egypt. Biographies of
Martin Luther, by Mead and Seiss, attracted
some attention. Under the title of "Captains
of Industry," James Parton collected a group
of those telling and readable sketches, origi-
nally published in the periodicals, of which he
is such a master. To the above must be added
the ephemeral biographies which always flour-
ished so rankly during presidential-election years.
J. Clark Redpath, Charles Wolcott Balstier, W. Ralston Balch, H. J. Ramsdell, Ben Perley Poore, and Russell H. Connell, glorified the virtues and public services of Blaine and Logan; while a similar service was bestowed on Cleveland and Hendricks by Deshler Welch, Chauncey F. Black, Pendleton King, William E. Dorshimer, and G. T. Ferris.

English biographical works reprinted in America included many noticeable books. First among these must be mentioned the concluding volume on Carlyle by James Anthony Froude, which covers his life in London from 1834 to his death in 1882, and, of course, includes the whole of his most important literary activity. The book is one of great interest, and gives us a revelation of Carlyle's literary and personal life, which leaves a sad feeling behind it in the bold revelation it makes of the weakness and selfishness of a man of genius. A very bright sketch of Luther was published by Mr. Froude the same year. A book inferior to none of recent years in interest of a widely varied character the public has found in the "Correspondence and Diaries of Right Hon. J. Wilson Croker." A prominent official, a man of great vigor both as writer and politician, the intimate of most of the distinguished men of his age, no recent book has been so full of entertaining matter, or thrown more light on English politics and statesmen for a period of nearly half a century. Croker had many strong enemies as well as warm friends, and his anecdotes and reminiscences, if often flavored with bitter malice, have a peculiarly racy flavor. James Payn's "Some Literary Recollections" and Edmund Yates's "Fifty Years of London Life" have also aroused considerable interest as vivid and lively portraits of literary and other public men during a more recent period. The "Life and Times of the Reverend Sydney Smith," by John Reid, is much more a biography than a picture of Sydney Smith; but the book is a very pleasing one, and like the three preceding works, in that it deals very largely in graphic pictures of the time in which the subject of the biography lived. The "Life of Reverend Frederick Denison Maurice," one of the most eminent of English churchmen, written by his son, Col. Maurice, yields to no work of the year in interest. Mr. Maurice exerted by his character and teaching an influence on the religious life of his day of a deep and far-reaching character. The life of Maurice had significance rather from its spiritual importance than from any external relation. A pleasant book is found in "Jane Austen's Letters," making a lively memento of a woman whose genius was an English classic. To the "English Men of Letters Series" were added Courthope's "Addison," Claude's "Bacon," and H. D. Traill's "Coleridge." The last-named book was of unusual interest, and a very suggestive and able monograph, Flint's "Vico" was added to the "Philosophical Classics Series"; the new volume of the "Great Musician Series" was Rockstro's "Mendelssohn," a very well planned and executed book; and in "Illustrated Biographies of Great Artists" we had Mottell's "Watteau," a painter better known to the few dilettanti and to connoisseurs than to the general world. The English additions to the "Famous Women Series," which is of an international character, were Mrs. Fitman's "Life of Elizabeth Fry," Vernon Lee's "Countess of Albany," and Miss Rennell's "Mary Wollstonecraft." Mrs. Fry's successful efforts to abolish the atrocities of English criminal law are well described by the author. The delineation of the conditions and characteristics of the time which produced the Italian dramatic poet, Vittorio Alfieri, by Vernon Lee, and her story of his strange relation with the wife and widow of Charles Edward, the Pretender, are very entertaining. The defense of Mary Wollstonecraft, wife of Godwin, the author of "Caleb Williams" and "Political Justice," and the mother of Shelley's wife, while it does not satisfy the judgment, yet largely palliates the errors of a woman who was at least as much sinned against as sinning.

Nohl's "Life of Liszt" was translated from the German as an addition to the "Biographies of Musicians." The large part taken in recent events in Egypt by Gordon Pasha prompts two books, one Archibald Forbes's "Chinese Gordon," the other, by Egmont Hake, "Gordon in Central Africa." The "Biographical Sketch and Letters of Alice, Grand Duchess of Hesse," by her sister, Princess Christian, and "More Leaves from the Journal of a Life in the Highlands from 1862 to 1882," by Queen Victoria, were both received with interest. A new volume of essays was issued by Max Muller under the title of "Biographical Essays," which gave sketches of several of the leading German scientists. The German Boswell of Prince Bismarck, Dr. Moritz Busch, in "Our Chancellor," furnished a very readable but epistolary account of a man who was translated into English. Henry Irving, the actor, was sketched by Joseph Hatton and Daly in books of some pretension, and Wolfe's "Sir Moses Montefiore" pictured the life of the Jewish centenarian and philanthropist in a most pleasant manner. Among the above works may be added Lord Ronald Gower's "Reminiscences," Samuel Smiles's "Men of Invention and Industry," Washburn's "Spanish Masters," Dobson's "Thomas Bewick and his Pupils," Bayle's "Richard Baxter," Anns Buckland's "Record of Ellen Watson," Haweis's "Musical Memories," Robertson's "John Bright," Hector Berlioz's "Autobiography," and Jean's "Creators of the Age of Steel," the two latter-named books being exceptionally interesting and well executed. Hector Berlioz shows that nature gave him as much talent for literature as it did for what he made the work of his life, music.

Travel—In the literature of travel there were not very many notable books, though the year was not altogether wanting in interesting works of this description. Melville's "In the Lena..."
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"Delta" is worthy of the first place as a well-written account of a tragic and sensational chapter in Arctic adventure. The adventures of De Long and his comrades were hardly less remarkable than those of the more recent Breese episode. Frederick A. Ober was the author of a graphic description of "Travels in Mexico and Life among the Mexicans." A somewhat lengthened visit in the land of the Aztecs and unusually keen powers of observation joined to furnish the material of what is not only an attractive but what appears to be a trustworthy book. George W. Cable, in his "Creoles of Louisiana," if this work can properly be called a book of travel, gives a careful picture of the French and Spanish residents of New Orleans, and the region of which it is the immediate center, as also an interesting sketch of colonial history. Mrs. Bianciarde is responsible for a collection of rare papers under the name of "At Home in Italy," and Mrs. Julia Borr writes pleasantly of Bermuda. Nourse's "American Explorations in Arctic Regions" is a compilation of the most interesting exploits of our countrymen in the Frozen Zone. Another rehearsal of the Arctic story was by McCormick, with a readable addition in the way of description of early feats of circumnavigation. W. D. Howells, in "Three Villages," gave a pleasant description of some New England townships, and illustrates anew the fact that the interest of things depends rather on what lies behind than in front of the eyes. Henry James gave similar studies of Old World life, marked by much finish of style, in his books "Portraits of Places" and "Little 'our in France." John Burroughs, in "Fresh Fields and Pasture New," dealt in a bright and pleasant way with English life, and W. Aikner contributed a very entertaining volume to the ever-swelling literature of the continent in "Rapid Ramblings" over Europe. Mr. Henry M. Field was the author of an interesting record of travel in Syria and Palestine under the name of "Among the Holy Hills."

The books reissued here from English and foreign sources offer a more attractive exhibit than those written by Americans. "John Bull and his Island," a vivacious and witty study of English life and people, by Max O'Rell, was one of the sensations of the year. Lady Brassey added to the literature of yachting adventure in a delightful volume, profusely illustrated, called "The Traders, the Tropics, and the Roaring Forties." The author is a born raveler, and has a knack of graphic and unaffected description which saves her readers from a single weary moment. Two other well-known Englishwomen also published books of travel. Miss Ida Darwin-Hardy related her impressions of North America in "Between Two Oceans"; Miss Gordon-Cumming, an indefatigable wanderer in strange places, wrote "In the Malaysies and Other."

MOUNTAIN ADVENTURE IN NEW ZEALAND had two denouements in Kerry-Nicholls' "King Country" and Green's "High Alps." Island-life in the Pacific was represented in Turner's "Samoa," and Johnston's "Camping among Cannibals." To the multifarious record of African travel were added H. H. Johnston's "The River Congo," a region now assuming an international importance; Little's "South Africa"; "The Transvaal," by E. V. C.; and Dr. Williams' "The Soudan." Other books worthy of mention were Amicia's "Holland and Its People," Barneby's "Life and Labor in the Far West," and Augustus C. Hare's studies of "Venice and Florence."

Poetry.—There is not very much to be said of the American production in this department of literary effort. In quantity the results have been great, in quality for the most part mediocre. The death of Longfellow, the diplomatic duties of James Russell Lowell, now for the good of literature happily released from official toil, and the silence of Mr. Whitman, have left the field to the younger poets. A fresh collection of Bayard Taylor's poems, under the name of "Melodies of Verse," with no new addition, however, and an illustrated selection from the more popular poems of Dr. Oliver Wendell Holmes, attracted the favor in which these poets are held. An interesting collection was given to the public of the "Poems of Sidney Lanier," many of which are exquisitely musical, edited with a memoir of the author, who was in many ways a singularly gifted man. H. J. Dunner's "Airs from Acrely" was the work of a graceful and dexterous hand, and Edgar Fawcett produced a new volume of verse under the title of "Later Poems." Miss Lucy Larcom's poems were issued in a new and complete edition, and Miss Phelps was represented in a thin volume, collected from her magazine and newspaper contributions. George Lunt's "Poems" was a collection of verse full of a quaint flavor, and Macy's "Legends and Lyrics" contained not a little good work. Of the large mass of amateur poetry issued, Clinton Scollard's "Pictures in Song" is alone worthy of note.

English poetry of note reissued here presents to us first of all Tennyson's powerful historical play of "Becket," which is distinguished by its strong dramatic characterization, though not fitted for the stage. "The Falcon and the Cup," by the same author, was also given to the world in book form. Robert Browning's poetic activity found outlet in "Fervishall's Fancies," full of Oriental color and subtle thought. Mr. Swinburne's new volume was "A Midsummer Holiday," and the book showed no falling off in the author's peculiar gifts of technical execution. It may be added that Mr. Richard Henry Stoddard edited a volume of "Selections from Swinburne" with excellent literary taste. Among the minor English poets were "Songs Unsun," by Lewis Morris; "Wild Voices," by Philip Bourke Marston; and "Sallades and Verses Vain," a charming collection.
of *vera de société*, by Andrew Lang. There was also a good collection of poems issued under the attractive title of *Red-Letter Poems by English Men and Women.* The above brief and meager record covers everything worthy of even passing mention.

**General Literature.**—Edgar Everett Salsus was the author of a study of "Balzac," the great French novelist, marked by nice insight and thorough mastery of his subject, and presenting a somewhat different view of the author of the *Comédie Humaine* from that generally held. Charles Godfrey Leland's volume of American folk-lore, "Algonquin Legends of New England," was not only attractively written, but was a valuable addition to comparative mythology. Oliver Bell Bunsen's "My House" was a graceful picture of an ideal country home and its surroundings; and Donald G. Mitchell's "Sheaf of Essays," bound together, showed this idol of a former generation in a light indicating that his hand had not lost its old cunning. Mrs. Emerson's "Indian Myths" and Gateshein's "Legends of the Creeks" were useful companion works to that of Mr. Leland named above. To those interested in Indian studies, the "Iroquois Book of Relics" and Dr. Britton's "Aboriginal American Authors" also recommend themselves. Baldwin's "Book Lover" was a pleasant little volume, and Adams's "Hand-Book of American Authors" was a fit companion to his "Hand-Book of British Authors," published last year. MacCullum's "Studies in High and Low German Literature" made a very convenient hand-book for the literary student, and a similar work was edited by Lafcadio Hearn under the name of "Stray Leaves from Stray Literatures." The closing volumes of the "Complete works of William Cullen Bryant," edited by Parke Godwin, included his prose writings, which of course are far less significant in the public mind than his poems.

In American reprints under this head, we find nothing of special value except George Eliot's "Essays and Leaves from a Note-Book," a collection of articles originally published in magazine books; Philip Gilbert Hamerton's "Human Intercourse," a wise and suggestive series of studies both genial and searching; Bain's "Practical Essays"; "The Enchiridion of Wit"; and Andrew Lang's "Custom and Myth."

**Science.**—The literary contributions to American science were not as many and noticeable as in the preceding year. John Fiske's "Excursions of an Evolutionist" was marked by the author's well-known characteristics of clear statement and suggestive ease. As indicated by the title, the book is made up of essays. His "Destiny of Man" was another publication in some sense complementing the preceding one, and entering into a study of the probabilities of the future of the race. The subject of evolution seems to have become the hinge on which leading scientific speculation swings.

Dr. Cotes was the author of an original and interesting speculation on life called "Biogen," President Alexander Winchell produced a series of intelligent and attractive papers well suited to strike the popular taste in his "Geological Excursions," and Prof. Shaler was responsible for a new and excellent text-book on "Geology." Meteorology was represented by Mr. Davis in a work entitled "Whirlwinds, Cyclones, and Tornadoes," and basmnet's "Earthquakes" treated a topic of general interest to intelligent readers, in the fact that such phenomena, among all those dangers which threaten humanity on the part of physical nature, are the most startling and dramatic. There were several books of what may be called familiar home science, peculiarly useful in the hints they give as to how easy it is to find matter of great interest and instruction in the things nearest our every-day life. These were Rev. Dr. McCook's "Tenants of an Old Farm," Denig's "Wyans of Nature and Life," and James's "A Naturalist's Rambles about Home," by Charles G. Abbott. The latter two books were executed in a peculiarly attractive vein, and well calculated to stimulate the minds and sharpen the eyes of readers. Baldwin's "New England Orchids" and James's "North American Mosses" collated important observations in departments of botany in which people would commonly be interested. Dr. Elliot Cotes published a new and revised edition of his "Key to North American Birds," which is recognized as a standard authority in ornithology. Among Government publications of more than ordinary interest were the "Annual Report of the United States Fish Commission" and the "Geological and Geographical Survey of the Territories." The second of the two parts of the latter gave a very full summary of the wonders of the Yellowstone valley, and both works issued were acknowledged by the scientific world abroad as worthy of the warmest commendation. It may be noticed that the U. S. Government publications in science stand at the head of official scientific reports throughout the world for the thoroughness with which they are executed and the valuable results obtained. Among scientific journals, too, the classed the concluding volume of "Appleton's Home-Books," published under the title of "Health at Home," J. Leonard Corning, M.D., was the author of an elaborate treatise on "Brain Exhaustion, with some Preliminary Considerations on Cerebral Dynamics." The results reached were drawn from direct clinical observation and deductions derived from physiology and experimental pathology. A valuable compend by Prof. Nathan Shapley called "Darwinism as stated by Darwin Himself" gives passages from the writings of the most celebrated of modern naturalists, which by systematic arrangement are made to present in the clearest light the order and scope of Darwin's argument as to the origin and evolution of animals and men. Not least valuable among the issues of the year were the two
bound annual volumes of "The Popular Science Monthly." An important new text-book was produced by Prof. John Trowbridge, of Harvard University, under the name of "The New Physics," being a manual of experimental study for advanced schools. Joseph Le Conte's "Compend of Geology" was the work of one of the best-known and most trustworthy scientific men in the country. A new work entitled "Elements of Zoology" was written by O. F. Holder and J. B. Holder, M. D., Curator of Zoology in the American Museum of Natural History in Central Park, New York. Attention may also be called to "The Elements of Chemistry," by Prof. F. W. Clarke, Chemist of the U. S. Geological Survey, and "The Essentials of Anatomy, Physiology, and Hygiene," by Dr. Roger S. Tracy, of the New York Board of Health. Dr. Barnard, in his "Metrological System of the Great Pyramid," effectively controverted the historic-astrological theories of Piazzi Smyth. Campbell's description of the "Geological and Mineralogical Resources of the James River Valley" was a valuable addition to our knowledge of our own country. Among the reprints of foreign books there are several scientific treatises that deserve mention. There were some valuable contributions to the electrical section of applied science, among which may be cited: "A Practical Treatise on Electric Lighting," by J. E. H. Gordon; "A Physical Treatise on Electricity and Magnetism," by the same author; "The Electric Light, its History, Production, and Application," from the French of Alglave and Bonnard, edited by C. M. Langren; "Dynamo-Electricity, its Generation, Application, Transmission, Storage, and Measurement," by George B. Prescott; and "Electricity and the Electrical Telegraph," and "Bell's Electric Speaking Telegraph," by the same author. The publication of these works sufficiently indicates the profound interest to-day in the various forms of applied electricity. "Descriptive Mineralogy" was treated by H. A. Bauer, F. S. S., and a new "Handbook of Chemistry" by H. E. Roscoe, F. R. S., and C. Schorlemmer, F. R. S., continued a very elaborate work. To the above-named works on electricity may be added Hammond's "Electrical Light in our Homes," Swinton's "Principles and Practice of Electrical Lighting," Fahre's "History of Electric Telegraphy to 1837," and May's "Bibliography of Electricity and Magnetism." "Flowers and their Pedigrees," by Grant Allen, was not only full of scientific suggestion, but very fascinating in matter and style; and G. J. Romanes, in his "Mental Evolution in Animals," ably continued a discussion which has become widely associated with his name and special studies. Other works which may be named are Worthington Smith's "Diseases of Field and Garden Crops," Dr. H. C. Lang's "Butterflies of Europe," Sir Richard Owen's "British Fossil Reptiles," Prof. Romer's "Bone-Caves of Europe," and G. J. Hinde's "Fossil Sponges." Polities, Economics, and Social Science. — The wide range of topics included in the above found varied and energetic discussion by American writers. First among these attention may be called to Loral's "Cyclopedia of Political Science," the third volume of which was issued, completing an admirable compendium of articles written by American and foreign writers. Lieut. Kelly, U. S. N., took up the vexed and most important question of the building up of our merchant marine in a timely book, the "Question of Ships," in which he vigorously advocated "Free Trade and Free Ships." A course of lectures given at Cornell University, taking strong ground in favor of protection, by Hon. Ellis H. Roberts, were issued in book-form under the name of "Government Revenue." Henry George continued the radical contest opened in "Progress and Poverty" with a volume of essays, "Social Problems." In Crane's and Moses's "Politics" is found a well-digested and scholarly introduction to the study of comparative constitutional law. Fortune's "Black and White," by the editor of the organ of the colored race, the New York "Globe," illustrates the rapid expansion and improvement of the blacks in the South, and discusses also their relation to the problems of land, labor, and politics. The same theme was also treated by Albion W. Tourgee in "An Appeal to Cesar," with all the force of the special pleader. Edward Bellamy, in "Our Way Out," sought to suggest the escape from the present difficulties of labor and trade. Albert Shaw's "Isaria" gave a description of a Western communistic experiment of some years ago, originally begun by a noble and wealthy Spaniard. Scudder's "Labor-Value Fallacy" was an interesting contribution to economics. Other noticeable studies in economics were Prof. W. G. Sumner's "Problems in Political Economy," Prof. Francis Walker's "Land and its Rent," and R. Bowker's "Work and Wealth." Prof. J. Laurence Laughlin added a valuable hand-book to the educational list in his edition of Mills's "Practical Economics." A new edition of Albert E. Bolles's "Financial History of the United States, from 1774 to 1789," was issued. A series of essays, treating the different aspects of the woman question in Europe and America, was edited by Theodore Stanton, and issued in book-form. The first two volumes of "Twenty Years of Congress," by Hon. James G. Blaine, deserve special mention for the ability and fairness of their presentation of political history, and added largely to the author's great reputation. Among other works of an historical and argumentative character may be mentioned Judge Boutwell's "Why am I a Republican?" Eugene V. Smalley's "Brief History of the Republican Party," Flower's "History of the Republican Party," Patton's "Democratic Party," Stanwood's "History of Presidential Elections," and Blanchard's "Rise and Fall of Political Parties in the United States." Attention may be called to the very
suggestive discussion of the question of intemperance in Gustafson's "The Foundation of Death," which is a encyclopedia of facts on this topic as well as a strong argument.

Among American reprints may be selected a trio of important works on one of the pressing problems of the day. Fraser Rae's "Contemporary Socialism" is an able historical sketch of the forms of socialism now prevailing in the theories and aspirations of the world, and H. M. Hyndman is the author of "The Historical Basis of Socialism in England." Greenland's "Co-operative Commonwealth" is another contribution to the same subject. W. H. Mallock reviews the theories of Henry George with his usual brightness in "Property and Progress," and uses the weapons of satire as well as those of logic. A translation of Prof. Lavelle's "Elements of Political Economy" was made by A. W. Pollard, of Oxford, and Walter Pollock is responsible for an essay on the "Land Laws." A new edition was issued of Thorold Rogers's "Six Centuries of Work and Wages." "Philosophy and Metaphysics."—This department of thought has had very few important additions during the last year, and none of these was by American writers. Mrs. Corson translated Janet's "Elements of Morals," a work ranking high in the philosophy of ethics. The school of philosophic pessimism was illustrated in the translations of the leading works of its two great lights. Schopenhauer's "World as Will and Idea" and Hartman's "Philosophy of the Unconscious" rank as two of the greatest recent statements of philosophical opinion, though they find but little following among American thinkers. To the above short list may be added a biographical sketch of Leibniz, by Morz, and one of Vico, by Prof. Flint. This department was richer in American contributions than any other branch of intellectual thought. The concluding volume, "Persia," of the late Dr. Samuel Johnson's "Oriental Religions," a work projected on a vast and elaborate plan, was issued. The survey given by Dr. Johnson of religions thought in the East, of its influence on Christianity, and of its connection with philosophic speculation in modern times, is comprehensive and masterly. In the Holben lectures of the year we have a work of a similar character, under the name of "The Continuity of Christian Thought," by Rev. A. V. Allen, tracing the evolution of religious history from the beginning of the Christian era. This may be regarded by the student as complementary to the former work. Dr. R. S. Storrs, one of the most scholarly among American clergies, in the "Divine Origin of Christianity," summed up with great ability the argument of Christian evidences. One of the sensations of the year in religious literature was Rev. Heber C. Newton's "Book of Beginnings," containing the author's interrupted course of lectures on the book of Genesis. Prof. Joy brought the fruits of a rare linguistic scholarship to bear in "Quotations in the New Testament," a book of much value as an aid to the Biblical student. Dr. Pentecost furnished an exegesis of Exodus in "Out of Bondage." Other works on the Bible were "The Great Argument," by Dr. Thompson, which included studies on all the books of the Old Testament, and Dr. Lowrie's "Explanation of the Epistle to the Hebrews," said to be the fruit of many years of thought. In "The Apostles' Creed," Rev. Charles R. Baker gives an excellent exposition. A number of notable books on homiletics belong to the religious literature of the year. Among these may be mentioned "Teachings and Counsel," by Dr. Mark Hopkins, one of the veteran religious writers of the country; "Pastoral Theology," by Rev. J. M. Hoppin; "A Manual of Preaching," by Rev. Franklin W. Fisk; Hunt's "Principles of Written Discourse," an admirable manual of rhetoric for theological students and preachers; and Cheesebrough's "Children trained for Discipleship." "A System of Christian Theology" is the title of a volume gathered from literary, homiletic, manuscript notes, and unpublished sermons, left by the late Rev. Henry B. Smith. This, in connection with two preceding volumes, completes the exposition of his views on theological questions. A "Life of Paul," well adapted for popular reading, was written by Rev. Dr. Taylor, and under the head of "Some Heretics of Yesterday," a collection of lectures, Dr. Herrick furnishes a very readable account of religious opinions during four centuries. Rev. James Freeman Clarke treats the Pauline theology from a Unitarian point of view in "The Ideas of the Apostle Paul translated into their Modern Equivalents." Rev. Joseph Cook is responsible for another volume of "Boston Lectures for 1884," which bears the name of "Occident," and discusses modern religious and philosophical thought with circumspect certainty. We have also volumes of sermons and lectures perpetuated in book-form in "The Reality of Faith," by Rev. W. Smyth, and "The Reality of Religion," by Rev. H. J. Van Dyke, Jr. The sermons of the Rev. Dr. Ewer, recently dead, are given under the name of "Sanctity and other Sermons," and a volume of Mr. Talmage's pulpit talks may be recognized by the title of the "Brooklyn Tabernacle." Some of Henry Ward Beecher's best bits are served under the name of "Comforting Thoughts." A Unitarian view may be read in "Beliefs about the Bible," by Rev. Dr. Savage. Another contribution to what is known as liberal Christianity is Eddy's "Universalism in America," the first volume of which only has been issued. Minger's "Lamps and Paths" is designed for juvenile readers. A very interesting contribution to hymnology and religious biography is found in Nutter's "Hymn Studies," a critical view of the standard old hymns, with sketches of their authors. The Yedder Lectures for 1884, delivered by Rev. J. B. Drury, were issued in book-form,
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with the title "Truths and Untruths of Evolution." Other books worthy of mention were Hedgo's "Ateneum in Philosophy," Burr's "Ecco Terra," Bush's "Evidence of Faith," and Cooke's "Outlines of the Doctrines of the Resurrection." The Augustinian and Calvinistic elements of modern belief were strongly presented by Bishop Littlejohn in his "Lectures on the Christian Ministry at the Close of the Nineteenth Century." Another volume was added during the year to Dr. Philip Schaff's "International Revision Commentary."

The books published from foreign sources offer several deserving of note. An interesting view by a converted Hebrew, with fresh and illuminating research into the characteristics of Christ's life, were displayed in Edersheim's "Life and Times of Jesus the Messiah." Another similar essay in biographical criticism was given in the translation of Dr. Bernhard Weiss's "Life of Christ." Matthew Arnold's scholarly study of a very interesting period of Hebrew life and thought, "IAvath of Jerusalem," excited devoted comment and attention, perhaps all the more from its being the work of a layman. Another popular religious biography was that of "Simon Peter," by Dr. Heddle. The theme of the Hibbert Lectures for 1884 was "Native Religions of Mexico and Peru," by Dr. Albert Revello; that of the Framley Lectures of 1883, by Rev. W. Arthur, "The Differences between Physical and Moral Law"; and of the Bedell Lectures for 1883, "Revealed Religion expounded by its Relation to the Moral Being of God," by Rev. H. Cotterell. All these were issued in book form and are forcible, eloquent, and scholarly expositions of the subjects discussed. General Gordon Pasha's strange religious opinions were exploited in "Reflections in Palestine." An interesting exposition of the religious changes going on in the Hindu mind was the characteristic "Christianity and Brahmanism," works by Ram Chandra Bose, an erudite high-caste Hindu, who professes a species of modified Christianity, Brewer's "Dictionary of Hymnology," published during the year, is a curious volume, which the religious student will find of interest and value in helping his researches. The first volume of Speno, Maxims of Public Health; Billings's "Relation of Animal Diseases to the Public Health;" Wright's "Lectures on the Diseases of the Respiratory System;" Amund's "Traveling Medicine;" Loomis's "Text-Book of Practical Medicine;" Millard's "Treatise on Bright's Disease;" Copp's "Cauliflower Disease;" Douglas Graham's "Practical Treatise on Malaria;" Dowse's "Brass and Copper," Hamiltou's "Manual of Medical Jurisprudence;" McKenzie's "Diseases of the Eye and Throat;" Crothers's "Mental Contagion in Inebriety;" Kippox's "Hand-Book of Skin Diseases and Their Homopathic Treatment;" Hewett's "Pathology, Diagnosis, and Treatment of the Diseases of Women," edited by Sims; Hubbin's "Laws of Health;" Park's "Manual of Practical Hygiene," edited by De Chammont; and "Autobiography" of Dr. Marion Sims, edited by his son. The latter, though not technically speaking a medical book, is of such interest to all physicians that it may properly be classed under this division as much as under that of biography.

LITERATURE, BRITISH. The general stagnation of trade, occasioned by political and social disturbance, had its influence in the
literary world, and there were fewer and less important books published in 1884 than usual.

Fine Arts.—Particularly meager is the list of works in this department. Marion Kember’s “Guide to Decorative Art,” Hudson’s “Historical and Practical Guide to Art Illustration,” Grove’s “Analytic Essays on Beethoven’s Nine Symphonies,” Graves’s “Dictionary of Artists who have exhibited at the Principal London Exhibitions from 1760 to 1880,” Lottridge’s “Essay on Scarabæ,” Sanders’s “Caved Oak Wood-work in the Houses and Furniture of the Sixteenth and Seventeenth Centuries,” and Solon on “The Art of the Old English Potter”—these are the most notable books of the year in this direction. The finely illustrated edition of Sterne’s “Sentimental Journey,” and Dickens’s “Roméo and Juliet,” are to be mentioned among the artistic holiday volumes, and Austin Dobson’s “Thomas Bewick and His Pupils,” and Robbins’s translation of Gosse’s “Life of Fromentin,” among the art biographies.

Language and Literature.—In the general direction indicated by this classification there have been some important publications. The “Biography of Printing” of Bignmore and Wyman has reached its second volume and the final seventh volume, and will be completed in the third volume. Hawkins’s “Titles of the First Books printed in Europe up to the Year 1600,” and the British Museum catalogue of books “Printed in England, Scotland, and Ireland, and of Books in English, printed abroad, up to the Year 1640,” are valuable additions to practical bibliography. Dr. Murray’s new “English Dictionary,” Storrmouth’s “New Dictionary of the English Language,” and the first part of the “Dictionary of National Biography,” are valuable additions to their class of literary conveniences. McCallum’s “Studies in Low and High German Literature,” Gelrart’s “Folk-Lore of the Bardic Poets,” and Harmsworth’s “Stray Leaves from Strat Literature,” may be inserted in this class. So may not improperly the Greek and Latin classics: Chinneck’s translation of the “Anabasis,” Wilmott’s “Iliad,” and Palmer’s “Odyssey.” Dante’s “Inferno” has been translated by Sibbald, and Tasso’s “Jerusalem Delivered” by Sir J. K. James. There were new editions issued of the works of Marlowe, Dryden, Burton, Pepys, Keats, and Shelley. Francis T. Palgrave’s charming little edition of Keats deserves special mention. Another edition of this poet is by Arnold, and still another by Lord Houghton, while his “Letters” appeared, edited by Speed. The edition by Montague of “Bacon’s Essays,” Myres’s “Selections from Milton’s Prose,” Ainger’s “Miscellaneous Writings of Charles Lamb,” the “Sonnets of Wordsworth,” by Archbishop Trench, “Selected Poems of Tennyson,” by Rolfe, “The Princess,” by Rolfe and Dawson, the “Wit, Wisdom, and Philosophy of Richter,” in English, and a fine edition of “Jane Eyre,” complete the works in general literature. In the way of literary criticism, there were “Shakespeare’s Predecessors,” by Symonds; “The Prologue and Epilogue in English Literature from Shakespeare to Dryden,” by “G. S. B. ;” “Shakespeare,” by Prof. Hale; and Hudson’s “Wordsworth.”

History.—Dr. A. H. Sayce has prepared a scholarly and useful little monograph in his “Ancient Empires of the East,” and “Babylonian Life and History” have been treated by Mr. Budge, while Sir C. H. Rawlinson has published the second part of the fifth volume of his “Selections from the Miscellaneous Inscriptions of Assyria and Babylon.” The third volume has appeared of the series, by George Stephens, of the “Handbooks of the Old Northern Race. Monuments of Scandinavia and England,” and “Scotland in Pagan Times,” by J. Anderson, completes the list in ancient history. More recent, yet hardly modern, is the “History of English Goldsmiths and Plate-workers,” by Chaffer. General English history furnishes the first four books of William of Newburgh’s “Historia Rerum Anglicarum,” edited from the MSS. of the Rolls; the tenth volume of the “Calendar of State Papers,” Brewer’s “The Reigns of Henry VII,” Paul Friedman’s “Life of Anne Boleyn,” Percy Fitzgerald’s “Life and Times of William IV,” the “Facsimiles of Irish Manuscripts,” edited by J. T. Gilbert, have been completed, and J. R. Green’s noteworthy “Conquest of England” has appeared. “A Study of Ireland in the Seventeenth Century,” by Mary Hixon, and W. A. O’Connor’s “History of the Irish People,” are important additions to the bibliography of this subject. Sir Alexander Grant’s history of “The University of Edinburgh’s Three Hundred Years” is a valuable addition to the history of education in Scotland. In special histories, we have Mr. J. H. Skene’s “With Lord Stratford in the Crimen War of M. T. Sancho’s,” the fourth and concluding volume of his work as “The Revolution,” Lady Jackson’s “Court of the Tulleries,” M. de Manpu’s “The Famous Coup d’État,” Gineville’s “History of the Thirty Years War,” and Holme’s “History of the Indian Mutiny.” A new “History of Prussia,” by Herbert Tuttle, extends the accession of Frederick the Great; and there were published Boulger’s “History of China,” Rusden’s “History of Australia,” Justin McCarthy’s “Short History of Our Own Times” the “Russian War in Turkomania,” by Gen. Grodekoff, Col. Malleson’s “Battle-Fields of Germany,” Lieut.-Col. King’s “Famous and Decisive Battles of the World,” two works as the “War in the Bondon,” by Hon. J. Coborne and Bennett Burleigh, and a brief essay by Atkinson on “The Reading of History.”

Essays.—Among the essays of the year, quite the brightest and most original and graceful were those published under the title “Obiter Dicta,” anonymously, and reprinted by Messrs. Scribner. Vernon Lee’s “Euphorion” is a
of historical essays; Dr. Hedge's
in "Philosophy" is theological and
ical. The "Essays and Leaves from
Eliot's Note-Books" Walter Besant's
"The Hail Call," "Colloquism,
Hamerton's "Human Interest in
Miss Hamlen's "Chats," and Rev.
Savage's "Man, Woman, and Child,
ner a less serious vein.
Perhaps the fullest department
are in the production of the year was
diography, important both for subject
or in many marked instances. The
translations of Noli's Lives of Liszt
were valuable contributions to
istory, as was also Mailland's "Life of
n," in the series of "Great Musicians.
"Life and Times of Simon Peter" is
hat remarkable effort; the reformer
had two biographies published dur-
one by Lossing, not translated
German by Dr. Stoughton, the other
. L. Wilson, a Scotch-American. Mr.
translation of Goethe's "Early and Mis-
Letters," and Dr. Evans's "Memoir of
and Nevins' "Harder and his
Illustrate German literature. Mr.
's "Addison," Dean Church's "Bi-
Mr. Trail's "Corderige," are addi-
the series of "Englishmen of Let-
enham has edited an edition of "Cow-
ners," and a new "Life of Sydney
Reid, has been published. Mr.
"Carlyle in London" completes this
contribution to the biography of his
ject. Among less important per-
sonese lives have been sketched, are
Whitehead, by H. T. Mackenzie Bell,
title of "A Critical Monograph,"
"The Life of B. R. S. Leopold, Life and
have been written by D. C. Thomp-
rd Brabourne has edited the "Letters
Austen," the "Complete Works of
have appeared in a new edition,
ry," and "Life of Henry Ward, Poet and
Mr. and the "Tales, Poems, and Essays"
Barbauld, and of Jane and Ann Tay-
been brought out by Mrs. Grace A.
. Her Majesty Queen Victoria has pub-
More Leaves from the Journal
in the Highlands," the "Story of a
cess Alice" has appeared, and Dr. J.
m, Physician Extraordinary to the
published "Memories of his Life
The "Biography of Arminna"
written by himself, and C. W. D.
ge's "Life of Brig.-Gen. MacIver"
stances of more adventurous lives.
such's "Bismarck" attracted gener-
, and Robertson's "Life of John
and Archibald Forbes's "Biography
of Gordon" are among the impor-
t the class. Col. Chalifé Long's
Prophets" includes the latter, with
Letters from the Danube, the Cri-
men, and Armenia," and "Reflections in
Palestine," throw still further light on the life
and character of the great soldier. "The Life of
P. D. Maurice's" and "Dr. Mozley's Letters"
are to be named in English biographical litera-
ture; and so are the "Croker Papers," the
second series of "Extracts from the Diary of
Henry Greville," Robert Harrop's "Political
and Critical Study of Lord Bolingbroke," Mr.
Omond's "Lord-Advocates of Scotland," the
"Autobiography of the Earl of Malmesbury,
the "Life of the Hon. M. Elphinstone," and the
Lives of "Sir Henry Cole" and "General
Sir George Napier" completing this subject.
Poetry.—The new publications in this de-
partment present very little of importance.
Robert Browning's "Ferishta's Fancies" and
Swinburne's "A Midsummer Holiday" are the
most noteworthy books, after which come Phil-
ip Bourke Marston's "Wind Voices," Cholmon-
dey Penell's "From Grave to Gay," Lewis
Morris's "Songs Unsung," Lang's "Ballades
and Verses Vain," and Michael Field, a new
writer, with "Fair Rosamond."  
Fiction.—In this department, while no re-
markable work appeared during the year, the
field has been fairly filled by some of the
greater and very many of the lesser British novel-
ists. A posthumous work by Anthony Trol-
lope, "An Old Man's Love," Charles Beade's
"Perilous Secret," and Wilkie Collins's "I Say
No," are not novels of the highest rank, though
of the greatest names. Mr. William Black's
"Judith Shakespeare" and Mr. Blackmore's
"Tommy Upmore" are among the second
rate. "Called Back," "Dark Days," and a
collection of short stories, "Bound Together,
introduced Mr. Hugh Conway (a pseudonym)
to the English-speaking public, and produced
a sensation far in advance of his literary
merit, due to their sensational and melodram-
ic character. "The House on the Marsh" and
"At the World's Mercy," published anonymously,
attacked considerable attention for similar
reasons. Mr. Robert Buchanan's "Noah's
Abelard" and "Foxglove Manor." Mr. R. L.
Stevenson's "Treasure Island" created some
excitement in literary circles, and Mr. Clark
Russell's latest sea-stories, "Jack's Courtship"
and "John Holdsworth, Chief Mate," sustained
his reputation in his peculiar line. Ouida's
"Princess Naprapina," Robinson's "A Fair
Maid," Miss Yonge's "The Armorer's Apprentice,
"Mrs. Lang's "Disseiving Views," Mr.
Anstey's "The Giant's Robe," Mrs. Walford's
"The Baby's Grandmother," a charming story,
Mrs. Mulock-Craik's "Miss Tommey," founded
on fact, Mrs. Oliphant's "Old Lady Mary,"
a clever ghost-story, and "Laddle," and "Miss
Toosey's Mission" complete the list of British
fiction for 1884.
Medicine.—A number of really important
works on medical science appeared during the
year, and the list of new editions is larger than
usual. Sir Henry Thompson published "Tu-
mors of the Bladder" and "Lectures on some


**General Science.—** In the department of electricity the new publications include Hammond's "Electric Light in our Homes," Swinton's "Principles and Practice of Electric Lighting," Gordon's "Practical Treatise on Electric Lighting," Fahie's "History of Electric Telegraphy," and May's "Bibliography of Electricity and Magnetism."

In geology and natural history generally are Dr. H. C. Lang on "The Butterflies of Europe," Sir Richard Owen's "British Fossil Reptiles," Prof. Romer's "The Bone-Cars of Europe," and G. J. Hinde on "The Fossil Sponges in the British Museum." Economic science is enriched by Prof. Thorold Rogers's "History of English Labor," a work of remarkable research and profound philosophy. Fraser Rae published a study of "Contemporary Socialism," Mr. Mallock answers the "Progress and Poverty" of Mr. Henry George by his "Property and Progress." Mr. Edward Bellamy, on the same subject, has written a work entitled "The Way out," Truop's "The Future Work of the Religious in English Legislation," handles trade relations, and Mr. H. M. Hyndman has published the "Historical Basis of Socialism" in England, while Arnold Toynbee's "Industrial Revolution in England" has been issued with a Memoir by Prof. Jowett.


LITERATURE, CONTINENTAL, IN 1884. (BELGIUM, DENMARK, FRANCE.)

Lugion during the Sixteenth Century," whence originated Roman Catholicism as now organized in Belgium. National history is zealously studied. M. Namieche has brought out two more volumes of his "Cours d'Histoire Nationale," which are occupied chiefly with the reign of Charles V in the Low Countries. Numerous monographs of local history have appeared, and bibliography has proved fertile and useful during the year. The group of writers known as "Young Belgium" has been very productive in fiction, light literature, poetry, etc. Besides the large number of publications in French, the prevailing language, there are evidences of life and vigor in Flemish literature in Belgium. This is shown in the production of works of merit on Flemish art, criticism, the drama, and the like. Poetry, too, has been very prolific, and is pronounced by competent judges to be really brilliant. The greatest literary event of the year in Belgium was the publication of a collection of poems by Jan van Beers, "Rijzende Blaren" ("Rising Leaves"), in which the old Antwerp poet took the "publie" quite by surprise, his poems being as touching and as fresh in sentiment as those of his youth. The work was excellently illustrated by his son, a painter of some note.

DENMARK.—During 1884 there was celebrated at Copenhagen the second centenary of "the father of Danish literature," Ludvig Holberg. In connection with this, new editions of his comedies and other works were published, as well as several volumes illustrative of the life and times of Holberg. Critical works on Danish literature have appeared, the most important of which is that of George Brandes. In the field of novels, tales, dramas, etc., Schandorff, Drachmann, and Gjellerup are worthy of note, as also Ewald, Hansen, Edel, Gerhard, Bondesen, and others. In fact, the number of tales, sketches, and studies is so great as to render it impossible to give even a partial list in the present article. In history the contributions have been fairly up to the average of previous years. P. Hansen's "History of Danish Literature" and "Modern Danish Painting" are spoken of in high terms. Besides these there are several volumes illustrating Danish history and biography, such as Lütken's "Battle of Heligoland" (1884), Land's "Denmark and Norway in the Sixteenth Century," autobiography of Bishop Brammer, etc. Periodical literature meets with good support, and translations and critical essays evidence the existence of life and spirit in popular literature.

FRANCE.—Judging from appearances and the hundreds of volumes issued during the year, in the republic, it would seem that Zola and the realistic school, so called, had gained the day entirely over the old-fashioned idealism of the romantic school of other times. Naturalism, it is to be noted, does not deem itself bound any longer to observe the compromises that the incessant watchfulness of its adherents of Mexico and Peru." Lilly's "An
Religion and Modern Thought," Fair
s "City of God," and Principal Tulloch's
ern Theories in Philosophy and Religion." 

LITERATURE, CONTINENTAL, IN 1884. (BELGIUM, DENMARK, FRANCE.)


LITERATURE, CONTINENTAL, IN 1884. liter- on the Continent, during the present has pursued the even tenor of its way, raises evidence of life and fair activity, particularly striking or novel production perused; but in all departments has been ested a love of letters, accompanied by liberation of various works of merit and value. We follow our usual plan of giving a sketch of Continental literature in the ethical order of countries.

im.—Politics and history occupy largely attention of Belgians, and the daily press active in discussing matters of national it and concern. Rival parties are armed against one another on the education sa, and a very large number of treatises were published on the subject. Among may be named Trassenster's study on Higher Education of Women," and the secret committee's report upon the ion of public and private educational schemes. M. Philipson draws a power of "The Counter-Revolution in Re-
saries imposed upon it, and it pushes its sys-
tem to the fullest logical consequences, with
all the processes proper and needful to it. Pos-
sibly, may probably, a reaction will ere long
set in, as the public are beginning to weary of
the monotonous and rather unsavory feast so
largely furnished. Poetry, during the year,
have given but faint signs of healthful, free life.
Victor Hugo's voice is silent, as is but natural
in view of his increasing years. M. de Lisle
has issued a volume entitled "Poèmes Tra-
quilles," which the critics praise as addressed
to the select few, but which can never become
popular; and M. Richepin has put into print
his "Les Blasphèmes," in which it is thought,
by some, that he rivals the intense, passionate
melancholy and deeply-rooted conviction of
Lucretius, in a field that the Roman poet has
rendered immortal in literature. A large num-
ber of songs, idyls, poems, etc., has appeared,
but few if any are deserving of mention in
this place. The novel continues to hold its
supreme position in popular favor. M. Zola
still writes with his accustomed force and distinc-
tion to a kind of literature with which his name is
inseparably linked. Daudet, in his "Sapho,"
deals with a subject repulsive to most minds.
Huysmans, a disciple of Zola's, furnishes a
striking product of realistic pessimism. His
"A Rebours" describes the life of an aristo-
crat, aiming at a life unlike that of other men,
seeking morbid sensations, and dying of spleen
and ennui. Harry-Allis, in "Reine Soleil," has
made a study of the courteous, in imitation of
Zola's book on the same subject, powerfully
written, but open to the fatal objection of be-
ing an improper topic to treat of in books in-
tended for moral, decent people. Cherbuliez
has taken in hand a study of the miners and
their industrial surroundings. Among books
of a healthier tone and purpose the number
published during the year is not small. Lit-
erary criticism appears to be almost at a stand-
still, in great part owing to the publication of
indications of the year that deserve
attention to this department, such as
Brunetière's "History of Literature," Rolland's
biographical recollections of Lamartine, Des-
chanel's volumes on Racine, Amiel's book on
the character of Juste Lips and other human-
ists of the sixteenth century, etc. The pub-
cation by his family of letters by Guizot has
done good service for the reputation of the
great statesman and author. Taine's new vol-
ume of the "History of the Revolution" ex-
hibits the writer's usual power, and is praised
by the critics as a vigorous and, in a measure,
successful effort to get rid of the revolutionary
legends, and to face the truth in regard to the
origin of modern France. Several other works
in political, constitutional, and literary history
have appeared, and give evidence of devotion
of French scholars to subjects of grave im-
portance to the well-being of the republic. In
like manner higher branches of thought are
well represented in books on social questions
—philosophy, morality, and physical science.

GERMANY.—Literature in Germany manifests
no diminution in production of books, how-
ever many of these may prove to be of trivial
value. In number of authors, and in amount
of publication on all sorts of subjects, the
country of Goethe and Schiller, of Heine and
Uhlrand, of Lingg and Hamlering, of Spielhagen
and Heyse, holds the front rank among the
actions on the Continent. Emanuel Geibel, who
has been termed "the poet of the German le-
dies," died in April of this year, at the full age
of threecore years and ten. His reputation
for the higher and nobler qualities of the poet
is very great, and hardly any lyric poet, except
Heine, has been so universally popular as
Geibel. W. Jensen's "Skitzenbucb" is much
praised for its poetic stories, and Von Wilden-
bruch has obtained the highest honor as a
lyric poet as well as a dramatist. The Grill-
parzer and Schiller prizes were both bestowed
upon him. Paul Heyse also has obtained simi-
lar recognition of his skill and power as a
dramatist. Lohwag's "Iphigenia in Delphi"
is much praised by the critics, as an able study
in character and tone, and also as a faithful
re-echo of Goethe's "Iphigenia in Tauris.
Schack and Caro have also produced tragedies
of merit. The archeological novel is still safe
to be master of the situation. Eckstein's
"Prussian," which brings up afresh the insur-
rection of the slaves in Rome under Spartacus
and Dahn's "Brisula," descriptive of a far-
haired Sswabian girl, and her brave resistance
against Roman oppression and outrage, are
noted for fidelity and skill in depicting mas-
ers and customs. Spielhagen, in his latest
novel, "Uhlenhaus," has returned to the shores
of the Baltic, and deals in a thoroughly artistic
manner with politico-social economy and its
development. This writer maintains his place
at the head of German novelists. Numerous
other authors have written on the inexhausti-
ble theme of the distinction between social
classes, and many have written with striking
success. Von Redwitz, Heyse, Lindan, Voss, and
others, contribute to this department of literature.
A large number of works, partly historical,
partly biographical, with more or less of ro-
manee conmmingled, has appeared during the
year. Von Treitscheke's "German History is
the Nineteenth Century" received a prize from
the Berlin Academy. Other works in German
history are much praised by the critics, as
those by Wagner, Von Reumont, Busch, etc.
The last volumes of Metternich's Memoirs are
brought to a close in the eighth volume, and
mark the peculiar power and diplomatic skill
of the Austrian chancellor, in the former half
of the century. The German "man of iron"
(Bismarck) of the latter half of the century
has furnished material for literary workers,
among whom M. Busch has been most suc-
cessful. Several contemporary memoirs have
appeared, of which those by A. Meinsroer, R. Anderbach, H. Wagener, O. Meding, etc., are
pronounced by competent judges to be valuable
ill as interesting. Among works of this
properly to be termed historical, Ranke's
volume of Ancient History stands first.
In the venerable historian, now in his
fiftieth year, brings the record down to the
fall of the empire to Constantinople in the
and the foundation of the Germanic king-
in the West. Various portions and parts
of German history have received this
close and careful attention, from A.
H. Ullman, H. Breslau, K. Mä llenhoff,
and H. Schliemann has pushed his investi-
gations in the Trojan plain and published the
results. His zeal and earnestness are freely
praised, but the actual value of his discov-
ery is much questioned by scholars. No
less remarkable work has appeared this
year in the department of philosophy. Bud-
ges has been largely studied, and some good
work on Indian philosophy have been pub-
lished. Lotze, whose premature death is much
regretted, still exercises influence in philoso-
phy. Kant is still criticised as well as
admired, and many of his countrymen are in-
terested in the latest manifestations of "philoso-
phy." The study of knowledge, or to the
philosophy of knowledge. But the
mind turns more strongly toward meta-
physics, and it seems as if Schopenhauer was
right in his assertion that the metaphysical im-
man is immortal.

ill.—Periodical literature has flourished
during the year. The "Archaeological
Journal," the "Bulletin," the "Estia," as well as
many of learned societies, are excellently
written, and exercise large influence through-
out the kingdom. Light literature meets with
partial success, most of the publications of
this kind being tales, narratives, letters, etc.,
popular in a general way, and the drama, are cultivated to some
time, and several contributions of the year
ought of note, as Drossinio's "Idyls,"
boss's "Fables," Antoniadis's "Greek
Poesy," etc. As modern
ists are studied in the middle schools, there has
been a collection of Greek reading-
s, under the title of Neo-Hellenic
Readings. Additions have been made to theology,
and the "Apostles," which is quite well
known in America. Church history, pastoral
ology, Christian archaeology, with kindness
and art, show that diligence and scholarship are
valued with good success in Greece. Phi-
logy and art are also well cared for, and his-
property receives its due share of study and
rich in such works as the "History of
Greece from the most Ancient Times to our
" by Venizelos (vol. i.), the "Second Siege
issolohghi" (1825), by Michos, and "The
Hellenic World," biographies of eminent
Hellenists of Alexandria.

Italy.—The anniversary of the death of
the silent was celebrated in July of
year, and gave rise naturally to a number
of papers on the subject of the house of Orange
and the Dutch people. These were not only
interesting and appropriate, but also valuable
for historical purposes. History has been cul-
tivated during the year with much diligence,
and a number of volumes published, treating of
the Eighty Years' War, the Dutch power in the
East Indies, the surrender of Amsterdam in
1785, etc. Hut's excellent work on the pro-
gress of sciences, letters, and arts in Holland,
in the seventeenth century, is very suggestive
and useful and has just reached its conclusion?
Philo1ogy meets with its usual share of attention,
as shown by several publications of merit
during the year. Dante's "Divine Comedy"
has been translated into Dutch in the ter-
zarina, and is said to be well executed. Shake-
speare also has found an appreciative translator in
Burgersdijk. Poetry and the drama main-
tain their accustomed place, and novels are
abound. Many of these are lauded by the criti-
ques. Beets, the venerable Dutch author, cele-
brated his seventieth birthday this year, and
published the fourteenth edition of his admirable
work, "Camera Obscura." He is pronounced by
those who seem to know whereof they
speak to be not only of noble character and
uprightness, but also possessed of such talent and
true taste as to render him universally honored
and loved in Holland.

Hungary.—Literature, in the usual sense of
the word, appears to be giving way in Hungary
to strictly scientific investigation and research.
Scientific periodicals absorb most of what is
prepared for the press, and consequently few
volumes of importance are published.
History is extensively cultivated, and quite a large
number of works have appeared, which treat of
the history of Hungary and Austria, the
history of the Jews in Hungary, the history of
the history of civilization, the biographies of eminent
Hungarians, etc. The origin of the people of Hun-
gary, about which there is great diversity of
opinion, is treated with much spirit by Hun-
galv, Barna, and Budenz. Philology and phi-
losophy are freely cultivated. In the former
may be named an excellent Finnish-Hungarian
Dictionary by Szimary, and in the latter a work
on "The Pessimism of the Nineteenth Centu-
y," by M. Alexander. This volume obtained
the academical prize, and it is said well
deserves it. M. J. Kiss's poem, "A Tale of a
Sewing-Machine," is much praised. Jokai, the
famous novelist, maintains his position, and has
written the best novel of the year. Numerous
other writers, however, have done well in this
line. The drama remains much the same as
last year, the production being only of average
merit. On the whole, the literary future of
Hungary is hopeful, though not very clear.

Italy.—Literature in Italy, during the year,
can hardly be said to have flourished, and on
the whole presents a discouraging aspect. G.
Frati and G. Carcano, who were poets of con-
siderable reputation, have died at seventy and
seventy-three years of age respectively. The
latter had translated Shakespeare into Italian with a good measure of success. Both belonged to the school of Manzoni, and were distinguished for the high moral and religious tone of their writings. The new school of poetry in Italy, on the other hand, is noted for its avowed enmity to Christianity and all that Christianity involves. It declares itself without hope, affirms life to be for suffering, despairs of Italy, and complains that she is incapable of revolution and regeneration. This school looks to Foscolo and Leopardi as its genii, and loves to worship at their shrines. Carducci and Rapisardi are representative verse-makers of this school, and in the last poem of Rapisardi's, entitled "Gibbo" (the patriarch Job), he shows himself to be fiercely opposed to everything that is believed in religion, or that exists in society. The dramatic harvest is poorer than the lyrical. The year has been also unproductive of novels. Some tales based on the principles and processes of the French school of Zola, and some others of a better sort, constitute the chief outcome, showing that the novel in Italian literature is in a state of decadence. C. Guliani, whose life was devoted to the interpretation of Dante, has been removed by death. The labors of Prof. d'Ancona, and Prof. Bartoli, on the great national poet, indicate ability and skill of a high order. The chief work, however, in literary criticism, is that of Prof. Ruffini, entitled "Le Origini della Epopoea Francesi," which obtained for the author a prize of 10,000 francs. In history there appears to be but little talent employed. Critics affirm that existing writers in this department are, as a rule, inferior to second-rate contemporary historians in England. De Lava's work on Charles V has reached its fourth volume, and is regarded as a production of value, although put together in poor style; other writers in this department hardly deserve to be named, with the exception of the heresies of the middle ages, and Taberrini in his lives and recollections of distinguished Italians of the present century. One or two volumes, which must be regarded as on the border-line between history and fiction, have appeared from the pen of De Amicis. Other writers have dealt in similar wise with topics partly literary, partly scientific. Periodical literature flourishes with fair success, and the number of publications in the way of reviews, magazines, and weekly journals, is quite large, and gives promise of better things for literature.

Norway.—Novels and novelettes, during 1884, were unusually numerous in Norway, and written largely with distinct purpose in view. Bjornson, after years devoted to the drama, has returned to his old field, and has produced a remarkable novel. In this he dwells upon the indulgence accorded to immoralities of men, as opposed to the judgment passed on women for similar transgressions. He also discusses the remedy, and urges that it must come from women being educated to take their full share in the duties and responsibilities of life. Jens Lie and A. Kielland have written novels dealing with other not less important social questions of the day. Garborg's "Tales," among the best of the year's productions. The drama is but slightly represented this year by Ibsen's "The Wild Duck," and H. J. Broe's "Gold." Scientific literature of the year is also of small account, being chiefly marked by essays and monographs on Norway and Norwegian history and biography. The rise and progress of the theatre in Norway are treated of by T. Blans, and it seems to be proved that the country produces artists worthy of ranking among the best in their profession.

Poland.—This year was marked by the celebration of the three hundredth anniversary of the death of one whom the Poles regard as a prince of poets, viz., Johann Kochanowski. He was the first great poet in Polish literature, and the commemoration of his death called forth numerous publications in verse as well as prose in reviews and other periodicals. A monumental edition of his works, with explanatory notes and criticism, was also issued, and a literary congress was held at Cracow, where Kochanowski was eulogized, and discussions were held as to the condition of literature in much-depressed Poland. It is pointed out, as a strange irony of destiny, that J. J. Kraszewski, the chief representative of national literature, should be compelled to spend his old age as a state prisoner in the Russian fortress of Magdeburg; nevertheless, Kraszewski is very prolific, and has continued to furnish at intervals additions to his numerous historical novels. New novels this year have been produced by T. T. Jex, H. Siemaszko, and F. Bykowski. These are spoken of in high terms by the critics and reviewers. Several writers have brought out collections of their tales and novelettes, and the social questions of the day have received some attention. To the drama there have been contributions this year that indicate talent and skill, from Zaklewski, Swierdloch, Madame Meller, etc. Besides these, two or three collections of lyric poems have been published. In history little of moment has appeared. Several biographical monographs are timely and valuable, and M. Straszewski has supplied an elaborate work "On the Origin and Development of Pest-mism in India." The record of the year is not certainly very encouraging, but the situation is not by any means without hope of better things.

Russia.—The record of Russian literature during 1884 is meager and unsatisfactory, not unlike in this latter respect to that of the civic and political condition of the empire of the Czar. The chief literary events of note are the appearance of the first volume of the correspondence of Ivan Turgenieff, and the publication of a "Literary Miscellany," edited by the Literary Society of Russia in commemoration of their twenty-fifth anniversary. Turgenieff's correspondence, as far as issued, is
and valuable, mainly as giving an ac-
his literary predilections and his meth-
ning. The completion of this publi-
looked for with much interest, though,
o the political troubles in the country,
severity of the Government in regard-
ical allusions or expressions in any
book or periodical, it is not probable
remains of the correspondence will
see the light. "The Literary Mis-
contains the opening chapters of
Novotny's novel, "The Decembrists," a
ral attractive stories by Stechedrin, a
Dean Swift in style and energy; some
Turgeniev; a history of the Russian
ociety, etc. In fiction and light lit-
the year has produced nothing of no-
value, and in poetry much the same
it is true. History also furnishes no
of merit this year. Historical articles
es, and historical memoirs, have ap-
no of which are regarded as valu-
importance. In the science of geogr-
e has been no original production this
work of M. E. Reclus, however, on
as been translated into the vernacular,
nsidered by the critics to be an admi-
entific production, both creditable to
r and calculated to advance the knowl-
appreciation of Russia at home and
A volume on "Traditional Law among
ians of Northern Russia," by Madame
, is much praised as an excellent ad-
ional literature. The centenary
ustrous Russian critic, Belinsky, who
ominant as an interpreter of Shake-
ras celebrated this year, and the Gov-
has seen fit to relax some of its sever-
icting numerous authors, both Rus-
foreign. Possibly another year will
proved state of affairs in liter-
-
The progress in science, literature,
during the year, has been very en-
g; on the whole. Light literature, in-
has been greatly in-
nd poetry (lyrical as well as dramatic)
ed abundant fruit. The number of this
books is noted as almost incredible.
variety of topics is gone into, and nearly
ide of treatment has been employed.
mu, however, there are few new
nd these are said to be of not much
cegazar, who stands at the head of
masts, has reprinted three of his
, but has written almost nothing.
omez, Novo, Selles, Zapatas,
named with praise by the critics for
line. The fourth and fifth vol-
the "Transactions of the Royal Acad-
ary," have been published, and con-
umber of good papers on Spanish his-
tiquities. There are also quite a
of noteworthy volumes dealing with
matters of importance, in both Span-
European history, together with es-
says, articles in journals, reviews, etc., on con-
temporary events. Provincial history and
ography are still much in favor, and sever-
al additions have been made to books on these
points. In archeology, numismatics, and other
branches of history, much activity has been
manifested, which has led to valuable publica-
Translations from English, French, and
other languages have increased in variety and
excellence, and numerous costly reprints have
found buyers and readers.

Sweden. — Literary matters in Sweden this
year have been in general quiet, though
Strindberg, the champion of the new literary
school, has roused public attention and pro-
duced much excitement by attacking, in one
of his novels, a chief dogma of the Church,
and in others pleading for Rousseau's evan-
gel in place of the gospel of Christianity. Tales
and novelettes are numerous, and some lyric
and dramatic poetry has appeared. Snolisky
and Rydberg are named as the head of the
poets in Sweden. Scientific literature is well
represented by several works published during
the year, and by an index to the transactions
of the Swedish Academy of Sciences. Legal
science and literature are also successfully and
actively cultivated. Numerous contributions
to history have been made in volumes upon
Charles XII, Gustavus III, and others, to-
gether with valuable memoirs of later kings
of Sweden and their times. "The History of
Swedish Printing" (1783-1883), of which two
volumes have been issued, is very highly praised
by competent critics; and a great work of bibi-
ography, the "Swedish Book Lexicon," of Linn-
ström, has been brought to its completion. The
history of literature and the fine arts has re-
evived much attention during the year, and
several excellent books have appeared, such as
Warburg's monographs on the Swedish poet;
and historian Olof von Dalin, and on Möllêr,
and also Hafström's account of the practice of
the plastic arts in Sweden (1600-1861). Dur-
ing the year there have appeared, in addition,
numerous political pamphlets, several excell-
ently illustrated books, notes of travel, pic-
tures from peasant-life, etc.

LONSDALE. See page 54.

LOUISIANA. State Government. — The following
were the State officers during the year: Gov-
ernor, Samuel D. McEnery, Democrat; Lieu-
tenant-Governor, Charles Knobloch; Secretary
of State, William A. Strong, succeeded by Os-
car Arroyo; Treasurer, E. A. Burke; Auditor,
Allen Junell, succeeded by O. B. Steele; At-
torney-General, John C. Egan, succeeded by M.
J. Cunningham; Superintendent of Public
Education, Edwin H. Fay, succeeded by War-
en Easton. Judiciary, Supreme Court: Chief
Justice, Edward Bermudez; Associate Justices,
Felix T. Poche, Robert B. Todd, Thomas O.
Manning, and Charles E. Fenner.

Overview. — After the inundation of 1883, re-
ports were gathered from sixteen parishes as
to damages from inundation. The summary of
these reports shows that 38,048 acres of plant-
cane was lost, valued at $2,954,917. Of stub-
cle cane 17,037 acres was lost, valued at $2,
067,410. Of rice, 3,386 acres was lost, valued at
$108,898. Of cotton, 107,860 acres was lost,
valued at $2,058,833. Of corn, 59,977
acres was lost, valued at $1,102,497. Of peas,
potatoes, and miscellaneous crops, 17,543
acres was lost, valued at $297,224. The losses
amounted, in stock animals, to $538,079; in
buildings, fences, etc., to $674,170; in human
labor, $994,494; in expense of unsuccessful
defense of levees, $304,077; in other incidental
expenses, $126,044; making, in these parishes
alone, an aggregate of $13,061,910. The area
of arable lands inundated was estimated at
606,074 acres, and the amount of land to be
claimed by levee protection was estimated for
those parishes to be 1,857,700 acres.

While there are no trustworthy data by
which to calculate the losses by the inundation
of this year, there is good reason to believe
that the area overflowed and the damages re-
resulting are far less than in 1882.

Levees.—From the report of the Board of
State Engineers for the period from April 20,
1882, to April 20, 1884, it appears that during
that time 120 contracts for the construction of
levees were made, and nearly all of them have
been executed. The work done under these
contracts, and the unfinished work under prior
contracts, not completed in April, 1882,
amounted to nearly 100 miles of levee, requiring
8,099,638 cubic yards of earth-work, at a cost
of $887,970. The State during the same period
expended, for preventing or closing crevasses,
$35,000, making an aggregate cost of levee-
work for the period of $926,470.
The U. S. Mississippi River Commission, in
August, 1882, allotted $75,000 to close gaps in
levees between the mouths of Red river and
Cypress creek, and $110,000 to close gaps in
Pointo Coupee, all for levees in Louisiana, ex-
cept the 95 miles which was expended for levee-
work in Arkansas. The sum of $15,000 was
likewise allotted toward building the Bonnet
carro Levees, and other allotments were made
for the protection of levees during the late
flood. The levee-work in Louisiana, by the
U. S. Commission, nearly equals that done by
the State, being mainly above the mouth of
Red river, and it has cost the United States
Government $839,381.
The riparian parishes have expended on
levees, since 1881, large sums, reports from
ten parishes alone showing that $211,166 of
local and individual funds were expended.
Three railroad companies also expended $98,
450. Thus the total amount expended on
levees in Louisiana has been $2,048,000.

In the beginning of March, 1884, the levees
of Louisiana were in much better condition
than they have been for more than twenty
years, but the system has proved inadequate
for efficient general protection from overflow
during extreme floods of the Mississippi.

Above the mouth of Red river the crevasses
of 1884 are attributed to the fact that the
water rose higher than the tops of the levees;
entirely so, in the opinion of the board, in the
case of all that have occurred in levees built
under State or parish authority. To secure
any certain protection against overflow, the
levees, both below and above Red river, must
be made higher and stronger than they have
ever yet been built.

Finances.—The financial condition of the State
is encouraging. The brokerage in warrants
has practically ceased. There are no outstand-
ning warrants for previous years, and current
warrants are practically at par. The bonded
debt of the State is as follows:

<table>
<thead>
<tr>
<th>Bond Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidated bonds, 4 per cent, Act 121, 1,100</td>
<td>$11,875,000</td>
</tr>
<tr>
<td>Consolidated, stamped as $5 per cent, Act 121, 1,100</td>
<td>221,750</td>
</tr>
<tr>
<td>Total</td>
<td>$12,096,750</td>
</tr>
</tbody>
</table>

The first amendment to the Constitution, as
proposed by the General Assembly, has been
adopted by the people. The debt is now per-
manently fixed, and the uncertainty, litiga-
tion, doubt, and distrust that embarrassed
the State in her financial operations will proba-
ably cease.

Education.—On this subject the Governor uses
this language: "At no period in the history of
the State has there been such outspoken sen-
ment in favor of the education of the people,
the introduction of improved methods in teach-
ing, the employment of educated and trained
teachers, and the extension of the means for
elementary education. The people of this State
are prepared to approve any legislation that
will secure an effective system of free elemen-
tary instruction. I advise an entire change in
the common-school system, and recommended
that school precincts be presided over by local
boards or commissions, and that the existing
law be so changed as to permit each school pre-
cinct to tax itself for school purposes."
The Southern (colored) University is one of
the institutions whose maintenance is provided
for by the Constitution. There are 400 students
in attendance. It has preparatory, academic,
normal, and industrial departments.
The Louisiana State University and Agricul-
tural and Mechanical College is in a satisfac-
tory condition, with fair promise of increasing
success and usefulness. Its roll of students num-
bers nearly 500.
The number of educable youth between six
and eighteen years of age is 290,886, of whom
61,466 are in the parish of Orleans. In 1883
there were in 48 parishes reporting (12 includ-
ing Orleans, not reporting) 1,171 public schools,
921 white and 314 colored teachers, 22,093
white and 27,468 colored pupils; average daily
attendance, 33,651; average time taught, 41
months. In 1883, in the same number of parish-
es, there were 1,190 public schools, 904 white
and 875 colored teachers; 29,898 white and
29,593 colored pupils; average daily attendance, 40,836; average length of schools 4-17 months. Reports from 55 parishes excluding Orleans show a balance on hand, Dec. 31, 1881, of $62,286.63; receipts during the following year, $286,767.65, including $98,236.84 from current school fund, $60,803.71 from poll-tax, $38,780.78 from parish tax, and $18,520.44 from interest on 16 sections; expenditures, $293,545.98, including $189,700.36 for teachers' wages; balance, Dec. 31, 1882, $64,291.67. In 50 parishes, the balance, Dec. 31, 1882, was $53,199.77; receipts, $348,041.69; disbursements, $178,691.89; balance, Dec. 31, 1889, $70,079.80.

New Basin Canal and Shell Road.—From March 5, 1881, to Feb. 29, 1884, the departures of vessels of all classes through the New Basin Canal numbered 10,350, the tonnage of which amounted to 263,827 tons. The receipts of cash for the same period amounted to $35,553; of which $35,294 was for tonnage, $19,024 for towage, $3,309 from bridge toll-tailgate, $189 from city toll-tailgate, $4,507 from logs, $1,161 from rents, $4,885 from the outer bridge. The fact that nearly 300 vessels arrive by this canal each month, indicates its value to the commerce of Louisianna; but no improvement can be made otherwise than from receipts for toll on tonnage, which is limited by the Constitution to ten cents a ton.

Charity Hospital.—During 1883 a building and sewerage fund of $35,000 was secured from voluntary donations. This, with $25,000 of the general fund, was more than enough to pay for improvements. The extension will accommodate about 130 women and children, forming a needed special department for sick children. The admissions in 1883 were 1,152, being more than the total of 1882. The number of visiting patients also increased from 6,000 in 1883 to 8,769 in 1884. At the close of 1883 there were 620 patients in the hospital. The hospital gave relief during the year to 113 orphans. The institution is out of debt. The Sisters of Charity still contribute their gratuitous services.

Deaf-Mutes and Blind.—The building now occupied by the Louisiana State University and Agricultural and Mechanical College was formerly the Deaf and Dumb and Blind Institute. Since these people were dispossessed of that building, they have been cared for but inadequately. It will be necessary to provide additional buildings, as the present ones are totally unfit for the accommodation of any increased number of students.

The Penal Institution.—The convicts are cared for by a lessee, who, during this administration, the Governor says, has provided liberally for them in food, clothing, and medical attention. It will require a large outlay in cash to make the Penitentiary an industrial institution, in the purchase of machinery and materials. Besides, objection will be raised to this system by a large class of citizens, who will complain that their skilled labor is brought into competition with convict labor. It is a popular demand in the alluvial portions of the State to confine the convicts to levee work, under the immediate authority of the State.

Political.—The Republican State Convention was held in New Orleans on the 5th and 6th of March. Delegates to the National Convention of the party were chosen, and the following State ticket was nominated:

Governor, John A. Stevenson; Lieutenant-Governor, W. M. Burwell; Attorney-General, John H. Stone; Secretary of State, F. W. Liggins; Superintendent of Public Education, B. F. Flanders; Treasurer, A. Duperier; Auditor, Claudius Mayo.

For Attorney-General, Alfred Shaw was afterward substituted; and for Treasurer, M. F. Bonzana. Mr. Stevenson died on his sugar-plantation, on the 27th of June. He was born in Kentucky in 1818, and went to New Orleans in 1830, where he was afterward prominent as a business-man. He opposed secession, but went with the State, and was made a captain in the Confederate provisional navy. He was a member of the State Constitutional Convention of 1879. At the election on the 22d of April, the Democratic candidates were chosen, to wit: Governor, Samuel D. McEnery; Lieutenant-Governor, Charles Knobloch; Secretary of State, Oscar Arroyo; Attorney-General, M. J. Cunningham; Auditor, O. B. Steele; Treasurer, E. A. Burke; Superintendent of Public Education, Warren Easton. The vote for Governor was declared as follows: Democratic, 28,794; Republican, 48,823; Lieutenant-Governor, Democratic, 21,628; Republican, 41,537. Constitutional amendments relating to the judiciary were ratified, as was also (51,784 against 44,539) one fixing the interest on State bonds at 3 per cent. for five years, from Jan. 1, 1880, and 4 per cent. thereafter, and authorizing a State tax of three mills for that purpose, and limiting the State tax to six mills for all purposes. The Legislature, consisting of 31 Democrats and 28 Republicans in the Senate, and 83 Democrats and 15 Republicans in the House, convened on the 12th of May, and adjourned on the 10th of July. On the 30th of May, James B. Eustis, Democrat, was chosen United States Senator. At the election on the 4th of November, the following vote was returned: Republican presidential electors, 46,347; Democratic, 62,540; scattering, 458. One Republican (Second District) and five Democratic Congressmen were declared elected. The Republican electoral and congressional tickets received much support from the sugar and rice planters, who are interested in a protective tariff, and from other independent citizens, who, however, had little confidence in the party management in the State. Conventions held in New Orleans on the 30th of August expressed their views and organized the movement. A convention of colored men had been held in the same city on the 21st of January, to protest against the
reduction of the tariff on sugar. Besides resolutions on this subject, this convention passed a resolution asking Congress to appropriate a portion of the surplus in the national Treasury in aid of education.

Cotton-Trade of New Orleans.—The following table shows the receipts of cotton at New Orleans by rail and water during the year ending September 1:

<table>
<thead>
<tr>
<th>ROUTES</th>
<th>1883-’84</th>
<th>1882-’83</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Red river</td>
<td>104,089</td>
<td>103,425</td>
</tr>
<tr>
<td>Cachita river</td>
<td>90,735</td>
<td>90,061</td>
</tr>
<tr>
<td>Arkansas river</td>
<td>8,906</td>
<td>8,906</td>
</tr>
<tr>
<td>Mississippi and smaller tributaries</td>
<td>892,162</td>
<td>995,690</td>
</tr>
<tr>
<td>Total by river</td>
<td>995,073</td>
<td>995,649</td>
</tr>
<tr>
<td>By rail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morgan Railroad from Houston</td>
<td>184,775</td>
<td>141,955</td>
</tr>
<tr>
<td>Illinois Central</td>
<td>825,969</td>
<td>427,140</td>
</tr>
<tr>
<td>Texas Pacific</td>
<td>146,198</td>
<td>367,827</td>
</tr>
<tr>
<td>New Orleans and N. E. Railroad</td>
<td>79,656</td>
<td>36,656</td>
</tr>
<tr>
<td>Mississippi Valley Railroad</td>
<td>181,494</td>
<td>228,910</td>
</tr>
<tr>
<td>Louisville and Nashville Railroad</td>
<td>10,789</td>
<td>8,951</td>
</tr>
<tr>
<td>Total by rail</td>
<td>995,055</td>
<td>1,086,128</td>
</tr>
</tbody>
</table>

The Mississippi Valley Railroad, completed in September, passes through a fine cotton country, and gives the city six trunk lines.

LUTHERANS. The Evangelical Lutheran Church in North America comprises four general bodies, consisting of forty-four district synods and eleven independent synods. The following is a general summary of the statistics of the general organizations for 1884:

<table>
<thead>
<tr>
<th>SYNODES</th>
<th>Number of Members</th>
<th>Number of Communicants</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Synod (North)</td>
<td>23</td>
<td>977,148,122,179,750</td>
</tr>
<tr>
<td>General Synod (South)</td>
<td>6</td>
<td>193,559,15,771,771</td>
</tr>
<tr>
<td>General Council</td>
<td>2</td>
<td>79,353,121,040,740</td>
</tr>
<tr>
<td>Synodical Conference</td>
<td>5</td>
<td>1,019,229,289,579,709</td>
</tr>
<tr>
<td>Independent Synods</td>
<td>11</td>
<td>1,043,2,119,566,938</td>
</tr>
<tr>
<td>Total</td>
<td>3,779</td>
<td>3,684,594,185</td>
</tr>
</tbody>
</table>

The table in the next column gives a summary of the statistics of the fifty-five district synods of the Lutheran Church, arranged according to the general bodies. The net increase during the year, according to the “Kalender,” was 126 ministers, 107 congregations, and 49,968 communicants; and within the past fifteen years the Lutheran Church has more than doubled its membership, numbers of congregations, and pastors.

The educational and charitable institutions number 19 theological seminaries, 20 colleges, 31 seminaries and academies, 15 young ladies’ seminaries, 38 orphan’s homes, hospitals, and asylums, and 9 immigrant missions. In 1884 there were 115 religious periodicals published, of which 89 are English, 45 German, 10 Swedish, 17 Norwegian, 9 Danish, and 1 Icelandic.

1. The General Synod.—The General Synod North was organized in 1821, and is therefore the oldest general organization in the United States.
LUTHERANS. 437

States. Its meetings are held biennially. The thirty-first convention was held at Springfield, Ohio, May 16, 1883. For the report of this convention see "Annual Cyclopaedia" for 1888. The thirty-second biennial convention will be held at Harrisburg, Pa., beginning June 4, 1885.

II. The General Synod (South).—The General Synod South was organized in 1868, and held its fourteenth convention in Charleston, S. C., April 18-21, 1884. The Rev. W. S. Boneham, D. D., of Savannah, Ga., presided. Delegates were present from the North Carolina, South Carolina, Virginia, Southwest Virginia, and Georgia Synods, the Mississippi Synod sending no delegates. The total number of delegates was twenty-nine, seventeen ministers and twelve laymen. Matters pertaining to missions and church extension, work among the freedmen, the establishment of an orphan's home, and a union of synods, claimed the attention of this convention. The work of home and foreign missions is under the supervision of a Board of Missions and Church Extension, consisting of three ministers and two laymen. Foreign mission work is carried on in connection with the General Synod (North). Rev. W. P. Swartz is under appointment to labor in the Guntoor station, in India. Contributions for this work, during 1892 and 1883, amounted to $1,053.73. Much of the territory embraced by the General Synod (South) is missionary territory. The contributions for home missions are at present chiefly devoted to the canceling of the indebtedness of the Richmond mission; while the district synods are severally prosecuting missionary work in their own extensive territories. The contributions for the Richmond mission, during 1882 and 1883, amounted to $3,629.88. To the work of home missions may be added the work among the freedmen of the South. This work is fraught with many difficulties, and is, therefore, very slow. The committees report five young men preparing for the ministry, one of whom has now finished his course and has taken charge of a congregation in Washington, D. C. The theological seminary heretofore existing at Salisbury, Va., was discontinued for want of proper support. The institution was removed to Newberry, S. C., and is temporarily under the care of Rev. Prof. G. W. Holland. Considerable time was devoted to the matter of a more general union of the synods south of the Potomac. In order to effect such a union, a diet was called to meet Nov. 10, 1884. On this date, delegates from the synods of North Carolina, Tennessee, South Carolina, Virginia, Southwest Virginia, Georgia, and Holston met at Salisbury, N. C. Rev. A. J. Bronen, D. D., of the Holston Synod, was the presiding officer. A basis of union, on purely confessional principles, was unanimously adopted, and a constitution was prepared, to be submitted for approval to the various synods represented in the diet, with a view to bring them all into connection with the reorganized general body.

III. The General Council.—The General Council was organized in 1837, and held its seventeenth convention at Monroe, Mich., Oct. 19-21, 1884. According to the usual custom, the morning was devoted to divine service, on which occasion the opening sermon was delivered by the Rev. Dr. A. Spaeth, of Philadelphia. In the afternoon the convention was regularly opened with the customary liturgical forms. Dr. Spaeth was re-elected president. All the synods were represented, except the Holston. Home, foreign, and immigrant missions occupied much of the time of this convention. Three years ago the work of home missions was reorganized and entrusted to German, English, and Swedish committees. The German committee aided missions in Canada, Michigan, Nebraska, Texas, New York, and Pennsylvania. In order to carry on these extensive operations, an appeal was made to the Church in the Fatherland for laborers, which awakened a wide-spread interest. Already forty-three young men are preparing in the mission house, at Kropf, Holstein, for this work. Several from other institutions have already come to America, and are engaged in mission work. More than fifteen men are at present engaged, at more than double this number of mission-stations. Contributions during the year amounted to $5,442.96; expenditures, $5,887.93. The English committee have been aiding missions in Ohio, Illinois, and Minnesota, and a travelling missionary in Dakota. There are now six missionaries under appointment, an increase of four since the reorganization of the missionary operations. Encouraging success has everywhere attended the efforts of the missionaries in gathering and organizing congregations, securing lots, and building houses of worship. Besides opening up new mission-fields, the several mission congregations have secured properties aggregating $38,000. Contributions during the year amounted to $3,815.01. The Swedish committee have extensive missionary operations in Illinois, Minnesota, Kansas, Utah, California, Oregon, Nebraska, Idaho, and Washington Territory, and in some of the Middle and Eastern States. Besides this, a great deal of missionary work is done by the pastors, who devote from one to three months to the service, and by the students of their theological seminary. The work of foreign missions is under the supervision of the executive committee. They report four missionaries and two native pastors in the Rahmundry mission, together with sixty-three teachers, colporteurs, and evangelists, and 846 pupils in the various schools. The baptized membership, including children, is 1,876. The contributions for this work, during the year, amounted to $10,379.18. The mission met with a heavy loss in the death of Rev. H. G. B. Artman, who died September 18, at the age of twenty-seven years. The immigrant mission in New York presents a favorable report. The receipts were $18,291.29, and the expenditures
$17,929.22. There were 15,750 guests taken care of during the year, many of whom received board and lodging gratis; 3,948 letters and cards were received and answered. A new wing was added to the immigrant-house, at a cost of $16,000.

All the morning sessions of the convention, and those of Saturday and Monday afternoons, were devoted to the consideration of the report of the committee on liturgical forms. The committee presented formulas for infant and adult baptism, confirmation, and confession and absolution. Much time was devoted to the consideration of the first of these formulas. The results of the council in this matter are to be sent down to the synods, and then come again before the Council for final action.

The report of the committee on a hymnal for infant schools was adopted, and the committee was authorized to publish the book in the name of the Council.

The Synodical Conference. This body was organized in 1872. It held its tenth convention at Cleveland, O., Aug. 18-19, 1884. Rev. J. Bading, of Milwaukee, Wis., presided. Representatives (thirty-six) were present from all the synods belonging to the body. The home-missionary operations of this body are very extensive, but are principally carried on by the district synods. The Conference has, under its own control, missions among the colored race of the South, stations being established in Arkansas, Louisiana, and Virginia. The contributions for this work amounted to $10,375.41. The contributions for foreign missions are principally given to societies in Europe.

Last year a theological seminary was completed at St. Louis, Mo., at a cost of $140,000. Considerable time at this convention was devoted to the discussion of Dr. Walther's thesis on the subject, "How objectionable it is to attempt to establish matters of faith by the writings of the fathers, and to bind the conscience by their decisions on points of doctrine." By the fathers are meant the early dogmatists of the Lutheran Church. The thesis maintains that the writings of the early Christian fathers, and of the devout teachers of the Lutheran Church, are treasures for which we can not sufficiently thank God; but they can not have decisive authority, because, as he holds: 1. It is contrary to Scripture. It is against the authority of the Scriptures, which are the only pure sources of all knowledge of faith, the only infallible rule of doctrine, the only authoritative judge in all doctrinal disputes. It is against the doctrine of the Scriptures, for it is contrary to the nature of the Christian's faith, which he has established on the Scriptures, that is, resting on the word of God, and therefore divinely sure; and it is contrary to the warning of the Scripture with reference to trusting to men in matters of faith, and against all doctrines of men, as also against the Scripture admonition to prove all things. 2. It is a relapse into anti-Christian papacy.

MADAGASCAR. A large island near the eastern coast of Africa. It first acquired importance for the commercial nations of Europe about 1810, when Radama, a chief of the Hova tribe, established his residence at the eastern part of the island. In 1817 he made a treaty with Great Britain. English missionaries made great progress in Christianizing the people until the advent to the throne of the Queen Ranavoniana, in 1839, after which relations with Europe were interrupted for a long period. In 1861 her son, Radama II, succeeded to the throne, with whom Lambert concluded a treaty in the name of France. His Queen, Rasoheri- na, succeeded him in 1868, in consequence of a revolution. She concluded treaties of friendship and commerce with England and the United States in 1885. Her sister, Ranavoniana II, who came to the throne in 1868, professed Christianity, and was largely guided in her efforts to improve the people and introduce civilized institutions by the English Presbyterian missionaries. In 1868 she entered into a new treaty with France. The French proclaimed a protectorate over Madagascar in the eighteenth century, but never exercised sovereign rights. Roman Catholic missionaries have been active on the island, though without succeeding in gaining much of a footing among the Hovas. In the western part, where the Sakalava dwell, they have acquired more political and religious influence. There is some trade with the coast of Madagascar, but the principal trade of the Hovas is with the English colony of Mauritius. American and German traders have a considerable share in the foreign commerce.

In 1879 a quarrel arose between the Hova Government and the French consul at Antananarivo, the capital. The heirs of M. Labode, the former consul, had sold a piece of land of which he stood possessed to the Père Cass, the head of the Roman Catholic missions. The Malagasy Government denied that Labode owned more than a life-tenancy in the land, declaring that the constitution of the country debarred the late King from granting the absolute ownership of land to foreigners. When the French heirs exhibited the title-deeds, the ministers pronounced them to be forgeries. A bitter controversy ensued, in which M. Cass, the French representative, assumed a hectoring tone. He charged the Hova ministry with ill will in general toward French claims, which was poorly concealed under appearances of politeness. When the Foreign Minister pro-
posed to refer the question to the arbitration of a neutral power, M. Casas suggested a reconciliation on his authority, and declared that its repetition would involve a rupture between France and Madagascar. The question was here allowed to rest, the Catholic missionaries proceeding to put up their buildings against the protest of the Malagasy authorities. In 1881 another dispute was caused by the Toulé street. Four sailors, while landing goods from a French merchant-ship, were killed by the subjects of the King of Boëni, a vassal of the Hova Queen. The captain of a French man-of-war, which was sent to inquire into the matter, reported that it was a simple case of murder and robbery. The Hova officials, after an investigation, represented that the Frenchmen were smugglers, that they had supplied French Arab colonists with arms and ammunition, which are contraband, and that they and the Arabs fired first on the people of the chief of Majanga who came to stop the unlawful traffic. The French consul, Théodore Meyer, demanded the death of four of the culprits, and a heavy indemnity for the murder in addition to the value of the merchandise. He and his successor, M. Baudais, refused to discuss the Malagasy version of the affair. To the peremptory demand of Baudais for reparation, the Malagasy Government gave way, and paid under protest the $6,000 indemnity for the four French citizens who had been "foully assassinated."

The French Government, at this time in pursuit of its aims of colonial expansion, contemplated the enlargement of the French settlements and the strengthening of its political position in Madagascar. Its agents in Madagascar had pictured in glowing colors the colonial and commercial possibilities of the island, and particularly the importance of the Bay of Diego Suarez as a site for a naval and trading station, offering the French access to the rich coasts of Aden and Perim. It claimed a protectorate over the northwest coast, in virtue of a treaty concluded with a Saikalan chief in 1841. The Malagasy Government also claimed the sovereign rights over this country, which, before and after the French treaty was invaded by Hova troops. The English advisers of the Hova ministry, satiated by political, religious, and commercial jealousy, encouraged them to deny that France possessed any territorial rights in Madagascar. The military and political protectorate accorded in the treaty with the Saikalas was construed as a right of agricultural and commercial colonization on Malagasy territory, with the privilege of keeping an armed force for the protection of the settlement. The whole island of Madagascar, including the district already occupied by France, was declared to be subject to the Malagasy Queen. To forestall the French designs of extending the colonial operations in Madagascar, the Hova Government sent an Englishman in 1882 to the northwest coast with a commission to inquire into the extent of the French trade, and the character and number of the French settlements. M. Baudais sent the Prime Minister a dispatch charging the Hova Government with "willfully provoking France, whose patience had already lasted too long," and maintaining the absolute right of France to the protectorate over the northwest coast. The Hova, relying on English support, prepared to resist the French design by force of arms. Captain Le Timbre, commander of the naval station in the Indian seas, whose ship was anchored in Tamatave, laid an embargo on a Hova vessel that was embarking soldiers and arms for the west coast, and forbade the landing of arms for the Malagasy Government from the American ship Stillman.

The Hova Government then, in July, 1882, announced the intention of sending an embassy with the Foreign Minister Ravoninahitrinirivo to its head to Paris, with full powers "to do whatever they may judge necessary to restore friendly relations between France and Madagascar. The ambassadors were accompanied by two Englishmen, Messrs. Tacchi and Pickering. Their object was not merely to explain the claim of exclusive dominion to the French Government, but to seek the support of other governments. They failed in obtaining effective support from England or other powers, though treaties were signed with Great Britain, Germany, and the United States, recognizing the Hova state as the only organized government on the island. Meanwhile Admiral Pierre was sent with a squadron to the coast of Madagascar.

The French admiral arrived in Madagascar in May, 1883. He immediately issued a proclamation to the Hova authorities on the northwest coast, ordering them to leave their posts and abandon the country. The Malagasy Government replied by expelling the Catholic missionaries and all the French officials from the Malagasy dominions, giving the priests, who had just completed their fine cathedral, a safe-conduct to the French lines. On June 13 occurred the bombardment and occupation of Tamatave. The Shaw incident connected with the operations was taken up by the English Government in a manner that seemed to indicate an intention to uphold the Hovaas and their missionary abettors; but when it was closed by the payment of an indemnity and an apology to the aggrieved missionary, no further opposition was offered to the French proceedings. Before the bombardment the French commander presented an ultimatum to the Hova Government, and on its rejection captured Tamatave, driving out the Hova troops and taking possession of the custom-house.

Fortified with the American and German treaties, the envoy returned to Paris. President Ferry received them with polite reservation. In the course of their conferences he received the report of the operations at Tamatave,
whereupon he dismissed them with the decla-
ration that negotiations were useless, as the
French admiral and consul had ample author-
ity and all the necessary instructions to treat
with the Hova Government.

After the return of the mission to Antan-
arivo, negotiations were reopened with the
French representatives. At the second con-
ference, Nov. 24, 1888, the French insisted on
the ultimatum. The principal demand is that
the Government of the Queen shall recognize
the French protectorate over the northwest
cost by renouncing the sovereign rights based
on the capitulations obtained from the Saka-
laya leaders in 1841 and 1842, and acknow-
edging the validity of the French treaty with
the Sakalavas. The territory claimed by France
was defined as extending from Cape Amber in
the north to 16th south latitude, including the
town and river of Mojangs. The French pleni-
potentiaries pointed out that their position was
conceded in the treaty of 1863 with Radaiza,
and in the convention agreed to by the Mal-
gasy ambassadors, Nov. 23, 1885, and that the
title of Queen of Madagascar does not imply
domination over all the territories included un-
der the geographical name of Madagascar.
The Hovas answered that the Queen had paid
$240,000 in lieu of the stipulations of that con-
vention, and that the de facto rule of the Queen
over the disputed district was proved by the
presence of Hova troops and officials and the
collection of customs duties. On the 26th the
Hovas sent in writing their definitive reply to
the effect that the Queen could not agree to
evacuate any territory, whereupon Admiral
Galibier and M. Baudais declared the negotia-
tions at an end.

Queen Rasalavona II died July 13, 1888, and
was succeeded by her niece, Rasendranoro Ra-
navalona III, born in 1860, who married the
husband of the late Queen, the Prime Minister
Ranarimokana.

The French admiral in December, 1888, bom-
barded the Malagasy ports, destroying a con-
siderable amount of English property. The
Hovas, despairing of foreign aid, now offered to
accept the terms demanded by Admiral Gali-
ber, viz., the abandonment of the northern dis-
trict between Cape St. André and Cape Bel-
lona, the right of leasing or owning land in the
Malagasy kingdom, and the payment of 1,000-
000 francs war indemnity and the value of the
foreign property destroyed. The civil repre-
sentative of the French Republic insisted on
imposing the further condition that the Queen
should acknowledge the suzerainty of France
over Madagascar, and agree not to accept the
protectorate of any other power. This was
rejected, whereupon the military operations
were resumed, and Fenerive, Mahanoro, Mahela,
Mananari, and Marunzang were bombarded,
and a blockade declared along the whole coast.
Whereas the enemy had not appeared, the Hovas
defended themselves effectively. The
French held only Tamatave and Majunga. They
brought volunteers from Nosii-Bé and Réa-
union and mercenaries from Mozambique, but
were unable to accomplish any results on land.
The Hova Government in the capital, 150 miles
inland, across mountains and pathless forests,
felt secure from attack. The blockade was
not effective, but only turned the trade away
from the chief ports to others that the few
French ships could not guard. No attempt was
made to occupy the disputed territory nor to
capture the Hova fort at Antomboka on Cape
Amber. Vohimar on the northeast coast was
bombarded and the English quarter destroyed,
while the part where the Hovas live escaped.
At Maroantsetra, on the east coast, the French
effected a landing. Towns near St. Malo were
bombarded twice, and one five times. The
places on the coast near Tamatave were
shelled twice, but no troops were landed. The
French had an ally in the Sakalava Princess
Benao, who rebelled against the Hova Queen
and attacked the camp of the Hovas at Manos-
garivo, on the northwest coast. Not receiving
the expected assistance from the French, she
was beaten and made her submission. Near
Tamatave, which was strongly fortified by the
French, the Hovas encamped just out of range
of the naval guns.

During the unhealthy season, while military
operations were at a stand-still, the French re-
sumed diplomatic negotiations. They invited
the Malagasy authorities to propose a demarka-
tion-line, but found them determined in the
resolve to relinquish no part of the mainland,
though they offered to cede the islands of No-
sifaly and Nosimplicito, and to pay an indemnity.
Admiral Galibier then broke off his negotiations
with the Hova Governor of Tamatave. On
May 8 he was succeeded in the command by Ad-
miral Miót, who established a blockade at Ma-
haoro, which had become the center of the
foreign trade, and announced that the block-
ade of Fenerive and other ports would follow.
The Hovas made overtures to the new com-
mander, who in a dispatch dated June 10, 1884,
declared that friendship could only be restored
by accepting his terms, which were the uncon-
ditional surrender of the northwest coast and
indemnities to French citizens who had suf-
f ered by the military operations. With Admiral
Miót large re-enforcements were sent. The
French Cabinet obtained a vote of credit of
5,000,000 francs for the operations of the year.
The effective strength of the naval and military
force attached to the Indian station was eleven
war-vessels with 2,294 officers and sailors and
1,242 infantry and artillery, besides 600 marine
fusillers from Toulon, and 600 volunteers from
Réunion. No movement from Tamatave or the
Hovas' lines was made after January, when a
French force of 500 men was driven back
with loss. In July fresh troops brought the
French force up to 1,500. The Hovas were
intrenched six miles behind Tamatave in great
force. Their regular troops were armed with
Remingtons. They had four or five field-guns
The blockade established with the red naval force seriously hampered the French officers permitted neutral enter the ports, but placed them unsa

The port of Maa the east coast was shelled August French began to occupy the district wished to annex. In September s were occupied in the bay of Pas

The Sakalavas, hitherto been hostile, received the acibly. Malagasy volunteers enlisted such service. About the 1st of Octo

h carried a fort south of Vohemar, Kill

The French were not strong or the contemplated advance upon the rival, and after the beginning of the in November such an operation was until the return of the dry winter. The English Government endeavored about an understanding between the two nations; but could exert no in the "Methodist preachers" whom blamed for causing their difficulties 

The following State officers during the year: Gov. Ederick Robie, Republican; Secretary Joseph O. Smith; Treasurer, S. A. Hol.

The aggregate was $14,715.62; for the year ending Dec. 31, 1883, $34,918.97; total for the two years, $96,937.88; which is an average of $48,178.94 per annum, or nearly one fourth of the entire indebtedness of all the counties. The net reduction of indebtedness of the cities, towns, and plantations of the State for the year ending March, 1883, appears to have been $986,655.81; for the year ending March, 1884, $453,998.05; total for the two years, $1,441,389.88, which is an average of $421,611.95 per annum, or about one twenty-third of the entire municipal indebtedness of the State.

Savings—Banks.—In 1860 the deposits in savings-banks were $1,466,457.56. In 1879 the deposits amounted to $23,052,633, while at the close of 1884 the aggregate was $32,913,888.10, which shows in twenty-five years a gain in deposits of $21,859,950; in five years an increase of nearly $10,000,000, and further comparison shows an increase of $3,409,665.65 over the total deposits of two years ago. The number of banks is fifty-four. The present number of depositors having open accounts is 100,680, or about one sixth of the entire population. The average amount to each depositor is $311.44. The banks, however, are able to pay to the depositors four per cent, and hold a reserve fund, for the protection of depositors against possible losses, of $1,100,000. The aggregate dividends paid to the depositors in 1884 was $1,384,444.80; and the State received, for taxes upon deposits, as a part of the school fund, $191,817.00—a larger revenue than it ever before received in a single year from that source.

College of Agriculture.—This college has graduated 206 students. Of this number who are in active business, 11 per cent, are engaged in the so-called professional pursuits, while 89 per cent, are engaged in varied industries, in which agriculture and mechanical pursuits are well represented. The whole number of students who have enjoyed the advantages of this institution is 592, which does not include 92 students now catalogued in the college. The institution has received from the State $200,319, and there has been expended on grounds, buildings, apparatus, stock, etc., $150,000. The appropriations from the State for current expenses have been less than $3,000 per annum.

Industrial School for Girls.—The Industrial School for Girls is at Hallowell. For some time the single building has been overcrowded, and new demands for admission have had to be refused. This makes necessary another edifice. Private benevolence has been enlisted for this institution, and during the year an appeal
for aid was made by its trustees and friends, and thereby about $7,000 have been secured. This is in addition to the $13,500 contributed from private sources and expended on buildings now in use. The new private subscription has been used, under the direction of the trustees, to build the foundations, walls, and roof, and to finish the exterior of a substantial edifice of granite and brick.

Reform School.—The health of the boys for the past two years has been remarkably good. The average number in the school has been about one hundred. The law of the last Legislature, providing for the establishment and maintenance of a mechanical department at the Reform School, in which boys can be instructed, has been complied with. Instruction in this department began Dec. 21, 1884, under the charge of a competent mechanic. In a building erected for the purpose, equipped with benches, tools, and machinery, and capable of accommodating twenty-four boys. The results, and the proficiency made by the boys, in this department, seem to vindicate the wisdom of the law establishing it.

Insane Hospital.—This institution has a substantial structure of granite and brick, which is complete with all the modern improvements that science and experience have devised. It is the growth of the public contributions of forty-four years. The State has now provided all that seems necessary for the wants of its insane for many years. The trustees have built during the past two years two new pavilions, capable of accommodating about 100 patients, and giving an opportunity for a better classification. The necessity for a full completion of the buildings required an expenditure of $138,443.44 in excess of the appropriation of $450,000. The receipts of the hospital for 1884 were $100,000, and the disbursements $97,000. The present resources are $31,295.84, and the liabilities $30,513.56, leaving the net resources $94,797.84. The number of patients Dec. 1, 1884, was 460, the same number as in 1883, but the whole number under treatment during the year was 667, of whom 237 were discharged.

Home for Soldiers' Orphans.—The appropriation for the Bath Military and Naval Orphan Asylum for the past two years, amounting to $14,000, was fully expended for the orphan children of the soldiers and sailors of the State. There are fifty-two children under its care. The number of orphans coming under the provisions and requirements of the present law as competent for admission is constantly diminishing.

State Prison.—The State Prison at Thomaston appears to be in better condition, so far as cost is concerned, than for many years. From 1858 to 1880 the average annual cost of the prison to the State was upward of $32,000. In 1880 it was $24,551; in 1881, $16,754; in 1882, $14,742; in 1883, $10,510; in 1884, $9,200. The earnings of the convicts in 1884 would pay the salaries, pay-roll, and all the incidental expenses of the prison, amounting to $17,550, leaving only $9,200 for the State to pay.

At present but two departments of work are carried on within the walls—harness and carriage making. The total net assets of the prison at the close of 1883 were $91,458.33, and at the close of 1884, $102,972.61.

The number of new convicts received in 1883 was 70; discharged, 44; total number at the end of the year, 160. The number received in 1884 was 52; discharged, 49; total number at present, 163.

Manufactures.—There was an increase of spindles in the cotton-mills in the State in 1883, as compared with 1880, of 90,621, and of employés, 3,099. During 1884, 6,852 spindles were added. At the beginning of the year, woolen manufacture generally was very depressed, but later in the season there was marked improvement, and the mills of the State did a lucrative business. The amount of starch manufactured in 1884 was larger than ever before, the product being 7,186 tons. Several new factories were erected. The granite business was well sustained; the product of the State quarries was increased over the previous year; and the yield of lime-kilns nearly equaled the large product of 1883. The lime manufactured in Knox county amounted to 1,403,603 barrels in 1883, and 1,478,996 barrels in 1884. The manufacture of leather still remains in a very unsatisfactory condition, and that of lumber has fallen off somewhat; the cut of logs on the principal waters being about 17 per cent. less in 1884 than in 1883. Boat and shoe manufacturing made a marked improvement in 1883, and maintained its prosperous condition during 1884.

Shiiping.—In this interest Maine has been of late years more favored than most other States. According to the census of 1880, the number of vessels of all rigs, including steamers, owned in the State, was 2,674, having a capacity of 628,954 tons. This shows an increase of capacity for 1883 over 1880 of 18,837 tons; an increase for 1884 over 1883 of 332 tons, and an increase for the four years of 19,866 tons—which is an average of 4,917 tons per annum. There appears to have been a gain of 3,125 tons in fishing-vessels belonging in the State in 1884, as compared with 1880—an average of 789.94 tons per annum. The tonnage of vessels of all rigs built in Maine annually since and including 1880 is as follows: 1880, 83,847.15; 1881, 68,999.28; 1882, 75,084.91; 1883, 74,708.13; 1884, 64,401.87.

Poli& Exane.—By returns from nearly all the cities, towns, and plantations of the State, it appears that there was an increase of taxable polls for the year ending March, 1888, of 2,036,
e year ending March, 1884, of 1,495; be two years, 3,583. This indicates e of 8,793 in population for the and 6,485 for the latter year, making se of 15,167 in population for the or an average increase of 7,098 per There also appears to have been an taxable valuation of estates for 1888 835, and for 1884 of $1,029,482; to e for the two years, $4,917,387—an ' $2,468,666 per annum.

The liabilities of the State on Jan, 1, 1884, were $8,465,921.58; on all accounts, $3,693,560.67; net ass., $3,775,338.31. The liabilities of es on all accounts Jan, 1, 1884, were 37; resources on all accounts, $238, et indebtedness, $92,496.79. Net in s of towns and cities, 1884, $9,925, total public indebtedness, not includi-district indebtedness, $18,408,041.17.

— Steady progress has been made in the last 20 years. Maine has adopted a graded system, where there have been increased fahigher education. Many are some of the statistics showing al progress for the school years 1881- 1884:

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</tr>
<tr>
<td>NUMBER OF WEEKS IN SESSION</td>
<td>265</td>
<td>270</td>
<td></td>
</tr>
<tr>
<td>NUMBER OF PUPILS IN TOWNS</td>
<td>172</td>
<td>190</td>
<td></td>
</tr>
<tr>
<td>ATTENDANCE OF PUPILS IN TOWNS</td>
<td>670</td>
<td>733</td>
<td></td>
</tr>
<tr>
<td>TOTAL OF TEACHERS INSTRUCTORS</td>
<td>166</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCHOOLS: ENTERING</td>
<td>24</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>MEANING</td>
<td>66</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>ATTENDANCE</td>
<td>66</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>BUILDINGS</td>
<td>2,903</td>
<td>2,903</td>
<td></td>
</tr>
<tr>
<td>NUMBER OCCUPIED</td>
<td>2,903</td>
<td>2,903</td>
<td></td>
</tr>
<tr>
<td>NUMBER UNOCCUPIED</td>
<td>2,903</td>
<td>2,903</td>
<td></td>
</tr>
<tr>
<td>TOTAL VALUATION OF ALL FARMS AND FARM-</td>
<td>$2,967,846</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF HORSES IN TOWNS, APRIL 1, 1884, 247</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF COWS, 127</td>
<td>127</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF NEW-BORN CATTLE, 125-</td>
<td>491</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF SHEEP, 532</td>
<td>532</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUMBER OF SWINE, 43,994</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAXABLE VALUATION OF ALL REAL ESTATE, $12,208,103</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAXABLE VALUATION OF ALL PROPERTY USED FOR MANUFACTURING, $20,710,467</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

State Penitentiary.—The laws of the State make it incumbent upon the Governor and Council to distribute an annual appropriation for disab ped soldiers and seamen. The appropriation for 1883 and 1884 was $20,000 for each year. During the year 1888, $19,818.46 was carefully paid out to 771 State pensioners, as follows, viz.: To 263 invalids, 165 widows, 88 mothers, 27 fathers, nine guardians of adult and orphan children, and one dependent sister. During 1884 the number of applications received was 742. The number making application for the first time was 140, and of the total, 223 do not receive United States pensions. The appropriation of 1884 was exhausted.

Prohibition.—By a resolution of the last Legislature, an amendment to the Constitution of the State, forever prohibiting the sale of intoxicating liquors, was submitted to the voters of Maine, at the election in September, and the return of 70,788 votes in its favor, and 28,811 votes against it, indicates an emphatic declaration in favor of prohibition. During the year there were 518 prosecutions for violating the liquor law, and 163 prosecutions for maintaining nuisance, making a total of 991 cases, against an average of 888 for the past six years.

On this subject the Governor addresses the Legislature as follows:

A new system of taxation was inaugurated in 1874, which has received popular sanction. This departure has already removed a part of the burden from the great productive industries of the State, by placing a more just proportion of the tax on corporations and other business industries never before taxed. The Governor and Council of 1894 assessed a tax of this character on railroad, telegraph, telephone, and express companies, amounting to $10,546,62. This tax on insurance companies paid into the office of the State Treasurer the past year amounts to $16,766.44.

Political.—The Republican State Convention met in Bangor in April, chose delegates to the National Convention of the party, and nominated Frederick Robinson for re-election as Gov-
MAKART, HANS.

Governor, and candidates for presidential electors. Among the resolutions adopted were the following:

Resolved, That this convention request the coming Republican National Convention to provide that in all future national conventions representation shall be proportionate to the Republican vote cast for President in the last preceding presidential election.

We reaffirm our approval of the policy of prohibiting the dram-shop, and our sympathy with every judicious movement looking to the amelioration of the evils of intemperance.

The Democratic State Convention met in Bangor June 17, and took similar action. Its nominee for Governor was John F. Redman. The platform included the following:

Resolved, That we are in favor of some system of reform in the civil service by which appointments to office may be separated from the domain of party politics, and not be either a reward to partisans or used to secure further advancement of those in whom the power of appointments resides.

The straight Greenback State Convention was held in Augusta on the 8th of April. W. F. Eaton was nominated for Governor. On the following day the Prohibition Home Protection party nominated William T. Eustis for Governor. In October the “People’s” party held a convention in Portland, adopted a platform, and nominated presidential electors favorable to Benjamin F. Butler. At the election on the 8th of September the Republicans were successful. Four Republican Congressmen and 31 Republican Senators were elected, unanimous delegations. Of the members of the House of Representatives, 116 are Republicans, 53 Democrats, 2 Greenbacks, and one an Independent. The vote for Governor gave Robie 78,818; Redman, 58,508; Eaton, 3,017; Eustis, 1,151.

The following was the vote for Presidential Electors on November 4: Blaine, 73,209; Cleveland, 52,140; Butler, 3,952; St. John, 2,160; Blaine’s plurality, 20,069.

MAKART, HANS, an Austrian painter, born in Salzburg, in 1840; died in Vienna, Oct. 3, 1884. He entered the Vienna Art School after completing his studies in the gymnasium in 1868. In a few months he was dismissed for lack of talent. A painter, who knew the talent of the silent, dreamy youth, and the rare aesthetic sensibility that he inherited from his mother, took him into his atelier in Munich, where he assisted in arranging collections of art. In 1881 Piloty received him in the list of his pupils, of whom he soon became the most famous. His first painting was “La Volonte in Prison,” painted in 1869. The “Afternoon Entertainment of Noble Venetians,” produced the following year, showed his talent for brilliant and harmonious coloring. He readily found purchasers, and with the price of the two pictures made art-journeys to Paris, London, and afterward to Italy. His next works were “Falstaff in the Washbasket,” “The Knight and the Water-Fairies,” a “Leda,” and a landscape with Roman ruins. These lesser productions were followed by his famous series of paintings, “The Plague in Florence,” which established his reputation, and created an excitement throughout Germany. The admiration of his brilliant coloristic treatment, wonderful carnation, and powerful composition, was offset by the indignation of those who were shocked at the daring realism with which he depicted the orgies of the despairing. The painter’s fame as a colorist was extended by the “Modern Amorettes,” painted in 1868. In 1869 he accepted the invitation of the Emperor Francis Joseph to settle in Vienna. The large studio given him was furnished so splendidly and fantastically that it became one of the sights of Vienna. Here he painted his two allegorical pictures called “Abundance,” representing the gifts of the earth and of the sea. Finding his rooms too small, he built a new atelier, which he decorated in like manner, in 1872. In 1878 he completed the colossal canvas of “Catherine Cornaro.” His design for the curtain of the Stadttheater and the scenes “Cleopatra” had more of the dramatic power of his first great work. The winters of 1875 and 1876 he spent, under his doctor’s ad
ce, in Egypt, where he made the studies for: "Nile-Hunt" and other Egyptian pieces. All designs and arrangements for the historical occasion of April 24, 1879, in honor of the Emperor's silver wedding, were an artistic triumph. That year he completed the series of The Five Senses, which was followed by other symbolical representations, such as "Morning," " Noon," "Evening," and "Night," summer and "Spring." etc. The "Chase Diana," painted in 1880, was one of the most representations of the German type of sale beauty. The "Entry of Charles V into twerp" gave new force to the moral inscription at Makart's nudes, and was devised as a glorification of flesh. The "Two ends," "The Dream," "In the Spring," and other smaller paintings, are modest well as lovely presentations of female beauty. "Messalina" is a portrait of the actress Ariotto Wolter. His last great work was a death," a strange and powerful conception. Makart worked with astonishing rapidity, finishing the large painting of the "Hunt on the Elbe" in two weeks. Frequently he made no sketches, but painted the figures directly upon canvas. In the handling of the brush, in painting, in the treatment of stuffs, in impasto, in brilliant effects of color, Makart produced results that had never been attained in Germany, and that had an improving influence in the technique of painting, while reduction of the art by him to a merely ornamental and decorative standard was deplored by many as a deteriorating influence. The inane of the great colorist affected the taste the nation, and extended to all the trades which color is employed for ornament. German painter did as much as Makart to kindle the love of art that characterizes younger generation in Germany. His style was as free from artificial as from the mummified academic tradition. His color was always open, free from envy and hate, and reckless of all selfish considerations. He was so careless in choosing and mixing mediums, that some of his finest paintings were already faded; so absorbed in his art he thought less about his own success, taking his only relaxation in memory stas, that his neglect to take the needed rest brought on his early death. Makart was once married—first to a Vienna lady, who bore him two children; and in 1882, several weeks after her death, to a theater-dancer, Licha Linda, who carefully tended him through his last sufferings.

**MANITOBA.** The most important events affecting Manitoba in 1884 are those connected with the Ontario boundary case. (See DOMINION OF CANADA.) The effect of the decision in the case is to give Manitoba an eastern boundary at the meridian traversing the north-western angle of Lake of the Woods. However, the Government, at the time of the Manitoba Boundary Extension Act, held the western boundary of Ontario to be the meridian of the junction of the Ohio and Mississippi rivers, therefore the Province of Manitoba, where not conflicting with Ontario, is entitled to the territory east of that meridian. Therefore, according to that view, the southeastern boundary of Manitoba is the meridian of the northwestern angle of Lake of the Woods as far north from the Minnesota border as English river; thence up the English river, through Lakes Lonely and Joseph, and down the Al-bany river, eastward, to the meridian of the Ohio and Mississippi; thence north along that meridian till it intersects the northern parallel of the province.

**CLIMATE.** The average rainfall in 1884 was, for August, 4.22 inches; for September, 5.39 inches—a quantity much in excess of the average. The following indicates the temperature, rain, and cloud in Manitoba from May 15 to September 15, from 1872 to 1884, and also contrasts Manitoba with Toronto and Montreal for the year 1884:

<table>
<thead>
<tr>
<th>CLIMATIC FEATURES</th>
<th>Manitoba</th>
<th>Toronto</th>
<th>Montreal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average, 1872-75.</strong></td>
<td>silky</td>
<td>silky</td>
<td>silky</td>
</tr>
<tr>
<td><strong>Temperature:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>61°11'</td>
<td>59°56'</td>
<td>61°28'</td>
</tr>
<tr>
<td><strong>Mean highest</strong></td>
<td>78°44'</td>
<td>74°74'</td>
<td>78°72'</td>
</tr>
<tr>
<td><strong>Mean lowest</strong></td>
<td>46°73'</td>
<td>49°01'</td>
<td>47°44'</td>
</tr>
<tr>
<td><strong>Mean daily range</strong></td>
<td>31°66'</td>
<td>19°78'</td>
<td>30°77'</td>
</tr>
<tr>
<td><strong>Absolute highest</strong></td>
<td>98°7</td>
<td>96°5</td>
<td>91°01'</td>
</tr>
<tr>
<td><strong>Absolute lowest</strong></td>
<td>29°0</td>
<td>20°7</td>
<td>25°5</td>
</tr>
<tr>
<td><strong>Range of period</strong></td>
<td>64°7</td>
<td>57°6</td>
<td>65°1</td>
</tr>
<tr>
<td><strong>Rain:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of days</td>
<td>44</td>
<td>46</td>
<td>47</td>
</tr>
<tr>
<td>Amount of rain</td>
<td>18.098</td>
<td>14.085</td>
<td>12.088</td>
</tr>
<tr>
<td>Heaviest fall in 24 hours</td>
<td>3.20</td>
<td>0.255</td>
<td>1.900</td>
</tr>
<tr>
<td><strong>Cloud:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean amount</td>
<td>0°47</td>
<td>0°47</td>
<td>0°50</td>
</tr>
<tr>
<td>No. of days cloudy</td>
<td>19</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>No. of days clear</td>
<td>115</td>
<td>115</td>
<td>115</td>
</tr>
</tbody>
</table>

**Crops.**—The hay cut in Manitoba during 1884 was: prairie hay, 226,854 tons, yielding 1.72 tons an acre; of cultivated grasses and clovers, 7,067 tons, yielding 1.26 tons an acre.

The wheat-crop, the all-important element in a Manitoba farmer's life, has been carefully watched for several years. The years 1883-84, on account of their extreme coldness, and of the rains in 1884, have afforded strong tests as to the capabilities of the province to produce wheat. Farmers have already learned not to sow on spring-plowed land if it is possible to have fall-plowed; and to sow as early as the season will permit, for the spring months are often very dry. Good crops may be harvested from spring plowing if the grain be well bedded and get an even start; but it ripens later than that on fall plowing, hence is more exposed to frosts. In 1888 the acreage under wheat was 260,843 acres. The yield was over 5,658,335 bushels, or an average of 31.90 bushels an acre. In 1884 the acreage was
809,281 acres, an increase of over 18 per cent., yielding a total of 6,804,182 bushels, and an average of 22 bushels an acre.

The following are the fixed standards for grading Manitoba wheat:

No. 1. Hard Spring Wheat.—Red Fyle wheat containing not more than 10 per cent. admixture of softer varieties; must be sound, well cleaned, and weigh not less than 65 pounds a bushel, imperial measure.
No. 2. Hard Spring Wheat.—Same as No. 1, only reasonably clean, and weigh not less than 60 pounds a bushel.
No. 3. Spring Wheat.—Must be sound, well cleaned, and weigh not less than 50 pounds a bushel.
No. 4. Spring Wheat.—Same as last, only reasonably clean, and weigh not less than 55 pounds a bushel.
No. 5. Spring Wheat.—Comprises all wheat fit for warehousing, good enough for No. 2, and weighing not less than 50 pounds to the bushel.
Rejected Spring Wheat.—Comprises all wheat fit for warehousing, but too low in quality or otherwise unfit for No. 5.

All good wheat, slightly damp, is reported "no grade," with the inspector's notation as to quality and condition. All wheat in a heating condition, or too damp for safe warehousing, or with any considerable admixture of foreign grain or seeds, or that is badly baled, is reported "condemned," with inspector's notation as to quality and condition. Wheat containing "goose wheat" is graded "rejected." Wheat containing small or sprouted kernels, in however slight degree, is in no case graded as high as No. 1 in its class.

The average date of beginning to cut wheat is August 27, and of ending, September 28.

The following table exhibits the varieties of grain sown, the dates of ripening, and the average per acre:

<table>
<thead>
<tr>
<th>VARIETY</th>
<th>Average Ripened</th>
<th>Averaged In Bushels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Aug. 19</td>
<td>per acre.</td>
</tr>
<tr>
<td>Red Fyle wheat</td>
<td>92 43</td>
<td>22 43</td>
</tr>
<tr>
<td>White Fyle wheat</td>
<td>92 44</td>
<td>22 44</td>
</tr>
<tr>
<td>White Russian wheat</td>
<td>Sept. 3</td>
<td>22 28</td>
</tr>
<tr>
<td>Golden Cross wheat</td>
<td>Aug. 27.</td>
<td>22 15</td>
</tr>
<tr>
<td>Lost nation wheat</td>
<td>Sept. 4</td>
<td>22 15</td>
</tr>
</tbody>
</table>

As compared with 1888, the oat-crop of 1894 is four bushels an acre below the average, and the quality is slightly lower. In 1888 there were sown 215,431 acres of oats, which yielded 9,478,564 bushels; in 1884, 188,487 acres, yielding 5,107,079 bushels.

Barley, in 1884, averaged two bushels an acre more than in 1888. The acreage in 1883 was 60,281 acres, with an average yield of thirty bushels an acre, or a total of 1,808,480. This year there were only 40,396 acres, an average of 32 28 bushels an acre, and a total yield of 1,343,928 bushels. The falling off in the acreage of both barley and oats is attributed to lack of facilities for marketing the grain. Peas yielded well, though the area sown is not large. Potatoes yielded 201 bushels an acre in 1884; turnips, 392 bushels; mangolds, 355 bushels; carrotes, 228 bushels; and beets, 375 bushels. Wild hops, "equal to the best grown in Ontario or York State," are very abundant, and are being picked for market in some districts. Nearly all the garden-fruits are found growing wild in abundance. Many cultivated varieties of them have been introduced. Apples have not yet been very successful, chiefly because the young trees were raised in southern climates. Experiments have been tried with grafting on native roots, and the results are very satisfactory. Some large farmers have undertaken to import apple-trees from Russia.

Protecting Stock.—A very strict veterinary sanitary service is in operation in the province, to prevent the spread of disease among farm stock. Several horses were destroyed on account of disease. The inspectors travel throughout the province, wherever called on, and have done much to prevent the spread of disease.

Beets to Europe.—During the year the people of Manitoba have directed much attention to the proposed route to Europe via Hudson Bay. Experiments are being made, under the auspices of the Federal authorities, to test the feasibility of sending beets to Europe direct, by the route via the Canadian Pacific Railway. The object is to ascertain whether the beets will arrive in good condition for consumption.

Property Values.—During 1888 the prices of property in Manitoba fell to their normal market value. Prior to that date the prices demanded for property were high. At the reduced valuation the assessments show about $100,000,000 to be the value of property in Manitoba.

New Railways.—Railways to Hudson Bay are projected, and one is actually under construction. The two points aimed at by the people are Port York and Port Churchill—ports on the St. Mary's river, at the mouth of Nelson river, the latter at the Churchill. One railway is projected east of Lake Winnipeg, another west of it. The country traversed by the western section is, as a whole, suited for farming, and will probably be taken up by settlers as soon as the road is built. Railways were also extended toward the northern parts of the province. There are two running northwesterly from the Canadian Pacific Railway, through the well-settled districts; these are the Souris and Rocky Mountain Railway and the Manitoba Northwestern Railway. Both are constructed, and the latter is in running order for many miles.

Legislation.—In 1884 the province was divided into counties, with municipal government for both counties and townships. The School Acts were consolidated. The Medical Act was amended in the matter of the formation of the board. Election laws were made more stringent. A Bureau of Industries was organized. And strict laws were passed concerning diseases among animals.
MARYLAND.

In the Third District, the Prohibition candidate received 555 votes, and in the Fourth 691. The following is the registered vote of Maryland:

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>White</th>
<th>colored</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegany</td>
<td>3,678</td>
<td></td>
<td>3,678</td>
</tr>
<tr>
<td>Anne Arundel</td>
<td>5,734</td>
<td></td>
<td>5,734</td>
</tr>
<tr>
<td>Baltimore</td>
<td>60,440</td>
<td></td>
<td>60,440</td>
</tr>
<tr>
<td>Baltimore county</td>
<td>15,880</td>
<td></td>
<td>15,880</td>
</tr>
<tr>
<td>Carroll</td>
<td>2,927</td>
<td></td>
<td>2,927</td>
</tr>
<tr>
<td>Cecil</td>
<td>7,095</td>
<td></td>
<td>7,095</td>
</tr>
<tr>
<td>Charles</td>
<td>8,116</td>
<td></td>
<td>8,116</td>
</tr>
<tr>
<td>Dorchester</td>
<td>3,059</td>
<td></td>
<td>3,059</td>
</tr>
<tr>
<td>Frederick</td>
<td>10,097</td>
<td></td>
<td>10,097</td>
</tr>
<tr>
<td>Garrett</td>
<td>2,273</td>
<td></td>
<td>2,273</td>
</tr>
<tr>
<td>Harford</td>
<td>5,590</td>
<td></td>
<td>5,590</td>
</tr>
<tr>
<td>Howard</td>
<td>2,677</td>
<td></td>
<td>2,677</td>
</tr>
<tr>
<td>Kent</td>
<td>2,942</td>
<td></td>
<td>2,942</td>
</tr>
<tr>
<td>Montgomery</td>
<td>4,162</td>
<td></td>
<td>4,162</td>
</tr>
<tr>
<td>Prince George's</td>
<td>4,080</td>
<td></td>
<td>4,080</td>
</tr>
<tr>
<td>Queen Anne's</td>
<td>3,945</td>
<td></td>
<td>3,945</td>
</tr>
<tr>
<td>Somerset</td>
<td>8,332</td>
<td></td>
<td>8,332</td>
</tr>
<tr>
<td>St. Mary's</td>
<td>2,980</td>
<td></td>
<td>2,980</td>
</tr>
<tr>
<td>Talbot</td>
<td>5,104</td>
<td></td>
<td>5,104</td>
</tr>
<tr>
<td>Washington</td>
<td>2,355</td>
<td></td>
<td>2,355</td>
</tr>
<tr>
<td>Wicomico</td>
<td>9,015</td>
<td></td>
<td>9,015</td>
</tr>
<tr>
<td>Worcester</td>
<td>3,056</td>
<td></td>
<td>3,056</td>
</tr>
</tbody>
</table>

Taxation and Assessment.—The State tax rate for public schools and State debt, for 1884, is 18¢ cents on $100. The assessment that forms the city and county tax basis is:

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allegany</td>
<td>$19,154,000</td>
</tr>
<tr>
<td>Anne Arundel</td>
<td>10,094,997</td>
</tr>
<tr>
<td>Baltimore</td>
<td>60,440,000</td>
</tr>
<tr>
<td>Baltimore county</td>
<td>15,880,000</td>
</tr>
<tr>
<td>Carroll</td>
<td>2,927,000</td>
</tr>
<tr>
<td>Cecil</td>
<td>7,095,000</td>
</tr>
<tr>
<td>Charles</td>
<td>8,116,000</td>
</tr>
<tr>
<td>Dorchester</td>
<td>3,059,000</td>
</tr>
<tr>
<td>Frederick</td>
<td>10,097,000</td>
</tr>
<tr>
<td>Garrett</td>
<td>2,273,000</td>
</tr>
<tr>
<td>Harford</td>
<td>5,590,000</td>
</tr>
<tr>
<td>Howard</td>
<td>2,677,000</td>
</tr>
<tr>
<td>Kent</td>
<td>2,942,000</td>
</tr>
<tr>
<td>Montgomery</td>
<td>4,162,000</td>
</tr>
<tr>
<td>Prince George's</td>
<td>4,080,000</td>
</tr>
<tr>
<td>Queen Anne's</td>
<td>3,945,000</td>
</tr>
<tr>
<td>Somerset</td>
<td>8,332,000</td>
</tr>
<tr>
<td>St. Mary's</td>
<td>2,980,000</td>
</tr>
<tr>
<td>Talbot</td>
<td>5,104,000</td>
</tr>
<tr>
<td>Washington</td>
<td>2,355,000</td>
</tr>
<tr>
<td>Wicomico</td>
<td>9,015,000</td>
</tr>
<tr>
<td>Worcester</td>
<td>3,056,000</td>
</tr>
</tbody>
</table>

Baltimore Statistics.—Baltimore was founded in 1729. It was incorporated in 1791. Its population then was 20,000; its population now is over 450,000. The assessed value of the property in the city then was $32,400,000; the assessed value of Baltimore property in 1883 was $248,805,393, to which should be added Baltimore's share in Baltimore county, which is equal to $30,000,000, and Baltimore property unassessed, which amounts to $150,000,000, making a total of over $428,000,000.

The city has thirty-three banks, with a combined capital of over $11,000,000. The census of 1890 showed that it had 2,214 industrial establishments, with 55,885 employes, and annual products of over $70,000,000. In 1888 it received 30,375,000 bushels of grain and 1,250,000 barrels of flour. The total value of the imports was $12,448,809; of the exports $14,973,304. During the year the city exported...
41,444 hogsheads of tobacco, 245,987 bales of cotton, and 11,783,997 gallons of petroleum.

**EXPENSES OF THE CITY GOVERNMENT.**

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1889</td>
<td>$4,047,704.95</td>
</tr>
<tr>
<td>1890</td>
<td>$3,913,020.94</td>
</tr>
</tbody>
</table>

The total funded and guaranteed debt of the city is $37,516,991.73. Against $21,779,923.41 of this sum the city has assets that are productive and interest-bearing. On $10,759,908.25 additional, the water department, Western Maryland Railroad, and passenger railway companies are compelled under special city ordinances to pay the interest, leaving $4,877,932.07 to be provided for by the tax levy. Of the funded debt, $23,081,289.18 bears 6 per cent. interest; $11,728,611.54 bears 5 per cent. interest; and $1,856,800 bears 4 per cent. interest.

The public schools in Baltimore number 122. The total value of the buildings, exclusive of the lots on which they stand, is $1,155,696. There are 890 teachers and 38,086 pupils. The Baltimore City College has 604 students; the Western Female High School has 554, and the Eastern Female High School has 445. There are 19 male grammar-schools, 30 female grammar-schools, 30 male primary schools, 30 female primary schools, 5 public English-German schools, and 14 colored schools. The colored pupils are fewer than 5,000. The expenses of the school system vary from $500,000 to $1,000,000 per year.

The receipts of leading products during the year ending Nov. 1, 1884, were: flour, 608,306 barrels; wheat, 17,181,877 bushels; corn, 6,321,801; oats, 1,623,847; rye, 566,500; barley, 31,857; coffee, 273,418 bags; tobacco, 38,602 hogsheads.

**MASSACHUSETTS. State Government.**—The following were the State officers during the year: Governor, George D. Robinson, Republican; Lieutenant-Governor, Oliver Ames; Secretary of State, Henry B. Peirce; Treasurer, Daniel A. Gleason; Attorney-General, Edgar J. Sherman; Auditor, Charles R. Ladd; Insurance Commissioner, John K. Tarbox; Judicary, Supreme Court: Chief-Justice, Marcus Morton; Associate Justices, Walbridge A. Field, Charles Devens, William Allen, Charles Allen, Waldo Colburn, Oliver Wendell Holmes, Jr.

The Legislature met on January 2, and adjourned on June 4, after passing 335 acts and 81 resolves, among which were these:

- Increasing the pay of members of the Legislature from $500 to $600 per each regular session; raising the salary of the Governor from $4,000 to $5,000, and of the Secretary of State from $3,500 to $4,000; prohibiting the employment of minorities under eighteen inmercantile establishments more than sixty hours a week; authorizing ten or more persons to form a corporation to examine and guarantee titles of real estate; dividing Worcester county into two districts for the registry of deeds, the northern district, with offices at Fitchburg, and the Worcester district; abolishing the election sermon; providing for the furnishing of free text-books and school supplies to the pupils of the public schools; incorporating the town of Bourne taken from Sandwich; providing for taking the decennial census and the industrial statistics of the commonwealth; relating to the transfer of stock in corporations; preventing discrimination by life-insurance companies against persons of color; establishing a reformatory for male prisoners at Concord, and removing the State Prison back to Boston; for the protection of harbors and navigable waters; to prevent the sale or exchange of property, under the inducement that a gift or price is to be part of the transaction; for ascertaining by proper proofs the citizens entitled to the right of suffrage; regulating elections and voting thereat; incorporating the city of Watertown; providing a State tax of $2,000,000; to improve the civil service of the Commonwealth and the cities thereof; establishing a homœopathic hospital for the insane at Westborough; changing the name of the State Reformatory School at Westborough to the Lyman School for Boys; concerning foreign corporations having a usual place of business in the State.

An amendment to the Constitution was proposed, giving the Legislature power to provide more than one place of meeting in towns for the election of officers under the Constitution. This goes to the Legislature of 1886 for action. The biennial-sessions amendment was defeated.

The following propositions also failed to pass:
- to allow women like privileges as voters with men, in the conduct of municipal affairs, to submit to the people a prohibitory amendment, and an amendment abolishing the poll-tax as a prerequisite to the right to vote.

**Finances.**—The financial statement is as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Funded debt, Jan. 1, 1894</td>
<td>$21,481,820</td>
</tr>
<tr>
<td>Funded debt, Jan. 1, 1886</td>
<td>$21,482,480</td>
</tr>
<tr>
<td>Decrease</td>
<td>$4,060</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staging funds, Jan. 1, 1884</td>
<td>$18,036,673</td>
</tr>
<tr>
<td>Staging funds, Jan. 1, 1894</td>
<td>$17,781,793</td>
</tr>
<tr>
<td>Decrease</td>
<td>$254,880</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual increase, allowing for payment of loans ($4,000)</td>
<td>$209,092</td>
</tr>
<tr>
<td>Actual expenses, 1886</td>
<td>$4,117,248</td>
</tr>
<tr>
<td>Decrease</td>
<td>$4,061,156</td>
</tr>
</tbody>
</table>

**ESTIMATES FOR 1886.**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payments for all purposes</td>
<td>$4,924,829</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receipts, in addition to cash on hand, but not including direct tax</td>
<td>$4,500,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deficit</td>
<td>$424,829</td>
</tr>
</tbody>
</table>

A State tax of $1,500,000 will cover this deficiency and leave upward of $1,000,000 in the treasury. The twenty-fourth annual abstract of polls, property, taxes, etc., as assessed May 1, 1884, shows these results: There are 22 cities and 225 towns in the Commonwealth. An increase over the previous year in the total valuation of $25,582,717 is reported. Twenty cities, 205 towns report an increase; 2 cities, 11 towns a decrease. An increase in real estate of $23,841,415 is reported. Twenty-two cities, 248 towns report an increase; 86 towns a decrease. A decrease in personal estate of $6,768,960 is reported. Eleven cities, 158 towns report an increase; 11 cities, 166 towns a decrease. An increase in the total tax of $3,580,117 is reported (State tax $500,000); 19 cities, 158 towns report an increase; 8 cities, 159 towns a decrease. Rate of tax per $1,000: 18 cities, 154 towns report an increase; 6
cities, 132 towns a decrease; 3 cities, 38 towns the same rate. The highest rate, viz., $35, is assessed in the town of Monroe, county of Franklin; lowest rate, viz., $4.30, in the town of Sow, county of Middlesex. Fifteen towns report rates from $30 to $27; 17 cities, 96 towns, $15 to $19.60; 5 cities, 109 towns, $10 to $14.80; 53 towns, $4.40 to 9.80. An increase in the number of polls of 13,079 is reported. Nineteen cities, 197 towns report an increase; 3 cities, 112 towns a decrease; 16 towns the same number. Rate of tax on polls: 7 towns report an increase; 4 towns a decrease; 23 cities, 315 towns the same rate. The lowest rate, viz., $1, is assessed in the city of Chelsea, and the towns of Revere and Waltham, in the county of Suffolk. The highest rate, viz., $2, is assessed in 21 cities and 315 towns. Rates from $1.50 to $1.92 are assessed in 8 towns. An increase of 8,561 dwelling-houses is reported. Twenty cities, 22 towns report an increase; 1 city (number incorrectly reported in previous years), 54 towns a decrease; 48 towns the same number. An increase of 6,551 in the number of acres assessed is reported. Five cities, 112 towns, report increase; 6 cities, 79 towns, decrease; 11 cities, 133 towns, the same number.

"Money at interest," etc. An increase in the amount "secured by mortgage" of $1,531,849 is reported. Nine cities, 94 towns report an increase; 5 cities, 105 towns a decrease; 8 cities, 135 towns the same report; of the latter, 6 cities, 112 towns reported no figures in 1883; 8 cities, 144 towns report no figures in 1881. An increase in the amount "unsecured" of $1,588,667 is reported. Ten cities, 91 towns report an increase; 5 cities, 140 towns a decrease; 7 cities, 93 towns the same report; of the latter, 2 cities, 70 towns reported no figures in 1883, 7 towns reported no figures in 1884. An increase in the "total" of $3,032,490 is reported. Fifteen cities, 99 towns report an increase; 5 cities, 132 towns a decrease; 2 cities, 73 towns the same report; of the latter, 1 city, 87 towns reported no figures in 1883; 4 cities, 50 towns report no figures in 1884. An increase in the amount of "money on hand," etc., of $2,026,942 is reported. Eleven cities, 72 towns report an increase; 8 cities, 66 towns a decrease; 5 cities, 186 towns the same report; of the latter, 3 cities, 164 towns reported no figures in 1883; 4 cities, 190 towns report no figures in 1884. A decrease in the amount of public stocks, etc., of $4,398,040 is reported. Eight cities, 57 towns report an increase; 9 cities, 53 towns a decrease; 5 cities, 512 towns the same report; of the latter, 8 cities, 164 towns reported no figures in 1883; 4 cities, 194 towns report no figures in 1884. A decrease in the amount of stocks in corporations, etc., of $23,389,858 is reported.

The following are the totals of assessment:

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of polls</th>
<th>Total of deposits</th>
<th>Increase in number of depostors during the year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1884</td>
<td>511,907</td>
<td>$268,790,146</td>
<td>$84,908</td>
</tr>
</tbody>
</table>

The authorized force of organized militia is 336 officers and 4,486 enlisted men; the real strength at present is 806 officers and 8,881 enlisted men. The Inspector-General reports that the average attendance, exclusive
of the bands, for 1884, shows an increase over 1883 of 326 at the annual drill, and 416 at the encampments.

Public Schools.—The entire amount raised in 1884 for all school purpose was $6,502,359.34, providing an allowance of $19.84 for each child between five and fifteen years of age. Of school age there are 336,135 persons, showing an increase for the year of 6,736. Of all ages there were 342,013 pupils in the public schools, and schools were maintained an average of nine months' time in all the cities and towns, and showed 90 per cent. of attendance based on the average membership. Thirty-eight cities and towns sustained 126 evening-schools, affording instruction to 18,251 pupils. Satisfactory results are shown in the operation of the free text-book law, which went into effect in August. Among other advantages, the new system reduces in a large amount the expense of providing school-books and school-supplies formerly paid by individuals, enables the teachers to effect prompt organization of their schools and a better classification of the pupils at the beginning of the terms, increases the attendance, removes mortifying distinctions possible under the old system, and makes the public schools of the Commonwealth literally free schools, offering equal opportunity to all children alike.

Provincial Laws.—On this subject the Gov-
ernor says:

In 1856 and 1867 authority to publish the acts and laws of the Province of Massachusetts Bay was given, and to the present time four volumes have been issued and distributed, and another volume is in the hands of the printer. The expenditures amount to $77,565.75. The work, without doubt, has been well done; but would it not be well to inquire what limit to its extent and cost is reasonably proper? The Governor and Council, to whom the authority for publication is committed, can exercise but little discretion in this matter, in view of the grants of money made by the Legislature from time to time.

Insane.—It is estimated that there are now 6,800 insane persons in the population of the State, of whom 5,000 are from time to time in general hospitals and asylums, and about 700 more maintained at public charge. The probable increase in the number of the insane is not less than 500 a year. The State hospitals are four—at Worcester, opened in 1838; at Taunton, opened in 1854; at Northampton, opened in 1858; and at Danvers, opened in 1879—and the cost of their construction has been something like $4,300,000, of which about $3,000,000 was expended between 1872 and 1884 at Worcester and Danvers. These two new hospitals now contain a little more than 1,400 patients, for whose reception and accommodation the State has incurred a construction cost of nearly $2,100 each. The two hospitals at Taunton and Northampton now contain something more than 1,100 patients, at an estimated construction cost of $1,320,000, or $1,100 for the reception and accommodation of each patient. The State asylums for the chronic insane are two—at Tewksbury, opened in 1866, and at Worcester, opened in the old buildings of the Worcester Asylum in 1877. The construction cost of the Worcester Asylum is estimated at $430,000 up to this time, having been accruing since 1881; the cost of the Tewksbury Asylum buildings has not much exceeded $100,000; making a total for these two asylums of about $530,000 for the reception and accommodation of about 690 patients, or something less than $750 for each. The total cost of the State hospitals and asylums, for construction and equipment, has been, by this estimate, about $4,830,000, and their convenient capacity can not be estimated at more than 8,000. They now contain 3,267, having passed the limit of 8,000 during the summer of 1882.

Besides the six State hospitals and asylums, there are three small asylums, essentially public—The McLean Asylum, the oldest in Massachusetts; the Boston Lunatic Hospital, and the Essex County Receptacle, at Ipswich. The McLean Asylum, opened in 1818, is owned by a private corporation, existing for public purposes (the Massachusetts General Hospital). The Boston Lunatic Hospital, opened in 1839, is owned by the city of Boston. The Ipswich Receptacle is owned by Essex county.

The costs of these three asylums for construction probably exceeds $250,000 each for the McLean Asylum and the South Boston Asylum, and $50,000 for the Ipswich Asylum. They contain about 400 patients, two thirds of whom are chronic cases, being about equally divided between private patients and paupers. The McLean Asylum contains no paupers, and its average weekly cost for each patient is $15. The Boston Lunatic Hospital contains about 188 patients of the city, with a few private patients, and its average weekly cost for each patient is nearly $8. The Ipswich Receptacle contains about 50 paupers, whose average weekly cost is $2.50; and a few private patients, for whom $3 a week is paid.  

The Prison System.—There are three penal State institutions—the State Prison, at Boston, for male prisoners convicted of grave offenses; the Massachusetts Reformatory, at Concord; the Reformatory Prison for Women, at Shirley, for such female prisoners as the courts consider likely to yield to its reformatory influences; and the State Workhouse, at Westborough (to be removed to Bridgewater) which receives a portion of the tramps, vagrants, etc. There are also twenty-one county prisons. The Boston House of Industry, at Deer Island, is the largest prison in the State. Its population consists mainly of persons (male and female) committed for non-payment of fines imposed for drunkenness and other offenses against public order and decency, with a few on term sentences.

On Sept. 30, 1888, the number of prisoners in county prisons and accommodations was 1,711. Of these, 295 (372 men and 23
women) were held in the jails to await trial or examination, and 3,886 were sentenced.

The Commissioners of Prisons, as directed by the Legislature of 1894, prepared for use at the State Prison the buildings in the city of Boston formerly occupied as said prison, and he warden transferred all the prisoners, about 30, that had not been removed to the Massachusetts Reformatory. The work of repairing the workshops and setting machinery is still going on, and, contracts for all the available men having been made, the regular course of management will soon be established.

The proceeds received by the State from all contracts, for the labor of the convicts for the year ending Sept. 30, 1884, amounted to $70,174. For the year ending Dec. 31, 1884, $8,472.13, allowed for overwork, was credited to the accounts of 539 men.

The Reformatory—The experiment of a reformatory for male prisoners has been successfully inaugurated at Concord. About 140 men are now in the institution, and a considerable increase is certain. No proposals for employment have been accepted, but various industries will soon be introduced. In most of the essential features, this institution adopts a system that has been so successfully in operation at the Reformatory for Women.

Massachusetts Hospital for the Insane.—The trustees of the Westborough Hospital have been appointed, and the plans submitted by them for the alteration of the buildings and all necessary additions thereto have received the approval of the Governor and Council. These plans apparently answer the wants of the hospital in due provision for the treatment, comfort, convenience, and safety of 325 patients, and for the physicians, officers, and attendants: State Primary School, Monson, 431; State Industrial School for Girls, Lancaster, 65; State School for the Feeble-minded, Boston, 141.

Civil Service.—On this subject the Governor, in his message to the Legislature, in January, 1885, says:

The Civil Service Commissions, appointed under the provisions of an act passed by the last Legislature, have prepared rules which have been approved by the Governor and Council and which will go into operation on the 30th of March next. Under the authority given them by the act, the Commissioners have limited the application of these rules to those branches of the service in which a considerable number of persons are employed, and in which there is the strongest temptation to use the appointing power for personal or partisan purposes. The system proposed is believed to be perfectly plain and practical, and well adapted to show the relative fitness of applicants for the public service and to secure impartiality in the selections for appointment. The statute now in force seems to be ample in scope and power for present needs, and an extension of the system may be secured by the adoption of other rules.

Political.—The following were the candidates of the different parties for State officers:

<table>
<thead>
<tr>
<th></th>
<th>Republican</th>
<th>Democrat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governor</td>
<td>George D. Robinson</td>
<td>William C. Endicott</td>
</tr>
<tr>
<td>Lieut-Governor</td>
<td>James B. Southwick</td>
<td>James B. Southwick</td>
</tr>
<tr>
<td>Secretary</td>
<td>Henry B. Price</td>
<td>Jeremiah Crowley</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Daniel A. Goss</td>
<td>Charles March</td>
</tr>
<tr>
<td>Auditor</td>
<td>Charles S. Ladd</td>
<td>John Hopkins</td>
</tr>
<tr>
<td>Attorney-Gen.</td>
<td>Edgar J. Sherman</td>
<td>John W. Cummings</td>
</tr>
<tr>
<td>Prohibition</td>
<td>Matthew J. McCaffrey</td>
<td>John R. Swaney</td>
</tr>
<tr>
<td>Lieut-Governor</td>
<td>Henry H. Faxon</td>
<td>Charles E. Phillips</td>
</tr>
<tr>
<td>Secretary</td>
<td>George Kempson</td>
<td>Albert B. Roche</td>
</tr>
<tr>
<td>Treasurer</td>
<td>Charles E. Phillips</td>
<td>Albert B. Roche</td>
</tr>
<tr>
<td>Auditor</td>
<td>William W. Sherman</td>
<td>Israel W. Andrews</td>
</tr>
<tr>
<td>Attorney-Gen.</td>
<td>Samuel M. Fairchild</td>
<td>Thomas W. Clarke</td>
</tr>
</tbody>
</table>

At the election on November 4, the Republican ticket was successful. The following was the vote for Governor: Republican, 189,345; Democratic, 111,899; Greenback, 24,383; Prohibition, 8,881; scattered, 34.

For Secretary of State, the vote was: Republican, 165,148; Democratic, 108,678; Greenback, 24,914; Prohibition, 8,934; scattered, 6.

The vote for presidential electors was: Republican, 146,724; Democratic, 122,532; Greenback, 24,383; Prohibition, 9,993. Democrats were elected to Congress in the Fourth and Sixth Districts, and Republicans in the other ten. The Legislature of 1885 consists of 84 Republicans, 5 Democrats, and 1 Independent Republican in the Senate, and 166 Republicans, 76 Democrats, and 3 Independents in the House.

Metallurgy. Iron and Steel.—The "Regia" process for the manufacture of iron and steel, as described by its inventor, Mr. John Lewthwaite, consists chiefly in scattering upon the metal, when it is completely melted, as equably and gradually as possible certain mineral ores in a finely disintegrated or granulated condition, in proportions which are to be determined according to the character of the result sought. The effect is an electro-chemical combination under the operation of which the metal be.
comes much more fluid, and the impurities are thrown off possibly in a gaseous form or as oxides. Mr. Lewthwaite found that by his method he could produce from common Cleveland pig-metal, with only 4 per cent. of titanic ore, an iron or mild steel, said by smiths, engineers, etc., to be superior even to Low Moor. The process is applicable equally to the Bessemer and Siemens methods, to converters beneath the ordinary blast-furnaces, and to the foundry. From another ore than the titanic, which he did not name, the author could produce a very desirable description of metal never before known to be formed in the foundry, viz., a fine steel casting, soft and pleasant to file, turn, etc., which, when heated to a cherry-red and plunged into water, tempers like ordinary steel, without any show of water-cracking. By the same process or method bronze and alloys of all colors and kinds may be made.

M. Gruner has conducted a long series of experiments upon the relative oxidability of cast-iron, steel, and wrought-iron, with a view to the determination of their adaptability for constructions exposed to rusting and the action of sea-water. Experiments made by submitting different kinds of iron to the action of acidulated water can not be depended upon, for the want of evidence that the action of moist air or of sea-water is the same as that of acidulated water. M. Gruner made use of an apparatus in which twenty-eight similar polished plates of different kinds of steel and iron were equally exposed to the same action, of moist air, of sea-water, and of acidulated water. In twenty days of experiments with moist air, the chrome steels were oxidized more, and the tungsten steels less, than the ordinary carbon steels. The cast-iron was oxidized less than the steels and wrought-iron, and among them the white specular iron (spiegel), containing 20 per cent. of manganese, less than the gray iron. The weight loss was about half that of the steels. Sea-water was found to attack iron, dissolving it like acidulated water, but under entirely different conditions. In a very short time chloride of iron was found in the bath. Unlike moist air, sea-water attacked cast-iron more strongly than steel, and white specular iron with especial energy. The tempered steels were less attacked than the annealed, the soft steels less than those containing manganese or chromium, and tungsten steel less than ordinary steel having the same percentage of carbon. Acidulated water dissolved gray iron more rapidly than it did steel, but not the white specular iron; the impure gray iron was the most strongly attacked. The results of these experiments show that, while as regards chromium, manganese, and tungsten, the action of acidulated water is almost the same as that of sea-water, in other respects it is entirely different; and it is totally different from the action of moist air.

M. Clemandot has introduced a new process for toughening steel, which consists essentially in heating the metal until it acquires a sufficient ductility, and then subjecting it to high pressure during cooling. He takes steel already made, heats it to a cherry-red, and submits it, by means of a hydraulic press, to pressures of from 1,000 to 8,000 kilogrammes per square centimetre. After having been allowed to cool between the two plates of the press, the steel is withdrawn with all its new qualities perfectly developed, and in a condition not requiring any further treatment. The result of the process is to impart to the steel a fineness of grain, a degree of hardness, and a notable accession of strength to withstand rupture. The alteration is most considerable with highly carbonized steel; and in this respect the metal is made to resemble tempered steel, without being in all points identical with it.

A new crucible tool-steel, possessing remarkable powers of endurance, is made at the Maindy Works, near Cardiff, Wales. It is the invention of Mr. William Jenkins, who keeps his process a secret. A lathe tool made from a cast ingot of the Jenkins steel weighing 6 pounds, was tried upon cast-steel tires in competition with tools from Mushet steel and from the best Sheffield steel. It was beaten by the Mushet steel, but proved greatly superior to the Sheffield steel. Another tool of the Jenkins or Maindy steel, used to make a deep cut across a rough cast-iron disk, eight feet in diameter, showed but little wear, retained a good cutting edge, and was capable of further work without regrinding.

The hardening of cast-steel, of the grade commonly employed for tool purposes, usually contracts it. This quality is frequently employed to reduce to exact size articles that must be hardened for their purpose. An instance is mentioned in which a machinist hardened a plug gauge six times in order to reduce it to size. At each hardening the steel was subjected to a succession of contractions that required but the ordinary after-polishing. The property is not universal to steel, but is some qualities of the metal, expansion rather than contraction is to be expected from repeated heatings, hardenings, and annealings.

The method hitherto employed for treating the steel in a Bessemer converter, when the temperature of the bath becomes too high, has been to add scrap-metal until the heat is sufficiently reduced. By an improvement devised by Capt. William R. Jones, of the Edgar Thomson Steel Works, steam is introduced into the molten metal in connection with the air-blast. In the use of his method, Mr. Jones found that the length of time during which steam should be admitted into the converter depended upon the size of the pipe delivering the steam, as well as upon other conditions as the nature of the metal, the pressure and volume of the air-blast, etc. The inventor also suggests that it may be expedient to introduce,
instead of steam, a spray of water in a finely divided (atomized) condition, together with the ir-blast, though the more equable action of steam makes its use preferable in practice. Mr. Jones claims as a marked advantage of his invention that it allows the use of a grade of pig-metals which shall be high enough in silicon to avoid the presence of an objectionable percentage of sulphur, and yet, despite its greater heating capacity, be under the easy control of the operator.

M. D. Chernoff read a paper before the Imperial Technical Society of St. Petersburg, on its own observations, and those of Mr. Beck-berhard, on the behavior of steel when subjected to a destructive tensile strain. He had noticed that, with cold-sheared samples of steel, when the limits of elasticity were reached, the scale on the specimens began to separate in a peculiar manner, and the surfaces of the samples were marked with curved lines of more or less regularity. The appearance of the rays on the polished surfaces of the steel reminded him of some experiments made by M. Leger, in which the lines of strains produced in glass subjected to various pressures were made visible through the polarization of the light in the regions strained. In view of these and other similar observations, it occurred to M. Chernoff that, as in glass-bearers, the lines of strains assumed various curved forms, so, in steel, similar actions took place, and became, in part, manifested on the surface so soon as the limits of elasticity were passed. In glass, the limit coincides with that of ultimate strength, so that it is impossible to fix the waves of strain; but in metals, the permanent set will begin first where the strains are greatest, and hence the deformation of surface will follow the lines of maximum strain. Why the regions of maximum strain should arrange themselves in the form of curved rays in metals as difficult of explanation as the corresponding phenomena in glass; but M. Leger suspects that the distribution of elastic substances may be of an undulatory nature comparable to the propagation of sound. M. Egeshtatsky, repeating and extending the experiments, found that the lines of strain were manifested not only in punching, but in shearing and in flattening with the steam-hammer.

Walrand recommends for distinguishing iron from steel in small pieces, a method by observing the fracture of a test-piece after heating and allowing it to take a blue color. A slight scratch should be made not far from the end of the test-piece. Then heat one end slowly and uniformly to a dark-red color, and cool it in water. During the cooling, while the piece is still warm, it must be rubbed with a file from time to time, until the shining metallic surface aid base, has assumed a dark yellow, or, better, blue color, when it is to be cooled quickly and completely. The fractures of the piece taken at the mark serve for comparison. Ordinary wrought-iron broken when cold appears fibrous or crystalline, but treated as above, its fracture is dull, irregular, and of short fiber. Hard and moderately hard steel are fine-grained; after the heating and subsequent treatment, they have a shining, totally or partially smooth fracture. Swedish iron has only traces of fibers, and is hardly to be told from soft steel. After treatment, the fibers become distinct, the smooth appearance is lost, and the iron becomes so much the more distinguishable from soft steel treated in the same manner.

While ordinary iron-rusts—the ferrous and ferric oxides—spread and eat away the substance of the iron, the magnetic oxide—Fe₂O₃—is stable, and when of a certain thickness, arrests the further oxidation of the metal. This property is made use of in the Russianizing of sheet-iron. In Prof. Barff's process for magnetic oxidizing the object is attained by exposing iron to the action of steam with a high temperature in a closed chamber. This process has been improved upon by Mr. George Bower, who substitutes highly heated air for steam; and further by his son, Mr. Anthony S. Bower, to whom it occurred that the work could be facilitated and made more effective and less costly by substituting the internal application of heat, and by a series of oxidizing and deoxidizing operations producing the coating of magnetic oxide simultaneously with the action of heating. A furnace has been devised in which this process is carried on on a large scale. The duration of the treatment depends upon the size, number, and intended use of the articles. In the case of wrought-iron and malleable steel, which are very sensitive to oxidizing influences, this process operates too rapidly, and the Barff method has been found more satisfactory. The two inventors, therefore, combined their methods, and a furnace having the economic features of the Bower furnace was designed to effect the Barff process. By the Bower process, a coating of magnetic oxide can be obtained in from three to eight hours. The rustier the surface is, the more effective and speedy is the process of oxidation.

Prof. M. Keil has produced a composite material of iron and steel, in which the valuable qualities of the two substances are combined, and the combination is made available for a variety of uses. The principle of his process is exemplified in a cast-iron mold divided centrally by a thin sheet of iron, on one side of which sheet fluid iron is poured, and on the other side fluid steel. The dividing plate should be thick enough to prevent the glowing masses on either side from burning through it, and yet so thin that those masses and it shall become thoroughly welded together. The combination has been produced in five shapes; steel by the side of iron; steel between two layers of iron; iron between two layers of steel; a core of steel with a surrounding shell of iron; and a core of iron with a surrounding shell of steel. This steel-iron may be used for a great variety of purposes in which the hard qualities of steel,
enabling it to resist wear and tear, or adapting it to cutting purposes, need to be backed by a tougher material competent to resist strains and great vibration.

**Gold.**—Improvements in the extraction of gold by amalgamation have been applied by Mr. Rowland Jordan, by means of which the percentage of the precious metal that is lost during the process is very largely reduced. Under the ordinary methods of extracting gold with mercury, in case such substances as iron, sulphur, arsenic, lead, tin, zinc, or copper, are associated with the gold, they have the effect through their own chemical action of so “sickening” or subdividing the mercury as to prevent its exerting its full power on the precious metal. Some of the gold, moreover, being coated with complex substances, passes away with the water and sand, instead of being arrested by the mercury. In Mr. Jordan’s method the ore is ground up and thoroughly comminuted in a “Jordan fine crusher,” while a current of air takes up the pulverized material and conveys it to a settling or collecting chamber, whence it passes by its own gravity to an apparatus which automatically regulates the feeding of the powder into the amalgamator. The amalgamator contains a body of mercury from thirty to fifty inches in depth, and the powdered ore is delivered at the bottom, whence, being lighter than the mercury, it rises through the bulk of this substance to the surface as fast as the controlling mechanism will allow, yielding up the gold in its passage. The refuse sand here encounters another air-current, which conveys it to the waste-pits, or to another machine for the separation of any sickened mercury, which may have been carried away by the amalgamator air-blast. The last process is effectually separated every particle of mercury, and thus obviates the ordinary waste of this valuable metal. Mr. Jordan’s process embodies four novel principles or conditions of treatment: First, the ore is reduced to the amalgamated state in a perfectly dry condition; second, the ore is reduced entirely by impact and not by abrasion, so that the particles are not rubbed or ground together, and their complete separation and individuality are maintained; third, the ore, finely divided, clean, and dry, is subjected to the action of mercury under pressure and under the operation of mechanism which continually separates the particles, and is kept beneath the mercury long enough for every particle of the gold-bearing powder to be effectually acted upon by it; fourth, the whole process is automatic. 

The gold-ore of the Providence mine in Nevada City, California—a heavily sulphurated quartz—is treated by a chlorination process. The dried sulphurates are roasted in a three-storied furnace of elliptic plan, where the ore is passed in succession from the third or topmost hearth, to the second or middle, and first or lowest hearth, one per cent. of salt being spread evenly over the ore while the last hearth. By this process the effects are produced in the case arsenic or antimony present is oxidized; the sulphides of iron, copper and silver pass through stages of corrosion and by the addition of salt moist of it is converted into a chloride, and some or all of copper is formed, while the rest of the metals are completely oxidized. It is left in a metallic state. The roasted ing being partly cooled in a pile in a furnace, is spread out till quite cold, then sprinkled with water and then tempered, after which it is passed through a sieve. The sieved ore is transferred to chlorination tuns, where chlorine gas, passing through it for twelve hours, after is left to digest for two or three days. When the chlorination is found to be complete, the tuns are opened, and the chloride, its soluble in water, and can be leached out. The gold is then precipitated from solution by dilute solution of iron. When a sufficient amount of iron is collected in the precipitating-tanks, it is filtered, washed, melted, and fused. The process for the extractive silver, which remains in the ore, is the chlorination of the ore, the hypochlorite and silver chloride. In the formation of a soluble double sulphide of calcium and silver, from which is precipitated the silver by soluble polyphosphate of iron. 

Gold in veins is supposed to have come from the adjoining rocks, but its occurrence in workable form has been rare. The gold is found in decomposed gneiss, which almost completes the absence of the usual concomitants of gold, and on which the gold is chiefly carried. The terrain is largely of decomposed gneiss, the rocks it is seen in the streams, and in the bottoms of the old mines, where the decomposed material that the gold is. The quartz, comparatively rare and insignificant, has been worked in lode races, and successive coatings a few years have been more or less completely stripped.
METALLURGY. (Silver.)

Government, made by the late Prof. who visited São Gonçalo in 1875.

Orrville A. Derby has described a spe-
of gold on limonite in the National Mu-
seum at Rio Janeiro, from the province of
Gerais, Brazil, which has the appear-
ance of having been deposited from solution.
Old-bearing rock is a white-vein quartz:
on a country rock of very quartz-ous schist, the exposed side of which
comes lined with a crust of black botry-
monite less than a millimetre in thick-
ness. The greater portion of the polished
side of this crust is covered with a thin, var-
tek film of an iridescent, bronze color. A
rust or film of reddish-brown earthy li-
festones a V-shaped streak on one side of
the specimen. On various parts of the stone,
along the V-shaped streak, are minute
films of gold which adapt themselves
to all the irregularities of the limon-
tal are shown under the microscope to be
not composed of distinct grains together, and to present a surface like
metal-vein. Films have a similar form and apparently contain appreciable amounts of arsenic, which
give forth the characteristic odor when masses too large to go into the batteries are being broken up under the sledges. The deepest mine is not more than 800 or 900 feet from the surface.

The entire district is opened up exclusi-
vely by tunnels, which are so directed as to
avoid, by going beneath or away from them,
the old Mexican workings at the surface. The
ey average from four to six feet in thickness.

The ore produced are classified as follows:

The first class, in which native silver is plainly visible often in massive form, associated at times with rich silver sulfides, and assaying from 500 to 1,000 ounces of silver per ton. Despencitas is a grade that arises from the hand-clean-
ing of the first-class ore, and is intermediate between that and the second class.

The second-class ore assays from 40 to 500
ounces per ton, and may or may not show na-
tive silver in small specks or flakes.

The third-class ore is a stamp-rock, consist-
ing of galena and zinc blende, distributed
through spar and vein rock, and minute parti-
cles of silver visible only on the vanner belt.
It assays between 12 and 25 ounces per ton.

"Tierras," or soft-vein filling, or gouge, in the
regions adjacent to a bonanza, also often form a third-class ore.

A lot of 8,984 pounds of first-class ore from
the Roncevalles mine, taken 64 hours in run-
ing through the batteries, produced 614 pounds of "cabezonula" or massive silver, weighing from an ounce to several pounds; 373 pounds of sieved-battery cleanings, assaying 19,574
ounces of silver to the ton; and 3,320 pounds of slimes, assaying 659 ounces of silver per ton.

In running through the batteries, the salt
was charged with the ore; steam was turned
on at various times as the pulp thickened and
cooled; and the mercury was added at inter-
...
vals, as the spoon-tests showed the necessity for it. All the features of the amalgamation of first-class ores are made to vary with the richness of the ores, but with the second-class ores the treatment is more methodical. Des-puntes and the richer second-class ores are generally charged in 1,100-pound lots, with 80 pounds of mercury, 2¼ per cent. of salt, and 5 per cent. of sulphate of copper. The poorer second-class ores, assaying 80 ounces per ton and under, are charged with 40 pounds of mercury and usually the same amount of salt and sulphate of copper, and the runnings are kept up for from a third to a half less time than in the case of the first-class ores. When squeezed and “retorted,” the amalgam from first-class ores usually yields a third part of pure silver. The tallings of the ores are often quite rich. Some tallings from first-class Roncesvalles ore ran 79 ounces per ton. They are reduced by a chloridizing roasting.

A very rich silver-producing district is situated in what are designated the Barrier Ranges, in New South Wales, near where that colony joins South Australia. The existence of the silver-bearing ores was first discovered in 1876, but they did not attract attention till about 1882. The influx of miners has aided in the erection of a township, which is now known as “Silverton.” The mine at Silverton embraces eleven claims, in which the ore consists of sulphides of lead, or argentiferous galenas. Fifteen shafts have been sunk, varying in depth from 80 feet to 75 and 190 feet. The larger Lakes Camp group of mines are situated about twenty-eight miles from Silverton, and consist of very rich sulphides of silver. Ores from the Silverton mines have yielded a clear profit of £123 or $600 per ton, while two tons sent from the Lakes Camp district to England, and are pronounced to be of first order, were sold for £600, or $3,000.

**Iridium.**—The discovery by Mr. John Holland, of Cincinnati, of methods suitable for making the metal iridium promises to result in the development of a new and valuable element to mechanical resources. Iridium is chiefly obtained from Russia and California, though it is also found in other parts of the world. It is nearly always associated with platinum or gold, in small grains or fine powder, the largest pieces being of about the size of a grain of rice, generally alloyed with platinum as plat-in-iridium, or with osmium as osmiridium, or iridosmine. Previously to Mr. Holland’s experiments, it had been possible to fuse it only at extremely high temperatures in minute quantities that gave globules of very small size. The only use for which it had been found available was that of pointing gold pens, for which the natural pieces were selected and fitted and then ground to a proper shape. Mr. Holland, seeking to obtain larger pieces of iridium than were found in nature, discovered that by adding phosphorus to it, it became perfectly fusible, when in could be poured out and cast into almost any desired shape. The resultant product was found to be about as hard as the natural grains, and to have all the properties of the metal itself, but to contain from 77–9 per cent. of 77–9 per cent. of phosphorus. At this stage of the research, Mr. W. L. Dudley, of Cincinnati, began experiments to find means of putting the product in a more extended use in the arts. He discovered that the phosphorus could be completely removed, by heating the melted metal in a box of lime. His further experiments related to the construction of appliances for grinding, drilling, and sawing the metal, all of which operations are performed with the aid of emery or emery-dust. By means of these improved processes, iridium has been made applicable to use in draw-plates for drawing gok and silver wire; knives for fine scales and balances; hypodermic needles; the points of styluses for manifold writing, and for surveyors and engineers’ instruments, and all purposes for which hardness, durability, and non-corrosibility are required; for the negative electrodes of electric lights; and the electrical contact-points of telegraphic apparatus. The later investigations, not yet completed, are upon methods of plating with iridium.

**Nickel.**—A valuable deposit of nickel-ore has been discovered in Cottonwood Camp, Churchill county, Nev. According to the description by Mr. Charles Bell, one of the discoverers, the ledge in which it occurs is perfectly incised, runs 6,000 feet northeast and southwest, and is thirty feet wide between the walls, while the mineral lies in veins, of which there are thirteen, each from ten to thirty-five inches wide. Specimens of the ore from the different levels, amounting in all to thirty pounds in weight, have been analyzed by Prof. Susquehanna B. Newberry, and are pronounced by him the finest masses of nickel-ore he has ever seen. The sample from the greatest depth (80 feet) consists of nearly pure niccolite.

**Alumina.**—Mr. Wm. Frishmuth, of Philadelphiaphia, claims to have had a process for the commercial manufacture of alumina. Instead of using metallic sodium, as is the processes hitherto employed for the reduction of the chloride of alumina, he employs vapor generated by heating a mixture of some sodium compound with carbon or some other reducing agent. The cheapness of this method, as compared with those hitherto employed, is illustrated by the statement that, while by what is known as the De Villemil method, to produce 20 pounds of alumina, 50 pounds of metallic sodium are required, at a cost of not less than $150, in Mr. Frishmuth’s process the result is secured by the use of 115 pounds of carbonate of sodium, costing one cent a pound. Both processes employ the double chloride of alumina and sodium; but Mr. Frishmuth has taken out a patent for the use of the double chloride of the same metals. He has also introduced improvements in making the double chloride, by which its cost is greatly reduced.
ENGLISH MANUFACTURE OF COPPER ALLOYS. (Copper, Strontium, Alloys.) 477

In the manufacture of cupronickel, a process is used which involves the reduction of copper and nickel by means of coke or coal. The resulting alloy is then cast into sheets, bars, or tubes, which are used in various applications.

COPPER AND CUPRINICKEL. 478

Copper and cupronickel are widely used in the construction of pipes, fittings, and other components for the transportation of hot and cold water, as well as for other applications requiring good resistance to corrosion.

COPPER AND COPPER ALLOYS 479

Copper alloys are used in a variety of applications due to their unique properties, such as high thermal and electrical conductivity, resistance to corrosion, and strength. Examples of copper alloys include brass, bronze, and cupronickel.

COPPER AND CUPRONICKEL 480

Cupronickel is a copper-nickel alloy that is used in marine applications due to its excellent resistance to corrosion in seawater. It is also used in nuclear power plants and in the production of aircraft.

COPPER AND CUPRONICKEL ALLOYS 481

Cupronickel alloys are used in various applications due to their combination of strength, resistance to corrosion, and good electrical conductivity. Examples of cupronickel alloys include cupronickel 70 and cupronickel 70.

COPPER AND COPPER ALLOYS 482

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COPPER AND COPPER ALLOYS 500

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just visible as shining points of the surface, which, would now have a topography characteristic of the alloys examined with its undulations representing the variations of quality, with changing proportions of the three constituents. On the model thus formed, the position of the strongest alloy was indicated by a distinct elevation or mountain, not far from the point, copper = 55, zinc = 48, tin = 2, at which the tenacity was about 85,000 pounds per square inch. This gives a close-grained alloy, of rich color and fine surface, and capable of taking a good polish. It had immense strength, and seemed unusually well adapted for general use as a working quality of bronze. The alloy having the highest qualities of toughness as well as strength contained less tin than the above composition, viz.: Copper = 55, tin = 28, zinc = 43. It had a tenacity of 68,900 pounds per square inch of original section, and 92,136 pounds on fractured area. This alloy and the "Tobin alloy," copper = 59.22, tin = 2.30, zinc = 39.48, are good working metals; the latter is capable of great improvement by skilful working either hot or cold, and of obtaining a tenacity of more than 100,000 pounds per square inch. The addition of tin and of zinc to cast copper increases the tenacity up to a certain limit, and the influence of tin is nearly twice as great; while the limit of useful effect is not reached with zinc until the amount added becomes very much greater than with the copper-tin alloys. Brasses can be obtained in which the alloys were made to differ by smaller percentages. Thus the influences of slight variations in the composition of the bronzes were determined. Mr. W. Ernest H. Jobbins continued the investigations in the light of the results obtained by Prof. Thurston and Mr. Coster, choosing as his field a triangular area of Prof. Thurston's map surrounding the mountain of 85,000 pounds tenacity, which embraced all that portion of the field in which the most tenacious alloys had hitherto been discovered. The boundaries of this field were: copper, maximum = 60, minimum = 60; zinc, 48 and 38; tin, 5 and 0; limits which included the "Tobin alloy" and Prof. Thurston's alloy of 89,900 pounds tenacity. Of twenty-three alloys experimented upon, No. 22, the composition of which is copper 57, zinc 42, tin 1, was determined as the "strongest of the bronzes copper 55, zinc 44, tin 1, as second in and No. 5, copper 56, zinc 42, tin 2, as for practical purposes. The last is as a very fine alloy, possessing great giving a good, smooth, square fracture, ing the grain very close and compact.

Cobalt-bronze is a new alloy introduced by Messrs. Henry Wiggin and Son, Birr, England, to furnish a compound having desirable qualities that have been exist in the metal cobalt. The investigators determined that pure metallic cobalt rolled into sheets and wrought into a utility, but found that its high price prevented its coming into practical use. Cobalt they claim to have preserved close, steel-like surfaces, their susceptibility to high polish, their suitability for casting, their hardness, toughness, and tensile strength.

A white bronze is coming into use for parts which has been found to stand to the weather for a very long time. The material is non-corrosive and changes is therefore better adapted to certain than some of the more costly metal grades of which are recommended close, steel-like surfaces, their susceptibility to high polish, their suitability for casting, their hardness, toughness, and tensile strength.

Mr. John S. Brodie, in a paper read at the Liverpool Engineering Society, strength of bronze alloys, spoke of bronze I. Coster, under his direction and supervision, investigated the inclosed field, beginning his work with two series in order to fix more accurately its precise limitations. When these were approximately defined, three other series were proposed, in which the alloys were made to differ by smaller percentages. Thus the influences of slight variations in the composition of the bronzes were determined. Mr. W. Ernest H. Jobbins continued the investigations in the light of the results obtained by Prof. Thurston and Mr. Coster, choosing as his field a triangular area of Prof. Thurston's map surrounding the mountain of 85,000 pounds tenacity, which embraced all that portion of the field in which the most tenacious alloys had hitherto been discovered. The boundaries of this field were: copper, maximum = 60, minimum = 60; zinc, 48 and 38; tin, 5 and 0; limits which included the "Tobin alloy" and Prof. Thurston's alloy of 89,900 pounds tenacity. Of twenty-three alloys experimented upon, No. 22, the composition of which is copper 57, zinc 42, tin 1, was dete
The hearth is covered by an arched roof of brickwork, carrying a hopper closed by a slide, in which the charcoal is charged and dropped into the fire as required, instead of being shoveled as in the old plan through the working door in front. The waste flame, on its way to the chimney, passes over a bed in which the pig-iron for the following charge is brought up to a strong heat before being introduced into the melting-hearth. On a trial of four weeks, one of these hearths produced an average of 368 cwt. of blooms per week, with a consumption of 4½ bushels of charcoal per cwt., against 365 cwt. of blooms per week, with a consumption of 6½ bushels of charcoal per cwt. by the ordinary hearth.

Mr. Forsberg suggests a method for further increasing the production of his furnaces by doing away with the melting of the pig-iron in the refining-hearth. For this purpose the heating-bed for the metal in the fire is to be converted into a melting-bed, which is kept warm by the waste flame during the actual firing period, and receives the heat necessary for melting from a gas-producer, placed at right angles to the working axis of the hearth.

In a puddling-furnace invented by Mr. R. H. Oates, of Fort Clinton, Pa., the puddling-chamber is supported on segmental shoes mounted on rollers, having their bearings on a saddle, and arranged in a curvilinear direction. The metal is forced from end to end, and deflected inwardly at the ends by means of diagonal corner-blocks. In this way it is uniformly directed backward and forward between the corner-blocks. At each opening of the chamber is a vertical dividing bridge. As the bridges move with the chamber, the flames from the furnace are deflected by the varying position of the bridges, and their directions constantly change, so that the action of the fire on the metal is uniform.

**METAL MARKET IN 1884.** With the exceptions of the metals closed late in 1884 at prices lower than those ruling at its beginning, the general tendency of values during the year was slowly downward, in common with nearly all other raw material. This gradual depreciation, which has been noticed all over the world, is due less to a falling off in consumption than to excessive production. Consumption has been all that could be expected, considering the doll times, both in the United States and Europe; it has even exceeded expectations; but the output has been altogether too large. The larger mines and smelting works, in order to be able to pay dividends in spite of lower prices, have, many of them with increased means of production, and better methods of treatment, been steadily making a large output, while being content with a very moderate profit. While small and financially not very strong mines and works have been struggling through the year as well as they could, instead of stopping work became unprofitable, the large and rich concerns have been producing more than ever, swelling the aggregate amount turned out to an astonishing total. Overproduction having been going on for years, although less strikingly than in 1884, there has been, during the past decade, a decline in values of about 50 per cent in most metals. The rapidity of communications has co-operated in bringing about the lower ruling of values, as there is less necessity for accumulating stocks in port to await the demand. If there be requirements anywhere, greater or more urgent than in the normal course of business, the telegraph is used, and rapid steamers or shortened routes bring the supply in as many weeks as it formerly required months. This possibility of rapid supplies at any season has, on the other hand, discouraged speculative holding for a rise, and singularly upset calculations based on current statistics. In a word, the stock in port has lost much of its significance in determining current value. This table shows the course of prices at New York, in cents per pound, gold value:

<table>
<thead>
<tr>
<th>METALS</th>
<th>July 1, 1884</th>
<th>Dec. 21, 1884</th>
<th>Dec. 24, 1884</th>
<th>Dec. 29, 1884</th>
<th>Dec. 20, 1885</th>
<th>Dec. 28, 1885</th>
<th>Dec. 29, 1886</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lake copper</td>
<td>544</td>
<td>91</td>
<td>15</td>
<td>18</td>
<td>15</td>
<td>11</td>
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</tr>
<tr>
<td>Strata tin</td>
<td>591</td>
<td>144</td>
<td>131</td>
<td>119</td>
<td>110</td>
<td>105</td>
<td></td>
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<tr>
<td>Domestic lead</td>
<td>68</td>
<td>48</td>
<td>48</td>
<td>52</td>
<td>56</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Spelter</td>
<td>126</td>
<td>144</td>
<td>111</td>
<td>114</td>
<td>110</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>Antimony</td>
<td>126</td>
<td>144</td>
<td>111</td>
<td>114</td>
<td>110</td>
<td>112</td>
<td></td>
</tr>
<tr>
<td>Coke dust, per box</td>
<td>408</td>
<td>403</td>
<td>394</td>
<td>384</td>
<td>364</td>
<td>364</td>
<td></td>
</tr>
</tbody>
</table>

**Copper.—**Lake Superior copper opened at New York at 15 cents, and Chili bars in London at £28, the lowest price during a decade having been £20 1/2s. in 1889; £20 1/2d. in 1889; £25 in 1890; £25 in 1879; £25 in 1878; £25 in 1877; £25 in 1876; £25 in 1875; and £25 in 1874. Charters on the west coast were: 40,000 tons in 1888; 41,000 in 1889; 42,000 in 1889; 41,000 in 1888; 40,000 in 1879; 41,000 in 1878; and 44,000 in 1877. The world's copper production in five years had been:

<table>
<thead>
<tr>
<th>1879</th>
<th>1880</th>
<th>1881</th>
<th>1882</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>149,158</td>
<td>164,067</td>
<td>156,751</td>
<td>174,506</td>
<td>196,454</td>
</tr>
</tbody>
</table>

Although it was no secret that the American output was unusually large, and though business on both sides of the Atlantic was very dull, prices till December gave way but gradually, as the following table shows:

**LOWEST AND HIGHEST PRICE OF LAKE SUPERIOR COPPER IN NEW YORK, IN CENTS PER POUND.**

<table>
<thead>
<tr>
<th>MONTHS</th>
<th>1881</th>
<th>1882</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>18 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>February</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>March</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>April</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>May</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>June</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>July</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>August</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>September</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>October</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>November</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
<tr>
<td>December</td>
<td>19 2/3</td>
<td>19 2/3</td>
</tr>
</tbody>
</table>
METAL MARKET IN 1884.

In December a complete break-down occurred in London, where Chili bars declined London £47 5s., and in New York, where Lake Superior copper for a moment dropped to 11 cents, when it transpired that the syndicate of lake companies sold 12,000,000 pounds, delivery spread over five months, on the basis of the average price of Chili bars in London, the average of the quotations of the 10th to the 26th of the preceding month, to determine the price that consumers were to pay. The price, which was not to be less than 104 cents whenever Chili bars had averaged in London £48 or under, was to advance one tenth of a cent for every 10c. increased average, until £53 or over was reached, when the maximum price was to be 114 cents. Subsequent experience in 1885 showed that, as Chili bar remained depressed in London in January and February, declining to £47 2s. 6d., the price that manufacturers paid to the lake companies was only $10.90 the hundred pounds in January and February, and $10.60 in March, while on the spot the price remained steady, in New York in January and February, 1885, 11c to 11½ cents. Statistics had shown that in 1880 the output of copper in the United States was 21,000 tons of 2,000 pounds, of which the lake companies contributed 22,204 tons, or 82 per cent. In 1881 the figures were respectively 22,000 and 4,883 net tons, or 76 per cent. In 1882 they stood 49,925 and 25,455, or 62 per cent., and 58,000 and 20,000 tons, or 52 per cent., in 1883. These figures, therefore, proved that, outside of the lake-region, copper production had made rapid strides, and, when all particulars relating to production in 1884 had been gathered, the following general result was revealed:

**COPPER PRODUCTION OF THE UNITED STATES.**

<table>
<thead>
<tr>
<th>LOCALITIES</th>
<th>1883</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pounds</td>
<td>Pounds</td>
</tr>
<tr>
<td>Lake Superior</td>
<td>59,700,000</td>
<td>68,200,000</td>
</tr>
<tr>
<td>Arizona</td>
<td>34,000,000</td>
<td>25,700,000</td>
</tr>
<tr>
<td>Missouri</td>
<td>44,500,000</td>
<td>45,500,000</td>
</tr>
<tr>
<td>New Mexico</td>
<td>500,000</td>
<td>800,000</td>
</tr>
<tr>
<td>California</td>
<td>1,500,000</td>
<td>1,200,000</td>
</tr>
<tr>
<td>Colorado</td>
<td>1,190,000</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Utah</td>
<td>74,000</td>
<td>178,000</td>
</tr>
<tr>
<td>Wyoming</td>
<td>250,000</td>
<td>250,000</td>
</tr>
<tr>
<td>Nevada</td>
<td>100,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Idaho</td>
<td>40,000</td>
<td>40,000</td>
</tr>
<tr>
<td>Missouri</td>
<td>220,000</td>
<td>220,000</td>
</tr>
<tr>
<td>Montana and New Hampshire</td>
<td>220,000</td>
<td>220,000</td>
</tr>
<tr>
<td>Tennessee</td>
<td>400,000</td>
<td>400,000</td>
</tr>
<tr>
<td>Southern and Middle States</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Delaware</td>
<td>3,000</td>
<td>15,000</td>
</tr>
<tr>
<td>Total</td>
<td>114,990,000</td>
<td>148,245,000</td>
</tr>
<tr>
<td>Copper from imported pyrites</td>
<td>1,625,000</td>
<td>2,500,000</td>
</tr>
</tbody>
</table>

Tin.—At the beginning of the year 1884, the metal market opened in New York with Straits tin at 19 cents a pound, which declined in the course of January to 18½ cents, and at the end of the month was at 16½ cents. The visible supply in New York and Boston on January 1 was 8,000 tons, and the year terminated with this reduced to 2,400 tons. The course of prices was as follows:

<table>
<thead>
<tr>
<th>DATE</th>
<th>PRICE OF STRAITS TIN AT NEW YORK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan., 1884</td>
<td>£26 10s. 6d. per ton</td>
</tr>
<tr>
<td>Feb., 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>Mar., 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>Apr., 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>May, 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>June, 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>July, 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>Aug., 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>Sep., 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>Oct., 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>Nov., 1884</td>
<td>26s. 6d. per ton</td>
</tr>
<tr>
<td>Dec., 1884</td>
<td>26s. 6d. per ton</td>
</tr>
</tbody>
</table>

As the New York market was mainly by the London quotations by cable, the price of tin is best understood by showing the course in that market. The year opened London with sanguine expectations at £31 2s. 6d. cash, and £32 2s. 6d. forward. In April a decided improvement occurred, to £36 5s. and £37 cash and 1s. respectively; receding, however, in June and July to £31 10s. cash. In August a slight action 30s. a ton took place. In September a serious decline ensued, to £27 10s. 6d. forward. A determined effort to stay the fall was made by holders in October, and the market improved to £27 7s. 6d. and £27 10s. three months, declining in November to £27 4s. 6d. and £27 7s. 6d. and to the end of December to £27 12s. 6d. and £27 10s cash and forward respectively, closing on December 31 at £27 10s. 6d. cash, at the end of three months.

The decline in September was due, one hand, to the discomfiture of the speculator for a rise in London, who, having a heavy stake in Chili bars (copper), was compelled to realize on his tin holdings; the other hand, to the threatening as relations between France and China latter is a large consumer of tin, being heavily on Chili bars (copper), and was compelled to realize on his tin holdings; the other hand, to the threatening aspect of relations between France and China. Latter is a large consumer of tin, being heavily on Chili bars (copper), and was compelled to realize on his tin holdings; the other hand, to the threatening aspect of relations between France and China. Latter is a large consumer of tin, being heavily on Chili bars (copper), and was compelled to realize on his tin holdings; the other hand, to the threatening aspect of relations between France and China.
improving up to June to 14s., but closed at 14s. The demand being bricklike mills restarted in Wales, during the
ur months of the year, and some old changed hands, working in December such renewed vigor that there were signs of overproduction.

Shipment to the United States.

<table>
<thead>
<tr>
<th>Month</th>
<th>1881</th>
<th>1882</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>52</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Feb.</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Mar.</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Apr.</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>May</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>June</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>July</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Aug.</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Sep.</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Oct.</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Nov.</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
<tr>
<td>Dec.</td>
<td>48</td>
<td>48</td>
<td>48</td>
</tr>
</tbody>
</table>

The following statistics will be seen that a report from Wales to the United merely doubled between 1878 and 1888; can not be said that there has been, at no during the interval, a glut of tin either in New York or in the interior, though the shipments in 1884 were again the American market entered the year with a market stock. Ample fruiti

and an extensive canning of provisions, especially on the Pacific coast, were instrumental in the consumption of enormous shipments. While in 1884 shipped to all quarters 5,121,001 boxes, United States took of this amount 8,572,782, oner cent. The extraordinary cheapness course stimulated the use of tin plates for purposes, particularly in building.

Although lead fluctuated at times the year, the general course of prices is best steadiness, as the following tabular, which gives the price of common lead at New York, in cents per

<table>
<thead>
<tr>
<th>Month</th>
<th>1881</th>
<th>1882</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan.</td>
<td>52</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Feb.</td>
<td>52</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Mar</td>
<td>52</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Apr</td>
<td>52</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>May</td>
<td>52</td>
<td>52</td>
<td>52</td>
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<tr>
<td>June</td>
<td>52</td>
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<td>52</td>
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<tr>
<td>July</td>
<td>52</td>
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<tr>
<td>Aug</td>
<td>52</td>
<td>52</td>
<td>52</td>
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<tr>
<td>Sept</td>
<td>52</td>
<td>52</td>
<td>52</td>
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<tr>
<td>Oct</td>
<td>52</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Nov</td>
<td>52</td>
<td>52</td>
<td>52</td>
</tr>
<tr>
<td>Dec</td>
<td>52</td>
<td>52</td>
<td>52</td>
</tr>
</tbody>
</table>

The production of spelter in the United States, in net tons, has been:

<table>
<thead>
<tr>
<th>Year</th>
<th>1878</th>
<th>1879</th>
<th>1880</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>7,348</td>
<td>8,765</td>
<td>8,879</td>
</tr>
</tbody>
</table>

The production in net tons was distributed as follows:

<table>
<thead>
<tr>
<th>Location</th>
<th>1881</th>
<th>1882</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>15,350</td>
<td>15,701</td>
<td>16,792</td>
</tr>
<tr>
<td>Kansas</td>
<td>3,090</td>
<td>3,965</td>
<td>9,109</td>
</tr>
<tr>
<td>Missouri</td>
<td>3,190</td>
<td>3,190</td>
<td>6,380</td>
</tr>
<tr>
<td>Eastern States</td>
<td>5,695</td>
<td>5,840</td>
<td>7,551</td>
</tr>
<tr>
<td>Total</td>
<td>44,300</td>
<td>83,765</td>
<td>86,571</td>
</tr>
</tbody>
</table>

Concerning the ore-production in southwest Missouri and southwestern Kansas, the following facts have been collected: the output of the region was the heaviest in its history, aggregating 74,350 tons, the bulk of which was mined in Jasper and Newton counties, Missouri, and in Cherokee county, Kansas. Of this quantity, 67,250 tons were blends, and 7,000 tons silitcic. The zinc-works of
Carondelet, Rich Hill, and Toplin took 14,550 tons; La Salle, Paris, and Collinsville, 36,500 tons; and Pittsburg and Weir City, 28,200 tons. Another authority places the output of the Cherokee county (Kansas) district at 62,987 net tons of ore, placing the average price at $15 a ton for the whole year. It is said concerning the mines of southwestern Missouri and of southeastern Kansas that the outlook for an increased production during 1886 is good. Promising discoveries of deposits of zinc-ore have been made in central Missouri, along the line of the Kansas City, Springfield, and Memphis Railroad, and in the northern counties of Arkansas bordering on the Missouri line. In Europe the general course of spelter prices has also been highly unsatisfactory. In London the year opened with the price at 219 5s. ordinary at shipping ports; closed at £14 2s. 6d. Calamine exportation from Spain during the first eleven months of 1886 was 27,277 tons, against 26,489 in 1885, and 24,597 in 1882.

From all this it will be seen that the chief interest in the American and European metal markets in 1884 centered on copper, whose further developments are a problem attracting general attention.

**METHODISTS.**

I. Methodist Episcopal Church.—The following is a summary of the statistics of the Methodist Episcopal Church, as they are given in the "Minutes of the Annual Conference" for 1884. Number of traveling preachers, 11,024; of preachers on trial, 1,039; of local preachers, 12,289; of full members, 1,647,719; of probationers, 187,771; total of members and probationers, 1,835,490; number of baptisms, 62,296 of children, and 68,148 of adults. Number of churches, 19,128, having a probable value of $73,199,223; number of parsonages, 6,764, having a probable value of $10,935,856; number of Sunday-schools, 21,527, with 284,119 officers and teachers, and 1,014,316 scholars. Amount of contributions: For missions, $660,701; for Woman's Foreign Missionary Society, $127,568; for church extension, $120,146; for the Tract Society, $156,086; for the Sunday-School Union, $16,169; for the Freedmen's Aid, $4,004; for education, $90,741; for the American Bible Society, $29,747; for pastors, presiding elders, and bishops, $7,702,441; for "conference claimants," $179,558.

**General Conference.**—The General Conference of the Methodist Episcopal Church met in Philadelphia, May 1st. The quadrennial address of the bishops, marking the fact that the Church had reached the hundredth year of its history as a distinct ecclesiastical organization, presented a brief review of its progress during the century of its existence. During the past four years, four new conferences had been formed. The number of members had increased by 69,590, and this figure, added to the number of deaths that had taken place during the same time, showed that the Church had received 168,787 accessions. The value of church property had increased by $5,872,900, and great success had attended efforts, particularly in the cities, to liquidate church debt. Embarrassing debts had also been removed from many of the institutions of learning of the Church, and some of them had been strengthened by liberal additions to their endowment funds. The whole number of educational establishments included 10 theological institutions, 45 colleges and universities, 60 classical seminaries, 8 colleges and seminaries for young women, and 19 schools of high grade connected with foreign missions. In these institutions, the value of the buildings and grounds was estimated at $7,594,640; the amount of endowments was $7,031,176; the number of teachers, 1,409, and of students for the last year, 28,681, with an estimate of students since their beginning of 414,518. The estimated amount of the debts still resting against a few of these institutions was $592,476. The address also spoke of the progress of the educational work among the freedmen, and of the recently begun enterprises for education among the white people, of the South; and mentioned, as evidences of the advancement of the foreign missionary enterprises, the divisions of the Chinese missions into an annual conference, and three distinct missions in North Central, and West China, the enlargement of educational work in Japan, the steady accession of members in India, and the growth of the annual conferences in Germany and Switzerland, Sweden, Norway, and Italy.

The report of the Book Committee showed that the total net capital of the Book Concern, as represented in its Eastern and Western publishing houses, was $1,617,450; that the sales during four years had amounted to $6,455,489, or $355,344 more than the sales of the previous four years, and that the net profits during the same period had been $398,115. For new bishops were appointed by the General Conference, viz.: W. X. Ninde, at the time President of the Garrett Biblical Institute, Evanston, Ill.; J. M. Walden, senior book agent at Cincinnati, Ohio; W. H. Mallahan, of the New England Conference; and Charles H. Fowle, second missionary secretary. The episcopal residences were established in Boston, New York, Philadelphia, Washington, Cincinnati, Chicago, St. Louis or Greenacres (Ind.), St. Francisco or vicinity, Minneapolis, Atlanta, or Chattanooga, New Orleans or Austin, Denver, and Topeka or vicinity. A proposition was urged to establish episcopal residences also in Europe and in India, but was not favored by the Conference. The Conference decided, however, to elect a missionary bishop for Africa (Liberia), whose authority should be confined to that country; and William Taylor, a local preacher, who had made extensive missionary tours for the foundation of self-supporting churches and schools in India and South America, was chosen to that office. A resolution was adopted to the effect that the Confer-
reaffirm the doctrine of the fathers of our Church that the bishopric is not an order, but an office, and that in orders a bishop is merely an elder or presbyter." A rubric was also directed to be prefixed to the order for the consecration of bishops, declaring that "this service is not to be understood as an ordination to an advanced grade in the Christian ministry beyond and above that of elders or presbyters, but as a solemn and fitting consecration to the special and most sacred duties of superintending in the Church."

Various efforts were made to extend theumber of years in which a minister may successively be appointed to the same pastoral charge, but the Conference refused to change the present rule, which limits the term of service at one place, except in the case of missions (among which is included, as to this state, the Germany and Switzerland Conferences), presidencies and professorships in educational institutions, and the administrative offices of the Church, to three years. A minute was adopted declaring that direct negotiations between pastors and churches are in advance of the making of the appointments by the bishop as contrary to the spirit of the itinerant ministry, and subversive of the ecclesiastical polity of the Church, and as such should be discouraged by the bishops, pastors, and people. It was decided to be inexpedient to take action on the subjects of licensing women to exhort and preach, and of ordaining women. The Conference, by resolution, declared "the policy of the Methodist Episcopal Church to be, that no member of any society within the Church shall be excluded from public worship in any edifice of the denomination, and no talent shall be excluded from instruction in any school under the supervision of the Conference, because of race, color, or previous condition of servitude." It also declared that color is no bar to any right or privilege of office or membership in the Church, and that no policy is necessary or desirable as an accommodation to the interests of the liquor traffic to be the duty of civil government, and that the people ought not to allow themselves to be controlled by party organizations managed in the interests of the liquor traffic. The pursuit of ordinary business or labor on Sunday, all unnecessary travel, the buying and reading of Sunday papers, as well as all forms of pleasures and amusements, were directed to the danger to the taste, the minds, and the morals of their wards arising from the general circulation of sensational and pernicious literature.

Church Extension.—The General Committee of Church Extension met in Philadelphia, November 13, Bishop Bowman presiding. The treasurer reported that the available resources of the society for the year, which included a balance of $104,599 from the previous year, and $327,990 of current receipts, had been $327,584. The disbursements for the year had been: On general account, donations, etc., $141,265; on loan fund (loans to churches, $116,254; invested in marketable securities, $70,000), $186,254; in all, $327,519. Four hundred and eighty-three churches had been aided by donations or loans, or by both, or forty-one churches more than had been aided during the previous fiscal year. Grants had been made...
METHODISTS.

in donations and loans, on conditions yet to be complied with, to 194 churches, of $66,000; and applications were on file from ninety-one churches for grants and loans to the amount of $32,925. The plan of inviting special contributions of $250 each for frontier churches had been of great service. Eighty-four such contributions had been received, providing an aggregate amount of $21,000.

Freedmen's Aid Society.—The annual meeting of the Freedmen's Aid Society was held in Cincinnati, Ohio, December 29. Mr. Amos Shinkel, first vice-president, president. The treasurer reported that his total receipts for the year ending July 1, 1884, had been $187,458. This showed an apparent decrease from the previous year of $16,800; but that arose from the appearance in the last year's report of the amount of a legacy for endowments, which had swelled the receipts considerably beyond the annual average. The returns of the regular collections exhibited an increase of $15,599. The expenditures for the year had been $147,602, of which $97,700 had been applied to the maintenance of the teachers and the schools and to current expenses, and $49,902 was for real estate and buildings.

Twenty-one institutions of learning were maintained among the freedmen, and returned 106 teachers and 3,628 students. Aid had also been extended to educational work among the white population of the South, so far as it could be done without interfering with the work among the freedmen; and there were already eighteen institutions of this class, assisted by the society, which returned eighty-six teachers and more than 2,000 students.

Women's Home Missionary Society.—The annual meeting of the Woman's Home Missionary Society was held at Cleveland, Ohio, October 28 to 31. Mrs. Rutherford B. Hayes presided. The receipts for the year had been nearly $17,000, and a balance of $5,903 was returned as being in the treasury. Appropriations for the coming year to the amount of $20,000. The objects of the society include the making provision for needy families and frontier pastors by putting them under the care of some Sunday-school or prosperous church, and the promotion of training in housekeeping and the practical industries by the establishment of "model homes," of which those at Little Rock, Ark., Holly Springs, Miss., Atlanta, Ga., Orangeburg, S. C., and Savannah, Ga., were reported as successful operation.

General Missionary Committee.—The General Missionary Committee of the Methodist Episcopal Church met in the city of New York, November 6. Bishop Bowman presided. The treasurer of the Missionary Society reported that his receipts for the year had been $731,126, or $30,944 less than the receipts for the previous year, and his expenditures $775,224. The decrease in receipts had been wholly in the item of legacies, while the collections in the churches had been augmented. The treasury was in debt on the first day of November, 1884, $58,306. Provisions were for the extension of the missionary work in Africa, under the supervision of Bishop Taylor, and for the establishment of new missions in Korea. A gift was offered Mr. J. P. Goucher, of Baltimore, of $20,000, accepted by the committee, providing a whole amount of $12,000 was obtained, for the object of sending a missionary to Korea, containing chapel, lecture-rooms, library, seminarium, etc., for the Anglo-Japanese Union of Tokio and Arroyama.

Appropriations for the support of missions during the ensuing year were as follows:

I. FOREIGN MISSIONS:

Africa
South America
China

II. MISSIONS IN THE UNITED STATES, not in annual conferences, to be administered as foreign missions (in Arizona, New Mexico, Utah, Wyoming, Dakota, Montana, Nebraska, the Black Hills, Indian Territory, etc.).

III. DOMESTIC MISSIONS:

Welsh
Scandinavian
German
French
Portuguese
Chinese
American Indian
English-speaking

IV. MISCELLANEOUS APPROPRIATIONS.

For the liquidation of the debt.

Total appropriations.

Methodist Centennial Conference.—A conference in commemoration of the centennial of the organization of the Methodist Episcopal Church, commonly called the "Christmas Conference," Dec. 25, 1868, was held in Baltimore, Md., beginning December 10th. Thirteen appointed delegates were from the Methodist Episcopal Church, Methodist Episcopal Church, South; the African Methodist Episcopal Church; the Methodist Episcopal Zion Church; the Methodist Church; the Primitive Methodist Church; and the Independent Methodist Churches. Fraternal delegates were from the Methodist Protestant Church and Christian Churches. A preliminary meeting for the exchange of greetings was held in the evening of December 9th, in the First Methodist Church, the society of which was regarded as the legitimate successor of that of the Lane Meeting-House, in which the Centennial Conference was held. The following is the list of the strength of the M
as in 1784 and 1833 was printed in the programme of the Conference:

<table>
<thead>
<tr>
<th>1883</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Metodists in the United States</td>
<td></td>
</tr>
<tr>
<td>Itinerant preachers</td>
<td>25,600</td>
</tr>
<tr>
<td>Local preachers</td>
<td>84,714</td>
</tr>
<tr>
<td>Lay members</td>
<td>8,906,380</td>
</tr>
<tr>
<td>Itinerant preachers</td>
<td>1,663</td>
</tr>
<tr>
<td>Local preachers</td>
<td>1,679</td>
</tr>
<tr>
<td>Lay members</td>
<td>17,748</td>
</tr>
<tr>
<td>Total Methodists in the World</td>
<td></td>
</tr>
<tr>
<td>Itinerant preachers</td>
<td>28,263</td>
</tr>
<tr>
<td>Local preachers</td>
<td>86,393</td>
</tr>
<tr>
<td>Lay members</td>
<td>8,994,364</td>
</tr>
<tr>
<td>Total Methodist population</td>
<td>25,669,740</td>
</tr>
</tbody>
</table>

J. C. Granberry, of the Methodist Church, South, presided at the opening of the preceding sessions of the Conference on the 13th, while the preceding sessions of the Conference were represented by the Rev. H. B. Higdon. The Superintendents of the various Religious societies, sermons on Methodism, and the cultivation of the Sabbath, were all in favor of the Conference. A report on the subject of the Oxford League was made, and the conference adopted a resolution in favor of the Conference. A pastoral address was adopted, and sent out.

ii. Methodist Protestant Church. - The following is a summary of the statistics of the Church as they are given in the "Methodist Protestant Year-Book" for 1884. Number of annual conferences, 48; of itinerant ministers, 1,469; of local ministers, 977; of lay members in full membership, 121,659, with 3,756 probationers, making a total of 125,611 lay members; number of Sunday-schools, 1,624, with 14,222 officers and teachers and 88,322 scholars; number of churches, 1,181; of parsonages, 300; value of churches and parsonages, $2,886,400. Collections for missions, $7,475; for ministerial education, $8,188. Ninety-five churches and 22 parsonages were built during the year.

Reports from the Year-Book Concerns were presented to the General Conference, showing that the net assets of the house in Baltimore were $9,401, and those of the house in Pittsburg, 24, were $20,985. The Board of Ministerial Education reported that its receipts for the past four years had been $11,017, and its expenditures $9,914; and that its net assets were $5,021. Eighty-three young men had received assistance from the board, 55 of whom were engaged in the work of the Church.

General Conference. - The General Conference of the Methodist Protestant Church met in Baltimore, Md., May 16th. The Rev. W. S. Hammond, of Maryland, was chosen president. The General Conference of 1880 had adopted a proposition for holding a convention for the consideration of constitutional changes, upon the ratification of which by two thirds of the annual conferences, the present General Conference would be empowered to constitute itself into such a convention. The committee to which the subject was referred reported that twenty-five conferences had voted for a convention without limitations, or according to the resolutions of the General Conference, and six conferences had voted for a convention with special instructions, making thirty-three conventions in all, or more than two thirds, which had voted favorably upon the proposi-
METHODISTS.

The General Conference accordingly constituted itself a General Convention. The purposes of the organization in this form were to consider verbal alterations in the constitution of the Church, and such changes as might be recommended by two thirds of the annual conferences; and to consider questions concerning the modification of the rules bearing on the time for which a pastor may serve a single charge. Upon the last subject, an article was adopted as an amendment to the restrictive rules, declaring that "no rule shall be made to abolish an efficient itinerant ministry, but each annual conference shall have authority to determine for itself whether any limit, or, if any, what limit, shall be to the renewal of the annual appointments." The Convention resolved that it had no jurisdiction in deciding the qualifications for admission to the Church, as that matter was left to individual churches, or to annual conferences. The attention of the Conference was called to a case in which a woman had been ordained elder by one of the annual conferences, and a resolution was adopted, declaring the act unauthorized, and refusing recognition of it. An article was adopted, providing that alterations in the Constitution may in future be made on the recommendation of the General Conference, by a two-thirds vote of the annual conferences. A proposition to separate the home and foreign departments of the Board of Missions was negatived. The Woman's Foreign Missionary Society was adopted, to have charge of the work for women and girls in all the missions of the Church that shall be established in the foreign field. The President of the Convention was authorized to appoint a committee to correspond, having union in view, with the Congregational Methodist Church. The subject of union with the Cumberland Presbyterian Church was considered, and a resolution was adopted to appoint five commissioners to correspond with commissioners from that body upon a plan of union, with instructions to report progress to the annual conferences. A committee was appointed on the subject of a second Ecumenical Council of Methodist Churches, to be held in the United States in 1887. To a communication, inviting the Methodist Protestant Church to participate in the centennial celebration of the organization of the Methodist Episcopal Church in the United States, to be held within the current year, the Conference replied that, "being duly impressed with the Christian courtesy and good-will which this invitation implies, we would respectfully state that, while as a denomination we could not feel free to appear as participants in the celebration, it nevertheless affords us much pleasure to return our Christian acknowledgments for the invitation so kindly extended"; and a fraternal commission was appointed to convey to the Centennial Conference, to be held in Balti-

more, the greetings of the Convention, and its grateful recognition of "what God has wrought in this land through organized Methodism, both Episcopal and non-Episcopal."

III. African Methodist Episcopal Church.—"The Budget," published by the financial secretary of the General Conference, gives the following general summary of the statistics of the African Methodist Episcopal Church for 1884:

- Number of bishops, 9; of annual conferences, 41; of ministers, 2,540; of church organizations, 3,978, under whose control are 2,749 church-buildings; of members, 390,000; of probationers, 15,000, making in all 405,000 members and probationers; number of persons studying in the conference classes, 1,418. The "Budget" also gives the following estimate of the numbers of full members in all the African colored Methodist churches in the United States:

<table>
<thead>
<tr>
<th>Church Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Methodist Episcopal Church</td>
<td>200,000</td>
</tr>
<tr>
<td>African Methodist Episcopal Zion Church</td>
<td>200,000</td>
</tr>
<tr>
<td>African Methodist Episcopal Church (colored members)</td>
<td>100,000</td>
</tr>
<tr>
<td>Union Methodist Episcopal Church</td>
<td>100,000</td>
</tr>
<tr>
<td>Total</td>
<td>1,500,000</td>
</tr>
</tbody>
</table>

Adding to these the colored communicants in other churches (Baptist, 661,568; American Missionary Association, 4,961; Presbyterian freedmen's churches, 11,108; Methodist Episcopal Church, South, 1,245; other denominations, 20,000, etc.), we have the whole number of colored communicants in the churches of the United States not far from 1,700,000, or one for 5% of the whole colored population.

The whole number of Sunday-schools in the African Methodist Episcopal Church is returned at 8,417, with 26,420 officers and teachers, and 178,224 pupils. The financial report referred to the General Conference that its receipts for the year ending April 30, 1884, had been $42,962, and its disbursements $50,600. Its receipts for the four years since the preceding General Conference were $179,964, while its expenditures were $177,855. Of the receipts, $169,389 were from contributions in the form of "dollar-money." The receipts in the publication department for four years had been $63,151, and the expenditures $63,064. The department returned a net capital of $24,573. The educational interests of the Church are under the care of a Board appointed by the General Conference. The institutions are as follow: Wilberforce University, Wilberforce, Ohio, 5 departments, 7 in faculty, 609 students; Johnson High School, Raleigh, N. C., 2 departments, 8 instructors, 238 students; Allen University, Columbia, S. C., 8 departments, 9 instructors, 249 students; William Paul Quinn College, Waco, Tex., 5 departments, 4 instructors, 190 students; St. James Academy, New Orleans, La., 1 instructor, 150 students; Divinity and High School, Jackson-ville, Fla., 3 instructors; Ward Normal Col- 

The educational interests of the Church are under the care of a Board appointed by the General Conference. The institutions are as follow: Wilberforce University, Wilberforce, Ohio, 5 departments, 7 in faculty, 609 students; Johnson High School, Raleigh, N. C., 2 departments, 8 instructors, 238 students; Allen University, Columbia, S. C., 8 departments, 9 instructors, 249 students; William Paul Quinn College, Waco, Tex., 5 departments, 4 instructors, 190 students; St. James Academy, New Orleans, La., 1 instructor, 150 students; Divinity and High School, Jacksonville, Fla., 3 instructors; Ward Normal College, Huntville, Tex., 2 departments, 8 instructors, 164 students; Turner
Hernando, Miss.; Western University, Kansas; Morris Brown University, Ala.; and Garfield University, New York. All but the first two of situations have become active only in the last few years. The total value of their property at $151,600, but some of them are under heavy indebtedness. Thirty-five schools are also maintained in the South. The total receipts of the Foreign Missionary Society for the year ending 1887, excluding special funds, were $34,811, and expenditures were $36,112. The society has been organized only four years, and its object is to establish a mission at Port-au-Prince, having in view, also, missions in the South. The society reports as in the Indian Territory, with 23 churches, 328 churches, 28 Sunday-schools, and 234 communicants. In the home mission, the number of churches had been so rapid that several conferences had been formed, and others were being talked of. The Church of Philadelphia, from which the “Christian Recorder,” its official organ, was issued, was $38,189, and the church was extended. The returns to the General Conference were $31,117, and the indebtedness was $36,112.

Conference.—The General Conference of the Methodist Episcopal Church, held at Baltimore, Md., May 5th. The conference was held at the same formal address of the bishops, and was concluded with a review of the past work of the church and the future work to be done. The conference was invited to the Union of the British Methodist Church, which was included chiefly in the British Protestant and in the Episcopal jurisdiction. R. R. Daney, bishop of the former jurisdiction, was elected to the General Conference as representative of the church. Declarations were made by the bishops of the Episcopal Church, and by the bishops of the Church of England, regarding the doctrine of the apostles and the doctrine of the church generally. The adoption of the general rule of order was ordered, and the adoption of the rule of order was ordered. The adoption of the rule of order was ordered. The adoption of the rule of order was ordered. The adoption of the rule of order was ordered. The adoption of the rule of order was ordered. The adoption of the rule of order was ordered.

IV. African Methodist Episcopal Zion Church.—The statistics of this church are very incomplete. The statistical secretary reports the following items, which are, however, mostly regarding as falling short of giving a true representation of the condition of the church: Number of churches, 21; of elders, 500; of deacons, 347; of traveling preachers, 234; of local elders, deacons, and preachers, 1,800; of exhorters, 1,148; of members in full connection, 154,800; of probationers, 14,322; of churches, 1,180; of parsonsages, 856; of Sunday-schools, 2,071, with 9,222 officers and teachers and 90,328 scholars; value of church property, $4,109,321. The real total number of members of the church is believed to be 225,000 or 250,000. The African mission returns one missionary, 10 local preachers, 14 exhorters, 5 elders and deacons, 600 members, and 156 probationers, or a total of 657 members.

The receipts of Zion Wesley Institute, Salisbury, N. C., for four years have been returned to the General Conference at $17,845. Its liabilities were estimated at $5,844. The school was attended by 146 pupils.

The receipts of the Book Concern for four years have been $8,539, and its expenditures $8,530, while its liabilities were $1,979.

General Conference.—The General Conference of the African Methodist Episcopal Zion Church in America met in its seventeenth session in the city of New York, May 7th.

The bishops presented a “quadrennial address” relating to the transactions of the Episcopal Board during the previous four years, and reviewing the condition of the connectional interests. In accordance with the instructions of the preceding General Conference that they should make a new assignment of episcopal districts, they had assigned to each bishop the attendance upon a certain number of conferences, the results of which had been to make the several members of the board more extensively acquainted with the conduct and character of the connection; to bring them more frequently together; and to give more unity to the episcopal superintendence. The Foreign mission (in Africa) had prospered; and the missionary, the Rev. Andrew Cartwright, had been empowered to hold annual conferences in Africa, and to authorize and appoint suitable persons to preach and teach the people, subject to the ratification or modification of the General Conference. The Zion Wesleyan Institute at Salisbury, N. C., had been strengthened by gifts of $9,000 obtained through the agency of its principal from friends in England, and by the contribution of $1,000 from citizens of Salisbury. The efforts in behalf of church extension had been attended with a success that was marked by the building of several fine churches. The financial resources of the Church had been greatly strengthened. Much of the time of the General Conference was
spent in the consideration of the case of Bishop Hillery, who was charged with conduct unbecoming to a bishop. He was deprived of his episcopal office, and was remanded to the annual conference within whose jurisdiction he was living for the trial of his Christian character. A general financial plan was adopted, the basis of which is an assessment of fifty cents a year upon each member of the Church over fifteen years of age and able to pay, for the constitution of a general fund. The proceeds of this fund are to be apportioned: 1. To the payment of the salaries of the bishops and the expenses incurred in their regular episcopal tours. 2. To the Zion Wesley Institution. 3. To the Book Concern. 4. To the periodical "The Star of Zion." 5. To the superannuated ministers. 6. To the payment of the salaries of the general steward and secretary. Provisions were made for the suspension by the General Conference of bishops under charges and for their trial by the annual conference from within whose bounds the charges may have come; for the trial of local preachers and exhorters; and for the constitution of courts of appeal for ministers convicted by an annual conference. Provision was made that when a church-member leaves the vicinity of his church without a letter, and remains away six months without communication, his name shall be stricken from the roll of members and placed upon the list of probationers. Female members of the church were declared to have all the rights and immunities of male members, including the right to be licensed as evangelists, except the rights to orders and the pastorate. The subject of the appointment of evangelists was referred to the Board of Bishops. An additional course of studies to those already laid down in the Discipline was recommended for applicants for admission to an annual conference. It includes a fair knowledge of orthography, reading, writing, geography, history, grammar, and the study of the following books in the list: Bunyan's Theological Compend, Bible History, Primary History of Christian Evidences, by Hurst, and the History of the African Methodist Episcopal Zion Church. The Conference also recommended that the studies required of an applicant for admission to an annual conference be pursued by applicants for local preacher's license; and that applicants for exhorter's license be required to read and write before receiving license. The ministers and people of the church were exhorted to teach the duty of abstinence from all that intoxicates; the use of unfermented wine in the Lord's Supper was advised; and each minister was recommended to preach two temperance sermons each year to his congregation. Resolutions were passed touching the deaths of John F. Slater and Wendell Phillips, benefactors of the colored race.

V. Wesleyan Methodist Connection.—The following is the "General View of the Statistics of the British and Affiliated Conferences":

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>Members</th>
<th>Ch. Sts.</th>
<th>Minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. In Great Britain</td>
<td>610,656</td>
<td>53,572</td>
<td>2,464</td>
</tr>
<tr>
<td>II. In Ireland and Irish</td>
<td>94,045</td>
<td>001</td>
<td>138</td>
</tr>
<tr>
<td>Missions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>III. In Foreign Missions</td>
<td>11,101</td>
<td>6,110</td>
<td>245</td>
</tr>
<tr>
<td>IV. South African Confer-</td>
<td>1,298</td>
<td>0,599</td>
<td>92</td>
</tr>
<tr>
<td>ences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V. French Conference</td>
<td>1,571</td>
<td>149</td>
<td>25</td>
</tr>
<tr>
<td>Totals</td>
<td>680,908</td>
<td>54,780</td>
<td>2,831</td>
</tr>
</tbody>
</table>

Wesleyan Missionary Society.—The meeting of the Wesleyan Missionary Society was held in London, May 5; Mr. J. S. Stott presided. The deficit for the year, including the receipts for special appeals, was £150,106, and the expenditure was £150,161. The Ladies' Committee also expended £3,197, besides furnishing materials, clothing, etc., for many part-mission fields. The following is the "Summary" of the missions, as returned secretary of the society, under the direct and immediate direction of the Wesleyan Mission Committee and British Conference in India, China, West Africa, the Transvaal, and the West Indies:

Central or principal stations, called circuits
Chapels and other preaching places, in connection with the above-mentioned central or principal stations
Missionaries and agents, including missionaries, includingPermanent missionaries
Other paid agents, as missionaries, interpreters, school-teachers, etc.
Unpaid agents, as local preachers, Sunday-school teachers, etc.
Full and accredited church-members
On trial for church-membership
Scholars, deducting those who attend both the Sunday schools

Benevolent Enterprises and Funds
Committee of the Wesleyan Home Missions Contingent Fund reported to the Council that the receipts for the year were £54,017.

The ordinary income for the year was £9,475. The receipts from the sale of new chapels, schools, etc., had been at a cost of £235,765. The amount of debts paid off during the year was £56,679. The Fund for the Relief and Support of Missionaries in Scotland returned a surplus of £249, mostly from the vested funds. The income of the Metropolitan Chapel Building Fund, from all sources, amounted to £58,002. The expenditure left was £2,149 in the bank on the grants a This fund was commenced in 1861, at a cost of £65,000, added in the erection of some 66 large and small churches in London, with seating accommodations for 2,000 persons, at a total cost, when

*The French ministers who are employed in the Islands district are not included in these returns.
an £600,000, of which the fund had
sted and promised £170,000. The Theo-
institutions made a return of 140 stu-
t the four schools. The Fund for the
of Methodism had received and con-
d applications for aid, and had paid
for sites and grants for chapels. The
the Educational Fund had been
Two hundred and twenty-four stu-
ded in the training-colleges at
ner and Southlands, and in the 849
ools an attendance of 177,496 pupils.
os of the day-schools had been, from
ence, £38,750; from Government
104,914; and from subscriptions and
ources £23,948. The Connectional
School Union returned 6,601 Sunday-
with 133,018 officers and teachers,
1,459 scholars, and 2,737 Bands of
ith 277,590 members. The Committee
ksgiving Fund reported that it had
in promises £303,000, and in actual
ments, £298,740. Adding accrued
, the total receipts had been £297,518.
ents were made for closing the ac-
of this fund, which had been instituted
ical occasion and for special purposes
the ensuing year. A net increase for
of 3,381 members was returned in the
district.
Methodist Conference.—The one
and forty-first Conference of Wesleyan
met in Burslem, July 22. The Rev.


inian Annual Conferences; the Western
nclude the Jamaica and the istran Con-
the Antigua district and the British
of the two conferences together
the West Indian General Con-
which shall meet every three years,
affiliated with the British Conference.
George Sargeant was appointed the
resident of the new Conference. A
at was made by a delegate from the
constituted South African Conference,
had held its first meeting during the
year, showing that while the churches
ng it had returned, in 1873, 85 minis-
, 718 church-members, with 4,118 on
13,091 Sunday-school scholars, they
turned 174 ministers, 21,993 church-
rs, with 9,539 on trial, and 24,068 Sun-
ool scholars. Several ministers and
had also been transferred to the dis-
yond the Transvaal, which, had they
cluded in the present enumeration,
have been included in the list for the
. A library, containing 10,000 volumes,
unbound dissertations, and 10,000 dis-
s in German, was offered by a gentle-
rho desired his name to remain un-
known, and was accepted by the Conference
to constitute a Conference library; and mea-
ures were taken to institute regulations for its
care and use. The attention of the Conference
was called to the case of a minister who held
the doctrine of "conditional immortality," in
which is involved the belief that the wicked,
after suffering a period of punishment for their
sins, will eventually pass out of existence; a
doctrine contrary to the standards of the
Methodist Church. The minister had been al-
lowed to exercise his ministry in the Church,
in the hope that he might come into accord
with its views on the subject, but he had not
done so. His case was disposed of by a de-
cision of the Conference to retain him as a
"supernumery," on condition that he should
not preach in its pulpits or disseminate his
opinions among the Methodist people.
South African Conference.—The South Af-
ican Conference was held in April. The re-
port of the Educational Committee showed that
there were connected with the Church 8 Eng-
lish and 264 native schools, with a total of
14,977 scholars, or 261 more than were re-
turned in the previous year. Of these, 560
were white, and 14,422 African or colored
children. The Sunday-School Committee re-
turned 882 English and 167 native Sunday-
schools, with 8,964 European and 11,504 native
scholars. A committee to consider the ques-
tion of higher education among the natives
was continued. Provision was made for the
formation of a South African Missionary So-
ciety. The question of establishing a mission
press and a Connectional Book Concern was
referred to a committee for consideration.
VI. United Methodist Free Churches.—The fol-
lowing is a summary of the statistics of this
body, as they were reported to the Annual
Assembly in July, 1884:

Number of itinerant preachers, 373; of local
preachers, 3,380; of leaders, 4,068; of mem-
ers, 75,841; of members on trial, 8,628; of
chaplains, 1,850; of preaching-rooms, 184; of
Sunday-schools, 1,350, with 23,481 teachers
and 196,509 scholars. The total income of the
United Methodist Free Churches Home and
Foreign Missions for the year ending May 1,
1884, was £17,004, and the expenditures were
£19,311. The annual report mentioned, as one
of the most important events in the year's his-
tory of the foreign departments, the opening
of the Galla Mission, in East Africa, for which
£1,000 had been secured. The churches of
Sierra Leone, Western Africa, had contributed
£230 to the General Missionary Fund. The
subject of Methodist union was under consid-
eration with the churches in Australia and
New Zealand. An increase of 226 church-
members was reported in Jamaica, where also
the numbers of the day-schools were employed.
The Annual Assembly of the United Method-
The increase of the national revenues of Mexico, a sign of the awakening of enterprise, is shown in the following table:

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Total revenue</th>
<th>Customs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1872-75</td>
<td>$17,811,125</td>
<td>$1,238,234</td>
</tr>
<tr>
<td>1876-79</td>
<td>$16,946,165</td>
<td>$1,942,829</td>
</tr>
<tr>
<td>1860-63</td>
<td>$21,065,000</td>
<td>$2,804,320</td>
</tr>
<tr>
<td>1851-55</td>
<td>$20,750,000</td>
<td>$2,176,000</td>
</tr>
<tr>
<td>1866-69</td>
<td>$58,000,000</td>
<td>$6,000,000</td>
</tr>
</tbody>
</table>

The stamp-tax went into effect on April 7. It was levied on wines, liquors, canned and preserved foods, foreign glassware, books, and hats; imposing 1 per cent. on the price of jewelry; expensive wines, twenty cents a bottle, and wine in barrels 10 per cent.; foreign beer, five cents a bottle; playing-cards, 50 per cent.; canned goods, 1 per cent.; bonnets, boots, and shoes (worth over $21, 1 per cent., and fine hardware, 1 per cent.). Goods in store were to be stamped immediately, and those in warehouse within one month. The measure being highly unpopular, the Government modified it two days later, requiring stamps only on goods as sold, and exempting articles in stock.

The silver coinage of Mexico, for the fiscal year 1882-'83, amounted to $54,083,522, and the gold to $407,600, a total of $54,491,122. In April a decree was issued by the President of Mexico, ordering that on and after May 15, 1884, the duty upon all goods imported into the country should be increased 5 per cent.

The foreign debt embraces the following items: English loan of Oct. 14, 1860, $89,092,860; agreement of indebtedness to English bondholders of Dec. 4, 1881, $5,900,000; issue to Spanish of Dec. 6, 1855, $1,231,775; duty of Nov. 12, 1853, $3,553,287; debt to the United States of July 4, 1868, $1,875,129; internal debt, $40,541,215; grand total, $114,039,795.

Early in May the run on the Monte de Piedad Bank had created a panic among depositors and a distrust in the financial stability of all...
ing firms in the city. The Bank of London, and South America was the least of, having been quietly withdrawing its January 1, in anticipation that a mo- circulation would be given the contri- National and Mercantile Banks. The is soon over, when it appeared that the sent made no demand on the Monte did Bank for a loan. The manager of the did not call on the other banks for until too late, and payment had to be. On July 4 this bank made a the condition, showing it to be a. At the end of May the assets over liities were $1,420,000, calculating the at cost, while values had enormously l. Claims to the amount of $1,640,000 liquidated at par since the failure of k. Half a million dollars' worth of the denomination of $100 were burned same day in the presence of the Gov- accountant-general and notary, but no of a former circulation of $4, reaming unredeemed. Confidence in nation was restored, but it was resolved continue the banking department.

While the Government had made an for a loan of $5,000,000 to meet orary needs, and the new consolidated Bank secured for the Government as supposed to be impossible, a Euro of $20,000,000. In return, the extended, by charter, to the con- bank the privilege of exclusive note. Everything had been managed by Ed- stoff, the gentleman who in September represented the Mexican Government in its With the British holders of Mexico, perfecting articles of agreement for ament of the matter, and his report nitted to Congress in November. The it provides for issuing $217,200,000 of £14,408,000 of these bonds to be canceling the old debts of 1851 and the interest of 1858 and a few mi- a. The bill before Congress also pro- setting aside part of the revenue of bie to meet the annual interest. When parts of this arrangement were made in Mexico, a storm of indignation arose, of the discrepancy between the amount onds the Government was to issue and to be applied to the conversion of the bonds, leaving $2,783,000 to pay the of the adjustment. The bill to au- this settlement was rejected by Con- November 21, amid great excitement er some outside pressure. days after his inauguration, President ceased in raising sufficient funds for porary needs of the Treasury, and to Government employed in full. He also necessary steps to pay regularly the railway subsidies, amounting to 14 of the customs duties.

Service. The number of post-offices in 1884 was 892, of which 53 are chief offices, 266 express offices, and 573 agencies:

<table>
<thead>
<tr>
<th>CLASS OF MATTER</th>
<th>IN THE</th>
<th>INTERNATIONAL</th>
<th>RECEIVED</th>
<th>FORWARDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary letters</td>
<td>3,786,164</td>
<td>2,084,007</td>
<td>383,700</td>
<td>548,721</td>
</tr>
<tr>
<td>Registered letters</td>
<td>813,585</td>
<td>4,021</td>
<td>14,907</td>
<td>9,137</td>
</tr>
<tr>
<td>Parcel-cards</td>
<td>5,455</td>
<td>11,225</td>
<td>8,565</td>
<td></td>
</tr>
<tr>
<td>Newspapers, etc.</td>
<td>8,001,290</td>
<td>609,902</td>
<td>190,380</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18,830,295</td>
<td>771,178</td>
<td>781,506</td>
<td></td>
</tr>
</tbody>
</table>

| GRAND TOTAL | 18,830,295 | 771,178 | 781,506 |

| TOTAL RECEIPTS | 18,830,295 | 771,178 | 781,506 |

| TOTAL | 18,830,295 | 771,178 | 781,506 |

| TOTAL | 18,830,295 | 771,178 | 781,506 |

In May the railway mail bureau completed the schedule for the mail service between points in the United States and the city of Mexico. The service is daily, and the running time between New York and the city of Mexico is six days twenty-three hours and ten minutes, while the return trip is made in seven days one hour and twenty minutes.

Telegraphs. There were in operation on June 30, 1884, 20,500 kilometres of Government lines; 1,484 belonging to individual States; 3,602 the property of private companies; 5,000 to railways, and 875 of Mexican cable, together 81,861 kilometres, or 19,757 miles. In 1883 the length of lines measured 28,125 kilometres; there was consequently an increase in a single year of 8,338 kilometres, or 2,040 miles. There are 828 offices.

Railroads. The Mexican railroad system, at the close of 1884, was made up of these lines:

<table>
<thead>
<tr>
<th>Kilometres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vera Cruz to Mexico</td>
</tr>
<tr>
<td>Vera Cruz to Jalapa</td>
</tr>
<tr>
<td>Vera Cruz to Matamoros</td>
</tr>
<tr>
<td>Puebla to Apatzingán</td>
</tr>
<tr>
<td>Tepozteco to La Esperanza</td>
</tr>
<tr>
<td>Puebla to Villa de los Remedios</td>
</tr>
<tr>
<td>Irapuato</td>
</tr>
<tr>
<td>Mexico to Yacata</td>
</tr>
<tr>
<td>Mexico to Cuapiax</td>
</tr>
<tr>
<td>Puebla to Tepic</td>
</tr>
<tr>
<td>Puebla to San Juan</td>
</tr>
<tr>
<td>Puebla to Toluca</td>
</tr>
<tr>
<td>Mexico to Paso del Norte</td>
</tr>
<tr>
<td>Sinaloa to Guaymas</td>
</tr>
<tr>
<td>Colima to Manzanillo</td>
</tr>
<tr>
<td>Mexico to Acapulco</td>
</tr>
<tr>
<td>Acapulco to Morelia</td>
</tr>
<tr>
<td>Acapulco to San Miguel</td>
</tr>
<tr>
<td>Matamoros to Monterrey</td>
</tr>
<tr>
<td>Laredo to Saltillo</td>
</tr>
<tr>
<td>Potosí to Monclova</td>
</tr>
<tr>
<td>Allia to Colima</td>
</tr>
<tr>
<td>Moctezuma to Progreso</td>
</tr>
<tr>
<td>Mier to Peto</td>
</tr>
<tr>
<td>Vera Cruz to Chihuahua</td>
</tr>
<tr>
<td>Vera Cruz to Tampico</td>
</tr>
<tr>
<td>Chihuahua to Tamaulipas</td>
</tr>
<tr>
<td>Guaymas to Nogales</td>
</tr>
<tr>
<td>San Luis to Tampico</td>
</tr>
<tr>
<td>Trainways</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Building</td>
</tr>
<tr>
<td>Grand total</td>
</tr>
</tbody>
</table>
MEXICO.

The value of exports from Mexico during each year since 1873, for which data can be procured, has been as follows for the years ended June 30:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1873</td>
<td>$2,056,905</td>
</tr>
<tr>
<td>1874</td>
<td>$2,636,708</td>
</tr>
<tr>
<td>1875</td>
<td>$2,759,613</td>
</tr>
<tr>
<td>1876</td>
<td>$2,682,460</td>
</tr>
</tbody>
</table>

The exports of articles other than the precious metals during the year ended June 30, 1888, consisted of the following:

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Henanop (a kind of hemp)</td>
<td>$8,912</td>
</tr>
<tr>
<td>Lemmon</td>
<td>9,171</td>
</tr>
<tr>
<td>Coffee</td>
<td>1,171</td>
</tr>
<tr>
<td>Hides and skins</td>
<td>1,456</td>
</tr>
<tr>
<td>Irie (another kind of hemp)</td>
<td>2,025</td>
</tr>
<tr>
<td>Amor</td>
<td>4,490</td>
</tr>
<tr>
<td>Vassil</td>
<td>3,240</td>
</tr>
<tr>
<td>Tobacco</td>
<td>2,420</td>
</tr>
<tr>
<td>Sugar</td>
<td>1,005</td>
</tr>
<tr>
<td>Cutch</td>
<td>100,921</td>
</tr>
<tr>
<td>Books</td>
<td>105,668</td>
</tr>
<tr>
<td>Honey</td>
<td>115,971</td>
</tr>
<tr>
<td>Bees</td>
<td>140,839</td>
</tr>
<tr>
<td>Calcoso (Indian)</td>
<td>155,205</td>
</tr>
<tr>
<td>Fruits</td>
<td>50,480</td>
</tr>
<tr>
<td>Dye-wood</td>
<td>14,888</td>
</tr>
<tr>
<td>Copper</td>
<td>229,980</td>
</tr>
<tr>
<td>Indian corn</td>
<td>20,890</td>
</tr>
<tr>
<td>Horse-hair</td>
<td>90,001</td>
</tr>
<tr>
<td>Barasaperta</td>
<td>50,980</td>
</tr>
<tr>
<td>Lead</td>
<td>47,244</td>
</tr>
<tr>
<td>Mother-of-pearl</td>
<td>44,414</td>
</tr>
<tr>
<td>Medical plants</td>
<td>45,692</td>
</tr>
<tr>
<td>Sugar-cane</td>
<td>28,132</td>
</tr>
<tr>
<td>Chick peas (a kind of rice)</td>
<td>24,930</td>
</tr>
<tr>
<td>Leguminous pulses</td>
<td>10,560</td>
</tr>
<tr>
<td>Peas</td>
<td>10,540</td>
</tr>
<tr>
<td>Spices</td>
<td>17,945</td>
</tr>
<tr>
<td>Cereals</td>
<td>2,450</td>
</tr>
<tr>
<td>Artificial</td>
<td>690</td>
</tr>
<tr>
<td>Cacao</td>
<td>690</td>
</tr>
<tr>
<td>Other articles</td>
<td>21,616</td>
</tr>
</tbody>
</table>

Total: $1,178,987

The following statement shows the value of the commerce between the United States and Mexico:

<table>
<thead>
<tr>
<th>Year ended June 30th</th>
<th>Exports</th>
<th>Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Domestic</td>
<td>Foreign</td>
</tr>
<tr>
<td>1890</td>
<td>$2,605,971</td>
<td>$1,490,519</td>
</tr>
<tr>
<td>1891</td>
<td>1,921,317</td>
<td>1,374,161</td>
</tr>
<tr>
<td>1892</td>
<td>15,842,269</td>
<td>2,125,077</td>
</tr>
<tr>
<td>1893</td>
<td>14,872,399</td>
<td>2,216,832</td>
</tr>
<tr>
<td>1894</td>
<td>11,009,693</td>
<td>1,414,506</td>
</tr>
</tbody>
</table>

American Goods in Mexico.—Consul Campbell reports that one American sewing-machine firm sold 1,800 machines in Monterey in 1888. Two stores imported 2,594 American plows, and American agricultural implements have driven the English and German goods out of the market. About 160,000 gallons of American kerosene were sent to Monterey in fourteen months, and the price at retail there was 70 cents a gallon.

Subsidized Steamship Company.—The Compañía Mexicana Transatlántica was organized in Mexico in 1884, with Dr. Jose María Dornelles as president, and Baring Brothers as the English agents. It is the intention of the company to have six steamers on the route, but at present there are but two. The Tampico is the Mexican, and the Tansui is the English. The capital of the company was furnished in Mexico, and subsidy is allowed to the line by the Government. The pioneer ship Oax launched in Glasgow. She has a gross of 2,480 tons and a net capacity of 2,000. Her length over all is 400 feet, her breadth 32 feet and her depth of draught 25 feet. She is fitted with a screw propeller, with a triplicating engine of 5,000 horse-power, and rationally arranged for tropical trade. The steamer was about $800,000.

Army and Navy.—The military force of the republic consists of an army number 574 men, with 1,741 officers, and a four-gun battery.

Events of 1884.—The year will be memorable in Mexican annals on account of the uninterrupted direct rail communication between the United States. Continued stasis in business was caused partly by exports in the preceding years, and by a depression in the currency. The government general finances have also been in straits, and Congress has only re-established the deficit by a tax law. Britain's influence was increased by the association of Britain, backed by British bondholders, on a state bond issue of four years. Unfortunately, the accession of Porfírio Díaz, and the hope that he would reform the country, where there is a revolution, was not successful. The troubles were aggravated by the severe drought and failure of the corn crop in a portion of the north. Confidence in the new admiral, however, opened up a fair prospect for the year.

Condition of the Country.—In his first annual message to Congress, April 1, P. S. González, predecessor of Porfírio Díaz, reported that the relations with foreign powers were cordial and that negotiations for renewing relations with England was in progress. The reciprocity treaty with the United States was in force, and the relations with the foreign powers were cordial. The railroad system was growing, and the telegraphic system was largely under the control of the Mexican government. A line to Asia was being built, and the fusion of the Bank of Mexico and Mercantile Banks was completed. The railroad system was being expanded, and the most important of the recent legislation was the completion of the railroad system in the north. The President said that a commission was sent to China and Japan to develop commercial relations with those countries.

On the reopening of Congress, on December 1, the President said that a commission was sent to China and Japan to develop commercial relations with those countries.

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MEXICO.

With the American line, having been extended 20 years. The message dwelt upon the development of railways and telegraphs, colonization, and harbor improvements, winding up with announcing that a new tariff would soon be submitted to Congress.

Relations with the United States.—The President of the United States, in his annual message to Congress, Dec. 1, 1884, said:

During the past year the increasing goodwill between our own Government and that of Mexico has been variously manifested. The treaty of commercial reciprocity concluded Jan. 29, 1883, has been ratified, and the necessary tariff legislation of Congress has become effective. A full treaty of commerce, navigation, and consular rights is much to be desired, and such a treaty I have reason to believe that the Mexican Government stands ready to conclude. Some uncertainty has been occasioned by the failure of Congress at its last session to provide means for the execution of the treaty of July 29, 1883, for the survey of the Mexican boundary and the relocation of boundary monuments.

Relations with England and Canada.—On Aug. 1, 1884, Lord Edmund Fitzmaurice, Under Secretary of State for Foreign Affairs, announced in the British House of Commons that diplomatic relations had been resumed with Mexico, and that an agreement had been signed with that country, placing England upon the "most-favored-nation footing." The opening of negotiations for a commercial treaty between the two countries was viewed with particular satisfaction in Canadian mercantile circles, believing as the merchants did that a large and profitable trade between the Dominion and Mexico would follow closely upon the successful consummation of the treaty. On October 10 news reached Ottawa that the Mexican Senate on the previous day had ratified the agreement, and that the President approved it.

Oak-Wood.—This has become a very interesting product, exported from the ports of Magdalena Bay, Lower California. The wood is collected on the lands bordering on the northern portion of the Pacific side of this Territory. Although the article is taxed at the rate of $10 a ton, and the collecting, packing, and shipping expenses are excessive, the returns for the miles in Europe show a handsome profit.

Cod.—Two discoveries of large bodies of anthracite coal were reported, during the latter part of 1884, in northern Mexico. The accounts from these coal-beds are extraordinary, and if the experts who are going to examine them should find them as represented, the results on manufacturing in San Francisco and vicinity are expected to be very important.

Zapote-Wood.—It is asserted on eminent engineering authority that the best wood yet discovered for railway-ties is Zapote, used for this purpose in Mexico. It is essentially a tropical timber, and is exceedingly durable for outdoor work, above or below ground. Samples of this wood, taken out of buildings 200 years ago, did not show the slightest indications of decay. This wood is nearly as dark as logwood. It is very heavy, and sinks in water, and so hard that the boring of the holes for the spikes and forming the grooves for the rails is very laborious work. It appears to be almost impervious to decay, but has a tendency to split if exposed to the heat of a tropical sun for a few months; for this reason the zapote ties have to be kept covered with bailset.

Need of a Paper-Mill.—A premium of $30,000 has been offered by the Mexican Government to any one who will establish in that country a paper-mill at a cost of $150,000. The Government will also concede a right to all cacti-plants on the State lands. There are very few such manufacturers in the country, and none at all on the Pacific coast. Nearly all the paper used in Mexico is imported from Europe (Germany in particular), except cigarette-paper and coarse wrapping-paper, which is made in Guadalajara. The raw materials, in the shape of the natural fiber of the banana, the cacao, and the muguey, are very plentiful, and rags and cotton waste are cheap and near at hand. State and municipal governments also promise aid to those willing to go into the business of paper-making, declaring that they will release the property from all taxation for ten years.

Replanting of Trees.—A contract was concluded in 1884 by the Mexican Government with Oscar Drooge, of Tampico, to plant 2,000,-000 trees in the valley of Mexico within four years. The trees specified are chiefly ash, poplar, acacia, and mountain cedar, with a sufficient margin for miscellaneous kinds, according to special conditions of site and climate, and the arrangements contemplate the formation of national nurseries in which scientific forestry may be pursued on a footing in some degree commensurate with its importance.

Peat.—The peat of Mexico was used in 1884 on a considerable scale as fuel for locomotives, stationary engines, smelting purposes, smiths' fires, and household use. The peat is mixed with bitumen, and is said not only to burn freely, and without smoke in much quantity, but to give a higher dynamic equivalent of heat than the same amount of wood.

Pearl-Fishing.—In February, 1884, the Mexican Government granted to a native company a concession, for sixteen years, to fish for pearls from Cape St. Lucas to Colorado river. This concession was transferred in July to a San Francisco company. They pay a royalty of $10 a ton on pearl-shells for three years, and $15 for the remainder of the time. From pearls alone the revenue is estimated at $250,-000 per annum, and from shells at $150,000. One pearl obtained in December, 1884, is worth $17,000.

A Large Ranch.—An enormous ranch in Mexico was purchased in 1884 for $200,000 by a syndicate of English and Scotch speculators, of whom Lord Tweedmouth is one. It extends over 1,600 square miles.

Contracts for Arms.—In February, 1884, the
Remington Arms Company, of Ilion, N. Y., closed a contract with the Mexican Government for 25,000 Lee magazine rifles, and 15,000 carbines of the same manufacture.

Mission Work.—The Rev. J. Milton Greene, who went to Mexico as a missionary in 1881, says:

The dominant religion is Catholicism, with a strange mixture of the old Aztec rites. In their processions the natives ornament themselves with feathers, paint their faces, and dance around images. We began missionary work in Mexico twelve years ago, and the results of our labor, considering the time and money expended, have been more gratifying than from any other of our missions in the world. We have established 56 churches with a regular attendance of 10,000; 17 Sunday-schools, attendance, 883; 13 day-schools, attendance, 460; a girls’ normal college with 20 pupils, and a theological seminary with 9 students. All our work is carried on in Spanish. Of the prominent political parties I found the Clericals stopping the wheels of progress, while the Liberals showed a disposition to imitate American push. The Mexicans show great intelligence, and are anxious to learn.

MICHIGAN. State Government.—The following were the State officers during the year: Governor, Josiah W. Begole, Greenbacker; Lieutenant-Governor, Moreau S. Crosby; Secretary of State, Harry A. Conant; Treasurer, Edward H. Butler; Auditor, William C. Steven; Attorney-General, Jacob J. Van Riper; Superintendent of Public Instruction, Herschel G. Gass; Adjutant-General, John Robertson; Secretary of Board of Agriculture, Robert G. Baird; Commissioner of the State Land-Office, J. A. McCreary; Insurance Commissioner, Eugene Pringle; Railroad Commissioner, William P. Innes; Commissioner of Immigration, H. N. Walker; Commissioner of Labor, John W. McGrath; Swamp-Land Commissioner, W. D. Fuller; Commissioner of Mineral Statistics, Charles E. Wright; Judiciary, Supreme Court: Chief-Justice, Thomas M. Cooley; Associate Justices, James V. Campbell, Thomas R. Sherwood, and John W. Champlin.

Finances.—The Treasurer’s report for the fiscal year ending Sept. 30, 1884, shows:

<table>
<thead>
<tr>
<th>Balance on hand at beginning of year</th>
<th>$1,074,367 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receipts</td>
<td>$5,266,618 43</td>
</tr>
<tr>
<td>Total</td>
<td>$6,341,000 00</td>
</tr>
<tr>
<td>Payments</td>
<td>$5,266,618 43</td>
</tr>
<tr>
<td>Balance in treasury</td>
<td>$1,961,382 00</td>
</tr>
</tbody>
</table>

The Treasurer purchased during the year sixty-three of the war bounty loan bonds of $1,000 each. These have been canceled, leaving the total indebtedness:

- Past-due part-paid five-million-loan bonds, $1,000, adjustable at $575.37 per $1,000 (not bearing interest).

- War-bounty-loan bonds, 7 per cent, due in 1890, $24,000 00

The trust-fund debt, composed of balances upon which the State as trustee pays interest for educational purposes, now is:

- Agricultural-College fund $278,972 40
- Normal-School fund $1,354 81
- Primary-School fund (7 per cent) $3,134,010 00
- Primary-School fund (5 per cent) $299,313 87
- University fund $1,494,198 47
- Agregate balance of trust funds $4,818,081 00

There are now forty banking associations under the general laws of the State. Seven were organized during the year; one discontinued business, and one is in the hands of a receiver.

The specific taxes charged on railroads in 1883 amounted to $655,488.49; received from life-insurance companies, $29,638.56; fire-insurance companies, $294,080.99; charged on copper-mining companies, $31,943.87 on 31,297 tons; iron-mining companies, $25,517.38 on 1,511,558 tons; coal-mining companies, $404.13 on 161,544 tons; amount distributed from primary-school interest fund to counties for $334,345 children, $763,973.38; assessed value of property, $810,000,000, as equalized by the State Board of Equalization in 1881; State taxes thereon, apportioned to the counties, Sept. 5, 1883, $1,474,672.26; liquor-tax receipts during 1882, $786,972.88; malt, $131,670.09.

State Lands.—The whole number of acres of land held by the State, Sept. 30, 1883, was 1,063,111,21; number of acres forfeited to the State during the year, 1,085,568; total, 1,054,806; number of acres disposed of during the year, 214,185,538; number of acres held by the State, Sept. 30, 1884, 840,620,853. These are classified as follows:

- Agricultural-College lands 123,972 20
- Asylum land 300 00
- Asylum land 1,000 00
- Detroit and Milwaukee Railroad land 4,982 93
- Primary-School land 2,171 07
- Saline land 10,000 00
- Swamp-land 556,341 93
- University land 100 00

Total 940,620,853

The sales during the year amounted to 214,185,538 acres, for $189,835.05. The receipts of the State Land-Office from sales, interest, etc., were $359,387.04.

State Institutions.—These include the University, Agricultural Colleges, Normal School, State Public School at Coldwater, and Industrial School for Girls at Adrian (both for the reclamation of homeless and wayward girls), the Insane Asylums at Kalamazoo and Pontiac (both overcrowded), the uncompleted Insane Asylum at Traverse City, the Asylum for Insane Criminals (nearly completed), the Ionia House of Correction, the State Prison, the Institution for the Education of the Deaf and Dumb, the School for the Blind, and the State Reform School. The Governor recommends an amendment of the law governing the House of Correction, and says, “This prison is filled far beyond its capacity with convicts, nearly half of whom are sentenced by justice of the peace from different parts of the State, mostly for drunkenness.”

State Census.—A State census was taken in June. In the following table is presented the total population of Michigan in the years 1884 and 1886. The table is complete except for the county of Isle Royal, from which no census returns for 1884 were received. The popula-
Isle Royal in 1880 was 55. The totals are the results of the first count as by the schedules returned by the enumera tors, and are subject to slight corrections:

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>1884</th>
<th>1889</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICHIGAN.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**MICRO-ORGANISMS IN DISEASE.**

Salt—The report of the State Salt Inspector shows that the salt product of Michigan for the year ending Nov. 60, 1894, was 8,262,175 barrels—the largest in the history of salt manufacture in the State.

**Political.**—There were three tickets in the field in 1884—Republican, Fusion (Democratic and Greenback), and Prohibition. For Presidential Electors, the Fusion extended to twelve of the number; for the thirteenth place, the Democrats and Greenbackers had separate candidates. The following were the State tickets:

<table>
<thead>
<tr>
<th>OFFICE</th>
<th>Republican</th>
<th>Fusion</th>
<th>Prohibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governor</td>
<td>E. A. Alger</td>
<td>J. W. Pogue</td>
<td>D. Preston</td>
</tr>
<tr>
<td>Lt. Gov.</td>
<td>A. Butts</td>
<td>M. H. Maynard</td>
<td>A. Sherwood</td>
</tr>
<tr>
<td>Secretary</td>
<td>H. A. Conant</td>
<td>W. H. Ball</td>
<td>Z. Chase</td>
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<td>Treasurer</td>
<td>E. H. Butler</td>
<td>James Blair</td>
<td>A. H. Cheney</td>
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<td>Auditor</td>
<td>W. C. Stevens</td>
<td>W. J. Sanford</td>
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<td>Land Comm</td>
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<td>Sup’t of Pub.</td>
<td>H. H. Gass</td>
<td>*D. Perkes</td>
<td>C. Gardner</td>
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<td>Board of Ed</td>
<td>J. M. Ballou</td>
<td>*C. Vandevert</td>
<td>I. W. McKeever</td>
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* Greenback. † Democrat.

At the election on November 4, the Republican ticket was successful. The following was the vote for Presidential Electors: Republican, 192,669; Fusion, 189,861; Prohibition, 18,403; imperfect and scattering, 5,790. The separate Democratic votes were 149,868, and the separate Greenbackers, 41,490. The vote for Governor was as follows: Republican, 190,840; Fusion, 186,887; Prohibition, 22,207. Four Republican (Third, Fourth, Ninth, and Eleventh Districts) and seven Democratic Congressmen were elected. The Legislature of 1885 consists of 18 Republicans and 14 Fusionists in the Senate, and 52 Republicans and 48 Fusionists in the House.

The constitutional amendment relative to salaries of judges in the Upper Peninsula was ratified by a vote of 35,343 to 28,642; that relative to compensation of members of the Legislature was rejected by a vote of 52,707 to 31,693.

**MICRO-ORGANISMS IN DISEASE.**

This is no new subject, but it has assumed greater importance during the past year. The study of micro-organisms has long been regarded, even by the medical profession, as barren of practical results, until the recent discoveries of the tubercle and cholera bacillus opened their eyes to its possibilities. Koch, the foremost authority on the subject, says: "In no instance has it ever been proved that an infectious disease is due to a micro-organism, unless the micro-organism is present in the blood or tissues of the animal affected by the disease. After death, the micro-organism must be capable of cultivation in some suitable medium outside the body," he adds, and "and after being cultivated for several generations, must cause the same disease when introduced into the body of a healthy animal. Finally, in the body of this last animal, the same parasites should be found as in the former case."
MICRO-ORGANISMS IN DISEASE.

Without entering into the technical details of the subject, it may be said that no microscopic work requires such extreme care as the preparation and recognition of these minute organisms. When removed from the body they are transferred to certain "culture fluids" (generally meat-broth or gelatine), where they are kept alive and multiply at a temperature of from 86°-106° Fahr. Many precautions are taken to avoid contamination from contact with the air; the ordinary one being to keep the fluids in glass tubes, the ends of which are plugged with fine cotton or wool.

In order to detect such minute bodies in the midst of tissues, advantage is taken of their property of staining readily with various aniline dyes, which are not so easily held by the surrounding tissues. It is a common mistake to suppose that micro-organisms are easily seen; on the contrary, their detection requires a practiced eye and the use of high powers.

Micrococci.—These are small points or specks, which are seen in the midst of decomposing organic matter; in fact, their presence is indicative of decay, whether they are found within the dead or living body.

There are a large number of different species, which have received certain distinctive names, such as the "septic" micrococci, or those that are associated with blood-poisoning; the "zymogenic," which give rise to certain chemical changes (as in the decomposition of urine), the "pathogenic," which are regarded as the cause of diseases. The term "chromogenic" is applied to various colored forms. Micrococci are found in large numbers in abscesses—as the inflammation increases they are seen to invade the neighboring tissues; but, whether they stand in the relation of cause or effect to the inflammatory process, is not clear. They are found in the bowel in diarrhea and typhoid fever, and in the air-cells of the lung in pneumonia.

As so-called "specific" forms, may be mentioned the micrococci of small-pox, which are found in the eruptive vesicles, erysipelas, diphtheria, pneumonia, inflammation of the lining membrane of the heart, and scarlet fever. Each of these forms has certain peculiarities that distinguish it from the others, and is always found in certain locations, as in the sputum of pneumonia, the membrane of diphtheria, etc. With few exceptions, they refer to the text mentioned at the beginning of this article, and cause the same or a similar effect when introduced into the lower animals.

Bacteria.—These are small bodies of nearly uniform length; several times their breadth, they have the power of locomotion. They are putrefying fluids, and have also receptors of blood, that is to say, they can be carried into the system and give rise to the symptoms of blood-poisoning.

Bacilli.—These derive their name from the English word bacillus, a staff, because of their resemblance to small rods. They resemble bacteria; they tend to multiply more rapidly. Like the former bodies they may occur in chains. Some bacilli have a peculiar tail, or flagellum, which is the organ of locomotion.

A peculiar property of these organisms is that although they are killed by free boiling, or by immersion in certain solvents such as carbolic acid, thymol, and corrosive sublimate, their spores are far more resistant. This fact becomes important in consider the prevention of disease by destroying its cause. Not to mention the bacilli of septicaemia.

This section of small intestine of a mouse with septicaemia shows the presence of bacilli. It is found by Klebs and Tommisi-Crudeli blood of malarious patients, and the bacillum leprous, special mention should be made of the bacilli of anthrax, or malignant pustule, covered by deep ulceration. These are looked upon as the division of which multiply by division, throwing off a part that develop into bacilli. These parasites can be cultivated outside the body, and intr
other animals. Animals thus inoculated usually die within forty-eight hours, and on

phthisis can be regarded as established beyond a doubt (see TUBERCLE BACILLUS, in "Annual Cyclopaedia" for 1888).

**Comma-Bacillus.**—Under this name is understood the micro-organism of cholera, the latest addition to the parasitic forms found in disease. As described by Koch, the cholera-bacillus is a small, curved body, bearing a striking resemblance to the punctation-mark from which it derives its name. Its peculiar shape, as well as the conditions under which it is found, readily distinguishes it from all other parasitic organisms. It is smaller, shorter, and thicker than the tubercle-bacillus (for an account of its discovery, etc., see CHOLERA, page 148). These bodies are found in great numbers in the dejections and intestinal canal of cholera-patients. The method of examining them, as described by the discoverer, is similar to that which is used in the case of the tubercle-bacillus. A drop of mucus from the intestines or choleric stools is spread out on an object-glass, the glass drawn several times through the flame of a spirit-lamp, or Bunsen's burner, and a watery solution of fuchsin is added. After a few seconds, the stained specimen is examined with a high power of the microscope (one twelfth of an inch, oil system, with Abbé's condenser), when the parasites are readily seen. The bacilli may be cultivated by placing a drop of the same mucus in food-gelatine, which has a weak alkaline reaction. The liquid gelatine is then poured upon a glass plate, beneath which is some pounded ice, and the gelatine soon freezes; the plate is then put under a glass receiver, where it is kept moist until the bacteria develop. Milk also is a good culture-fluid. They flourish best at a temperature between 86° and 104° Fahr.; they cease to grow below 67° F. If exposed to a frost, they are temporarily disabled, but can be revived even after an hour's interval. Under the microscope the bacilli present an animated picture, moving in all directions across the field, "like swarms of dancing midges," as Koch expresses it.

The cholera-germs cease to grow when air is removed, or after they have been dried for about three hours. They grow, but with difficulty, in fluids having an acid reaction. Certain substances kill the bacilli, such as strong solutions of iodine, sulphate of iron, or copper (2-per-cent. solution), carbolic acid, 1 to 400; oil of peppermint, 1 to 2,000; sulphate
of copper, 1 to 2,600; quinine, 1 to 500; corrosive sublimate, 1 to 100,000. It might be inferred that nothing would be easier than to kill the parasites within the human intestine by administering such drugs as are known to exercise a germicidal action; but practically this is impossible, since the solutions would be necessarily so strong that they would be fatal to the patient. The non-professional reader can form little idea of the interest that has been awakened by the discovery of the comma bacillus. It now forms the chief subject of study in the leading European laboratories, and new developments with regard to it are expected daily.

Vibrios.—These are long, wavy rods, and are found principally in putrefying fluids.

Spirilla.—These are minute spiral bodies, which are found especially in the blood of patients suffering from relapsing fever. They are observed during the paroxysms of fever, but disappear during the non-febrile stages.

Fung.—The most important of these is the "yeast-fungus," or "etidium albicans," found in the "thrush" of infants.

The question will occur to the reader, "What is the origin of these micro-organisms, and how do they get into the body?" Doubtless most of them come from the outer world, and are absorbed through the skin, by the alimentary tract, and by the respiratory organs. Having reached a favorable soil within the body, they settle there and multiply. Recent careful experiments have demonstrated the absence of micro-organisms in the healthy blood and tissues. At the same time it is well known that many of these bodies exist within the human intestine, so that Klein suggests that in certain conditions of the body they may be able to migrate into distant organs. "It can not be maintained," he says, "that in any focus of disintegration micro-organisms make their appearance, they are derived from those normally present; we must, on the contrary, believe that putrefactive organisms can be imported into parts connected with the outer world from distant localities, in which disorganization of tissues has taken place." As regards "specific" organisms, or those that may be positively asserted to be the cause of certain diseases, we can only mention those of anthrax, tuberculosis, and erysipelas (also of swine-plague), as satisfying the tests previously mentioned. The arguments in favor of their specific nature are: An animal suffering from any of these diseases is always found to contain the same kind of organisms. These organisms, when artificially cultivated and introduced into other animals, produce the same disease. The period between the time of introduction of the organism into the body, and the appearance of definite symptoms, corresponds closely to the known period of incubation of the disease. This period varies from a few hours to two weeks. Moreover, if only a few of these bodies are introduced, they go on multiplying to an indefinite extent.

In reply to the query as to whether the micro-organisms themselves are the essential virus of an infectious disease, or in some way generate this virus, two theories are suggested. Either certain chemical changes may be brought about in the tissues by the presence of these bodies, just as in alcoholic fermentation; or the parasites themselves may furnish a poison, which sets up disease. A great deal has been written about antiseptics, and several substances enjoy high favor because of their supposed destructive power over disease germs. In the language of experimental pathology, an antiseptic is "a substance inimical to the life of the micro-organism." According to Klein, loose statements have been made as to the germicidal power of many drugs. "In order to test the value of an antiseptic," he says, "we must first put the micro-organisms into it, and then take them out and place them in a nourishing medium, and see if they will grow." When this method is adopted, it will be found that some forms, and especially their spores, are not destroyed by very strong solutions; moreover, some varieties of bacteria are...
In the dissecting microscope of C. Vérick, of Paris, an identical arrangement is adopted for the regular supply of lenses. For very low powers, however, the "engraver's glass," a doublet of great size mounted in hard rubber, is preferable. It has long been used by a few microscopists, for such work in the selection, study, manipulation, or dissection of objects as can be carried on under a very low amplifying power; but the merits of its broad field, clear definition, and ease to the eyes, are only now becoming generally realized. It requires a large, heavy stand, like the "lens-holder," Fig. 8, which was not easily available hitherto, but is now made for the purpose. For higher powers, as from one to one fourth inch, the Coddington is still the best of cheap and non-achromatic magnifiers, and is supplied on dissecting or, as better named on the Continent, preparing microscopes. The small non-achromatic doublets and triplets are very important, and planned with great care, are now wholly superseded in their field by achromatic combinations.

A few simple microscopes are arranged to use medium and low-power achromatic objectives from the compound microscope, which, notwithstanding the excellence of their corrections, and the advantage of being always at hand, are only tolerably convenient for the purpose.

The "globe lens" of Gundlach is an achromatic Coddington, being a sphere of crown-glass, balsam-cemented into the center of a hollow sphere of flint-glass, reduced to a cylindrical form, as in the plain Coddington, by cutting away the unused peripheral portion. Being achromatic, the blackened diaphragm groove is not required. This arrangement secures, in addition to the well-known advantages of the Coddington, a clear and brilliant definition at the center of the rather limited field.

By other makers solid three-lens achromatic magnifiers are produced, under the names of "splanatic loupes," "plasteric lenses," or "achromatic triplets." These were early brought into service in America by Tolles and Zentmayer; the most common form, perhaps, consisting of a thick lens of crown-glass like a shortened Coddington, achromatized by a thin concavo-convex meniscus of flint-glass at each end. These triplets, usually mounted as shown in Fig. 2, give an exquisite definition, a broad field, and are more convenient for the purpose than the Coddington, especially in the dissecting microscope.

* The ordinary watch-maker's glass, if used without a stand, and supported by catching its focusing tube in the recess of the eye, becomes tiresome and disagreeable in prolonged use.

** The ordinary watch-maker's glass, if used without a stand, and supported by catching its focusing tube in the recess of the eye, becomes tiresome and disagreeable in prolonged use. The form shown in Fig. 1, however, which was introduced in 1880 by the Sansen & Lamb Optical Co., and which is commercially supported by a steel spring placed behind the observer's head, may be worn with comfort, and seems to be the most practical magnifier which, for its focusing, depends upon the steadiness of the head. It can readily be raised out of the way, and rested upon the forehead during occasional use of the eye for ordinary vision; and when again required it can be instantaneously restored to position over the eye by a touch of the hand. It is likely to prove more available as a dissecting microscope than the magnifiers heretofore mounted in spectacle-frames for similar purposes.
and well-lighted field, and a long working focus; and they may be considered a necessity rather than a luxury, where fine work is to be done, and for any use when extreme economy is not imperative.

The Brücke magnifier, a Galilean microscope, consisting of a small two-system achro-

![Achromatic Triplet, Mounted](image)

matic objective, with a concave eye-lens above acting as an ocular, has long been used on the Continent, but has only lately received deserved recognition in America. Its long working focus, good definition, considerable power, small size, and moderate cost, commend it for the preparing microscope, notwithstanding its small field and rather deficient illumination. Some simple microscopes are supplied, as an extra, with a compound body and ordinary ocular for high-power dissections, or for occasional examination of objects. Few preparing microscopes are large and firm enough to employ such an arrangement to real advantage; preparing microscope, and capable of by draw-tube adjustment, a range of of from 12 to 150 diameters, with a wide focus varying inversely from 14 to 1 inch arrangement is somewhat equivalent the Brücke magnifier, giving similar working; and width of field with the same power, has the advantage of supplying, by mean-ing of its draw-tube, such a range of as, with the other magnifier, could only be obtained by changing or dividing the object.

As a lens-holder, to support simple like the pocket arrangement shown in for instance, while objects are being dis or arranged, some recent books recom-mend bent wire passed through a cork, then turn slides up and down upon a larger wire stuck into a block or spool up-table; and it must be admitted that home-made affair is about as efficient, not as pleasing to the taste, as the stands sold everywhere for the same purpose. One of the simplest of the latter is the the stand, originally made by Smith & Beale lately elaborated into the "Hampden" scope, by the present firm at the sign of a distinguished amateur microscope R. M. S.," 1882, p. 256). Many various made, especially by the French and G optingicians, having a rack-adjustment for height of the lenses. To gain a greater of applicability, the has devised and use stand shown in Fig. 3 (A. S. M.," 1884, p. 16 based upon the mod by engravers, but, until it is sufficiently firm an tageable for either high powers, used either on stand, or at a suffi-cient force for the exam- of mounted herbarium mes, or of hand-work upon large papers or. It consists of a rect frame, sliding upon t lar of a bull's-eye st gauge, with a fine-edge screw acting against the pillar above, an hinged extension below, giving a total length of seven to nine inches. There is of semicircular jaws to be inserted into the support of a watch-maker's engraver's glass. This stand is equally used for high-power Coddingtons or achromatic triplets, and its range is raised to 1000 or more, by adapting to it the single magnifier, or the Bausch & Lomb compound dissecting arrangement. The axis of may be set with equal steadiness at any from vertical to horizontal, the instrument becomes sometimes an efficient aquatic microscope.

Of complete stands for the simple
the Continental type seems to be the compact stand, with small square stage for such stands, however large, hand-rests add greatly to the steadiness as well as the comfort of the hands, and they are far more satisfactory when large, and supported independently, than when attached to the stage. The form described by the writer (Behren, Am. ed., p. 109) is shown at one fourth natural size, open for use, in Fig. 6, and closed for portability in Fig. 7. It can be easily made for his own use, from mahogany or other hard wood, by any amateur having mechanical skill. The microscope (like Fig. 4 or Fig. 5, for instance) stands in the center, held in place by two wooden buttons, while its stage is somewhat above and not far from the upper ends of the inclined rests. When portability is not required, the rest is arranged permanently as in Fig. 7, being fastened together with glue and brads, instead of hinges and hooks.

The Stand—Only lately has there been an American model of stand. Formerly it was sufficient to recognize the Continental model, small, compact, and portable, but of very limited capabilities for the reception of accessories—most of which accessories, by-the-way, the Continental microscopists wholly abjured; and the English model, large, elaborate, and cumbersome, with a sumptuous outfit of ingenious accessories. The English model was chiefly in favor in America, whether imported from abroad or imitated by our own manufacturers. Within a few years past, however, a really new model has been developed, chiefly through the influence of American innovations,

\*edit for originating this style seems to belong to Mr. H. J. Stett, "The Microscope," 1855.

[Image: Compact Dissecting Microscope, with Hand- rests and Erecting Compound Body.]

[Image: Dissecting Microscope.]

Fig. 5.—Dissecting Microscope.
which may be fairly considered as representative of American judgment and ingenuity. These stands are mostly made of medium size, the peculiarities of their mechanism enabling them thus to combine nearly all the simplicity and portability of the Continental stands, with nearly all the efficiency and scope of adaptations of the more ambitious English instruments. The "Histological" stand of Mr. William H. Bulloch, of Chicago (see Fig. 8), may serve as an example of this type of stand in a very simple and inexpensive form, yet efficient for a great variety of scientific work. On the other hand, the "Universal" stand of the Bausch & Lomb Optical Co., may be specified as a type of somewhat larger and more elaborate stands, able to use all accessories, and serviceable for all general purposes (excluding specialities having extraordinary requirements) of microscopical research. (The general arrangement of this stand is shown in the cut of one, Fig. 30, bearing an electric illuminator in place of the mirror; while its details of construction are nearly like the corresponding portions in the "arc" stand, Fig. 12.) Somewhat equivalent to these stands are numerous instruments by nearly all American makers. A critical study of the points which such stands have in common will reveal the principal improvements in stands during the last half-dozen years.

The body is broad enough to hold oculars giving a liberal width of field with the lower powers; 1 25-inch being the standard diameter of the American Society of Microscopists, and 1 35 the largest standard of the Royal Microscopical Society. Many of these stands are made at or near one of these sizes; and it is to be greatly desired and reasonably hoped that complete correspondence will be shortly accomplished, so that a single adapter will make the oculars of all interchangeable. The nosepiece at the bottom screws out, leaving the "Butterfield" broad-gauge screw (one and one fourth inch), for those uses for which the "Society" screw is unsatisfactory. The body is also short, about five or six inches, for comfort when using it in a vertical position on the laboratory table; this peculiarity fitting it also to adopt polariscope analyzer, a set of spectroscope prisms, or an objective of too low power to be focused in the ordinary way.

The limb connecting the body with the pillar is of the Jackson model, supporting the body steadily by means of the rack attached to its posterior surface. Ten years ago this model was already adopted by all the prominent American makers, except one who made only stands of the Continental type, though the Ross style, with a transverse bar supporting the body only at its lower end, was still extensively, if not most commonly, preferred in England. This style, though confessedly inferior in other respects to the Jackson, was long retained from the great superiority of its fine adjustment to that then used with the rival model; but the faulty adjustment having been superseded, the Ross bar has at last been abandoned even by the distinguished firm which gave it a name, and whose fine workmanship and large influence greatly favored its use; and it may, therefore, now be considered obsolete except for special purposes.

The coarse adjustment is by a rack whose

---

* Ten inches is still called the standard length of body, though rather vaguely or approximately, since no one has undertaken to say where the measurements should begin and end. Perhaps they are most commonly made from the top of the draw-tube to the bottom of the objective. As the focal plane from which the "optical tube-length," as it is well termed by Prof. Able, should be measured, is always about the front lens of the objective, and often above the back lens ("J. E. B.," 1889, p. 61); "Proc. A. M. M.," 1884, p. 141, and as large stands do not ordinarily give ten inches from the plane to the corresponding plane of the ocular, it is evident that the powers resulting from various combinations of objectives and oculars must be, as they practically are, less than their theoretical value, computed on the assumption of a one-inch tube, unless either objectives or oculars be both specially named, so as to make good the practical deficiency of the case; as the positive ocular figured, but rarely used in the microscope, has its focal plane wholly below it, and far from any convenient location of the top of the draw-tube: while the negative ocular, far more commonly used, has its plane at the level of the diaphragm before its lens, and can be better placed and conveniently arranged, as it already is by some makers, to slip into the tube just to that plane (see "Nomenclature of Oculars," W. J. T., p. 612).
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is located high up upon the limb, to
larged range for low powers. The
went is upon plane surfaces back of the
the rack of the round body through
by cylinder having been abandoned in
work on account of its imperfect ac-
Substitutes for the rack (such as a chain
sent, a coarse screw geared with toothed
though not, in skillful hands, less precise than
the rack itself.

The fine adjustment is by means of a screw
at the back of the limb, moving the whole
body, usually by means of an intervening lever.
This arrangement is now practically universal,
having replaced the screw with short lever in
front of the body acting upon a movable nose-
piece, which was the prevalent form in Ameri-
can and English stands only a few years ago.
In Mr. Zentmayer’s model, introduced at the
Centennial Exhibition, the motion is upon
plane surfaces just
behind those of the coarse
adjustment; in Mr. Bulloch’s best model the
pinion-box of the coarse adjustment itself is
moved and with it the whole body; in the
Bausch & Lomb stands a frictionless motion,
not subject to wear, and incapable of lost mo-
tion, is obtained by supporting the body by
two parallel horizontal steel springs a, Fig.
9, while it is carried downward against the
reaction of the springs by means of the screw
and milled head b acting upon the pinion-box f
by means of the inflexible bar e; while Mr.
E. Gundlach adopts the
differential screw as a
means of securing a slow
or rapid motion at will.
In a recent ingenious
adjustment by Swift &
Son, of London, the fo-
cussing screw is placed at
the side of the limb, and
raises the objective by a
wedge movement, as
shown in Fig. 10; the
arrangement being giv-
en any required degree of
delicacy by varying the
pitch of the wedge.

The stage is round,
thin, and concentric to
the optical axis of the
instrument. This style,
introduced mainly through
the influence of the late
R. B. Tolles, of Boston,
is now generally recog-
nized and imitated as a
material improvement
on other forms. A plain
round plate, used in
Fig. 8, becomes the basis
for a movable upper plate, with or without a slid-

Fig. 8.—Histological Stand; of the American Type.

ing object-carrier, forming an excellent revolv-
ing stage as shown (with object-carrier) lying at
foot of same stand, and (with plain spring clip)
in situ on the “aro” stand, or for an elaborate
mechanical stage with pinions both on one axis,
and with its mechanism wholly within the limits
of the circle so as to admit complete rotation, as
devised by Mr. Tolles, and adopted with more
or less changes by Mr. Bulloch, in his “Con-

* This adjustment has since been adopted by Mr. Henry
Cowch, of London. In the German stands of Göbel &
Krafft somewhat similar motion is attained by means of
hinged, parallel, horizontal bars.
"Microscopy.

gress" stand, by Ross & Co., in the Wenham "Radial" stand (see Fig. 11), ("A. M. M. J.," 1888, p. 146), by Watson & Sons, in their inclining stand ("J. R. M. S.," 1881, pp. 800, 916), and by other makers. Lately a sliding fork, holding the object-slide in place, has been proposed as a substitute for the sliding object-carrier; thus thinning the stage by dispensing with one plate, and allowing the object-slide to lie upon the bed-plate of the stage. The stages are sometimes made reversible, to carry the slide below for extreme obliquity of illumination, or are furnished with additional spring clips below for the same purpose, the rotating clips in Wale’s "working" stand being also reversible and capable of holding a slide in any azimuth either above or below the stage. An

![Image of microscope stages and adjustments]

The mirror is supported upon a radial swinging tail-piece hinged in the plane of the object on the stage. It therefore swings normally to the object on the stage, which is the optical center of the instrument; and it may be placed with the greatest ease of precision at any angle from the axis, either low or above the stage, without altering the distance from the object, the extent of which being indicated, except in the cheapest forms of apparatus, upon a graduated circle. The distance of

![Image of round stage and mechanical adjustment]
the object is adjustable by sliding
ward or from it. For simple stands
sub-stage is wanting or comparative-
vertant, one tail-piece is used, as in
t for stands of higher grade a second
ly independently, as in Fig. 12, is es-
usefulness of the system; since the
often requires
ned in an axial
ile the mirror
So impor-
comparative, having
single bar, a
expressed to its utility
higher grade of
The swinging
anticipated in
by Mr. Thomas
sectoral arc in
1853, and by
- Nachet trav-
age in Paris in
Dr. Boyston-
circular arc in
1862, and by
's radial arm in
1871, and by
b's sectoral arc
in 1878 ("J.
1880, p. 1058),
successfully in-
by Messrs. Jo-
mayer and E.
at the United
ennial Exhibi-
s now adopted
all American
several of the
makers, a
Dr. Pelletan's
sont " micro-
r. H. P. Ay-
ings the tail
from the pillar
the stage, but
izontal bar pro-
on a rotating
ning, by turning
be set at any azimuth and swing
object in other directions as well
("J. R. M. S.," 1884, p. 110). In
er stands some of the advantages of
ing tail-piece may be secured, as pro-
Mr. James Mackenzie, by screwing
ug to the edge of the stage a similar
ide in a detachable form, carrying a
one or two inch condensing lens
. S.," 1861, p. 826),
t has three widely separate points
projecting plug of soft rubber being
o the bottom of each branch for
tact with the table, and a single pil-
and firm, arising to the center of the
oint back of the stage, and admitting
free swing of the mirror-bar, whether the
body be vertical or inclined.
None of the figures as drawn fully represent
the highest development of instruments of this
type and size; since the more complete stands
named are sometimes made, to advantage, with
graduated and indexed fine adjustment-wheel,
with centering adjustments
and graduated rotation to the
stage, and even with a small
mechanical stage of the Tolles
style, with lengthening mir-
or-bar, and with vertical
rack-movement and lateral
centering adjustments to sub-
stage.
Instead of the trunnion-joint
for inclination, at the junction
of pillar, tail-piece, stage, and
limb, an arc sliding between
two pillars or jaws was con-
trived by Mr. George Wale, of

Fig. 12.—Arc Stand; a Variety of the American Type.
the last few years have brought forth, a large proportion are either imitations or revivals of earlier and abandoned forms—the improvements made in their details, or the demands of the times, rendering serviceable now the models which were before rejected and forgotten.

The more or less real requirement of the times has led to the introduction, especially in Germany, of a class of trichina-microscopes, adapted for making a rapid search over a large field with a low power. The field to be examined is compressed between large, thick glass plates, which are so arranged as to be carried systematically beneath the lenses by a sliding or rotary motion—the whole device being either a portion of a special stand for the purpose, or else attachable to the stage of any stand. A very simple but serviceable "trichinoscope" is made in this country ("J. R. M. S.," 1890, p. 711; 1893, p. 268). Such arrangements are also useful when large quantities of vegetable or animal fibers, or hairs, commercial products, etc., are to be surveyed.

Under the demands of the practically new science of microepitography, a class of lithological, petrological, or mineralogical microscopes has been suddenly developed, characterized by the completeness of the stage and polarscope arrangements. The stage, often mechanical, has a graduated rotation, a centering adjustment,* and in some cases an attachment with graduated arcs, after Hartnack's model, for rotating the object vertically under the lenses for the sake of determining the separation of the optic axes of biaxial crystals, or for the measurement of angles by successively leveling, in the focus of the objective, the corresponding sides of the crystals. This rotation takes place in Mr. Bertrand's stand, in a glass-bottomed trough upon the stage, so that the measurements can be made in oil or other liquids as well as in air ("J. R. M. S.," 1893, p. 418). The fine adjustment is graduated and indexed for approximate measurements of thicknesses. The polarizing prism is large, mounted with centering adjustment and graduated rotation with spring-catch to indicate when the prisms are crossed, with fittings to carry above it a condensing lens of large aperture (another lens being screwed at the same time into the lower end of the draw-tube), and with a swinging movement by which it can be instantly turned into or out of the axis of vision. The analyzer has a graduated rotation, and is mounted over the ocular, or in a sliding box above the objective, or both. The ocular has a centering adjustment, a pair of cross-wires (illuminated from the side for use with a dark field) in the focus of the eye-lens, a graduated circle for gonioscopy, and an arrangement for placing a plate of calc-spar between the analyzer and the eye-lens, or in the focus of the latter, for stauroscopic measurements. In or near the nose-piece is a slit, or sliding box, or cranked arm, for introducing a Klein's quartz-plate into the field. No one stand, however, is known to include all the above-named features. Among those prominent in the introduction of such special stands may be mentioned Prof. Lassaulx and Rosenschuh, and Messrs. Puech, Nachet, Stidle (of the "Acme" stands), Balloch, Beck, Swift, and Zeiss (see "J. R. M. S.," 1882, p. 842).

The utility of the binocular microscope, which was strenuously denied by some not many years ago, can no longer be reasonably questioned. It is evidently most useful in general natural history, with low powers or moderate angles, and of less advantage, though not absolutely inapplicable, to investigations requiring only high powers or extreme angles. For small stands of the Continental type the Nachet form was first really successful, and is still preferred; while the Wenhorn form, which set the example of a direct transmission of light to the eye and a diverted transmission to the other, continues to be the standard binocular of English and American stands. One of its few serious disadvantages is the small size of prism hereofore admissible, and the accompanying limitation of the acting aperture of many objectives by the small opening possible in the prism-box of a nose-piece. This has been lately remedied by the contrivance of Edward Bausch, who abandoned the sliding prism-box altogether, and mounted a larger prism, a, in Fig. 13, on a swinging arm, b, inside of a nose-piece of sufficient capacity to allow it to be swung wholly out of the way, as shown by the dotted lines, leaving unobstructed the whole caliber of the "Society" screw, d. The prism-holder, e, is attached to a steel spindle, c, which is turned by a milled head outside. (This arrangement is shown in the cut of "Acme" stand, Fig. 12.) Of the many ingenious binoculars proposed.
the last few years, only two have come considerable use. The first of these, by W. Stephenson, of London, is a reinvention of a pair of reflecting prisms of the form ed by Prof. J. L. Riddell, of New Orleans, original inventor of the binocular microscope. These prisms, shown in Fig. 14, located close to the back lens of the objective, divide the pencil of light into two symmetrical halves, which are turned obliquely forward, the image being at the same time erected by a larger prism placed above at d. Being an erecting arrangement, and having the oculars inclined at the most convenient angle for vision when the stage is horizontal, this contrivance is well adapted, and it has proved satisfactory, for a dissecting or preparing microscope. A slight loss of definition in both fields, and the impossibility of using the same body as a monocular, has limited it to a narrower range of usefulness than that of the Wernard. On the other hand, Prof. Abbe's binocular, introduced in 1880, is a removable which is applicable to any stand. In beam of light is not laterally bisected, enters a pair of prisms, a, b (Fig. 15), a n of the whole pencil passing directly to one ocular, at B, while the other n is reflected from the surfaces between prisms a and b, and from the second sur of the prism b' to the other eye, at B'. Intensity of the axial and reflected pencils quai, the image in the direct tube being superior to the other, as in the Wernard. It is subject, however, to the disadv compared with that, of such slight loss initation as may be caused by the passing direct rays through the prisms b, a. The rience in size of the images, caused by the course of the reflected rays, is corrected corresponding difference in the constructi the oculars. The arrangement is not italy stereoscopic, and may be used for ke of the comfort of using both eyes at with the full capacity of both tubes, and similar images in both eyes. A stereoeffect, however, is produced at will by g over the oculars caps which obstruct her half of each tube, so that only the half of each pencil is utilized. The open ing at B, in the figure, is concentric to the optical axis, as for non-stereoscopic vision, while that at B' is shown with only the outer half in use, as for stereoscopic vision. A sliding adjustment for the distance between the two eyes is controlled by a milled head at D. This binocular is well adapted to the small Continental stands, being adjusted for a tube-length of 18-16 centimetres. With an adapter inserted in place of the lengthening draw-tube of the stand, it is equally applicable to short instruments of the American type. It is not made of a size well adapted to large instruments with long tubes, as it would then become heavy and clumsy by reason of the large prisms required. When the monocular stand is used, an eye-shade, so located as to prevent the formation of images in the open but unemployed eye, is of material advantage in lessening fatigue both of eye and brain. The clumsy devices formerly made for this purpose were soon abandoned. But lately practical and really useful substitutes have been devised by Dr. L. B. Hall, Mr. E. Pennock, and others. The last published form, devised by the writer and shown in Fig. 16 ("A. M. M. J." 1884, p. 85), is a screen of hard rubber or blackened metal about 14 inch in diameter, with an extension in the form of a band crossing in front of the nose and encircling the top of the tube just be low the ocular. Being attached to the body, this requires no new adjustment with each change of ocular. It is easily reversible, which often becomes desirable on account of the
(unity), and a resolving power limited to 96,400 lines to the inch. All powers above these are in excess of the possibilities of a dry lens. For obvious reasons, the numerical aperture increases slowly, in all cases, as the objective approaches 160°, the last few degrees of angular aperture being of small relative value. The following table gives a selection from Prof. Abbe’s elaborate computations of these data:

<table>
<thead>
<tr>
<th>Angle of aperture (°)</th>
<th>Numerical Aperture (n A)</th>
<th>1°</th>
<th>2°</th>
<th>3°</th>
<th>4°</th>
<th>5°</th>
<th>6°</th>
<th>7°</th>
<th>8°</th>
<th>9°</th>
<th>10°</th>
<th>11°</th>
<th>12°</th>
<th>13°</th>
<th>14°</th>
<th>15°</th>
<th>16°</th>
<th>17°</th>
<th>18°</th>
<th>19°</th>
<th>20°</th>
</tr>
</thead>
<tbody>
<tr>
<td>1° 56</td>
<td>0.058</td>
<td>2.10</td>
<td>3.59</td>
<td>7.75</td>
<td>16.06</td>
<td>29.12</td>
<td>51.44</td>
<td>81.70</td>
<td>121.96</td>
<td>182.22</td>
<td>262.48</td>
<td>362.74</td>
<td>482.99</td>
<td>623.24</td>
<td>783.49</td>
<td>963.74</td>
<td>1,154.00</td>
<td>1,364.26</td>
<td>1,644.51</td>
<td>1,984.77</td>
<td></td>
</tr>
<tr>
<td>2° 46</td>
<td>0.117</td>
<td>4.21</td>
<td>7.02</td>
<td>13.55</td>
<td>26.10</td>
<td>48.65</td>
<td>81.20</td>
<td>123.75</td>
<td>186.30</td>
<td>268.86</td>
<td>381.42</td>
<td>513.98</td>
<td>666.54</td>
<td>839.10</td>
<td>1,011.66</td>
<td>1,217.22</td>
<td>1,462.78</td>
<td>1,772.34</td>
<td>2,157.90</td>
<td>2,613.46</td>
<td></td>
</tr>
<tr>
<td>3° 38</td>
<td>0.209</td>
<td>8.42</td>
<td>14.14</td>
<td>28.28</td>
<td>56.56</td>
<td>103.12</td>
<td>170.68</td>
<td>265.24</td>
<td>428.80</td>
<td>682.36</td>
<td>1,035.92</td>
<td>1,509.48</td>
<td>2,083.04</td>
<td>2,756.60</td>
<td>3,430.16</td>
<td>4,103.72</td>
<td>4,877.28</td>
<td>5,750.84</td>
<td>6,624.40</td>
<td>7,677.96</td>
<td></td>
</tr>
<tr>
<td>4° 30</td>
<td>0.330</td>
<td>16.84</td>
<td>29.45</td>
<td>61.70</td>
<td>123.40</td>
<td>246.80</td>
<td>400.20</td>
<td>674.60</td>
<td>1,088.00</td>
<td>1,741.60</td>
<td>2,615.20</td>
<td>3,788.80</td>
<td>5,062.40</td>
<td>6,436.00</td>
<td>8,009.60</td>
<td>9,743.20</td>
<td>11,776.80</td>
<td>13,910.40</td>
<td>16,344.00</td>
<td>18,977.60</td>
<td></td>
</tr>
</tbody>
</table>

The question as to the choice of moderate or extreme apertures for objectives is still open and somewhat disputed. Dr. Carpenter ("The Mic.," p. 209; "Encl. Brit.," 9th ed., 1883, xi, p. 269; also, his address at the Montreal meeting of the A. A. A. S. in 1882, "A. M. M. J.," 1883, p. 161; "Mic. News," 1883, p. 59) and a large following of conservative judges still hold to the former view—not doubting the value of large aperture, but believing that it should accompany higher powers, and that to a 1-inch, for instance, should not be assigned the aperture and work of a 4th, nor to a 1/4th that of a 4th; and this view is corroborated by the mathematical computations of the relation of aperture to power by Prof. Abbe ("J. R. M. S.," 1883, p. 790). On the other hand, a large number of experienced persons prefer large apertures even for biological work; some claiming that the highest attainable angles are the best for all uses and powers. The following table shows in comparison the apertures that have been suggested by the above writers, and those now made by the principal American makers, the angular apertures being given except where n.a. is stated. The figures in the Abbe column apply only approximately to the adopted nomenclature by inches; and they are given, not as a working standard, but as a limit required by theory, and which will be more or less exceeded in practice. The last three columns represent the writer’s selection of three ideal series of objectives, of low, medium, and high degrees of completeness and efficiency. There are few persons whose microscopical work could not be well done by the last-named series; though a few specialists, like the Rev. W. H. Dallinger, in his unique researches among the minutest forms of life, employ a great number of lenses which would be practically duplicates in other hands.

### APERTURES.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Recommended by Prof. Abbe.</th>
<th>Preferred by Microscopists.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1° 56</td>
<td>1.56</td>
<td>1.56</td>
</tr>
<tr>
<td>2° 46</td>
<td>2.46</td>
<td>2.46</td>
</tr>
<tr>
<td>3° 38</td>
<td>3.38</td>
<td>3.38</td>
</tr>
<tr>
<td>4° 30</td>
<td>4.30</td>
<td>4.30</td>
</tr>
</tbody>
</table>

### IDEAL SERIES, SELECTED BY THE WRITERS.

<table>
<thead>
<tr>
<th>Objective</th>
<th>Abbe</th>
<th>Practicable</th>
<th>Preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>1° 56</td>
<td>1.56</td>
<td>1.56</td>
<td>1.56</td>
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<tr>
<td>2° 46</td>
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<td>2.46</td>
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</tr>
<tr>
<td>3° 38</td>
<td>3.38</td>
<td>3.38</td>
<td>3.38</td>
</tr>
<tr>
<td>4° 30</td>
<td>4.30</td>
<td>4.30</td>
<td>4.30</td>
</tr>
</tbody>
</table>

Variable objectives of low power, mostly 3 or 4 to 5 inch, changing power gradually by the separation of the lenses by screw-collars, movement, were early made by Mr. Zentmayer, and are now no longer uncommon. Those of Zeiss are upon a formula computed by Prof. Abbe.

Most makers correct their non-adjustable objectives for a certain fixed thickness of cover and length of tube. In the Zeiss non-adjustable lenses the thickness of best correction is
marked on the setting, and in his adjustable
see the collar-graduation indicates in hun-
redths of a millimetre the corresponding thick-
ness of cover.

The comparatively short working-focus of a
high-angled objective is inseparable from the
combination selected, but the accompanying
cart of penetration may be partly relieved by
empirically cutting down its aperture by in-
serting diaphragms back of the lenses. An
iris diaphragm in a Society screw adapter is
crowed in above the objective for this pur-
pose. It was proposed by Dr. Rosyton Pigott
1 1869, and again by Mr. W. H. Bulloch in
878, and finally introduced under the name
f "aperture-shutter" by Mr. G. E. Davis in

The Corrects.—It is one of the curiosities of the
microscope that the "negatives" oracular of Huy-
en's, which consists of non-achromatic lenses,
and was early borrowed from the telescope for
be microscope (on a mistaken theory of its
davantages), has thus far defied both com-
petition and improvement, being conceded to
be still the most available oracular for general
work. Its construction presents no difficulties,
but its simple formula can be carried out with rea-
sonable ease; and there is, therefore, no need
of sensible inequality in its performance, ex-
cept that smallness of the tube chosen may
arrow its field of view. In practice, how-
ever, marked inequalities are found, due either
to careless workmanship, or to a disregard of
the well-known principles of construction.
Some makers even use the same supply of
field-lenses for oraculars of various powers.
Huygenian oraculars are commonly made with
powers of from two inches (often marked A)
up 3 or 4 inches (D or E), the one inch being the
power said to be employed by prominent mak-
ers in correcting and adjusting objectives.

Of more or less achromatic oracular, first in-
troduced by Kellner, various modifications are
now supplied by nearly all makers under the
names of orthoscopic, aplanatic, or periscopic.
These are mostly positive, the achromatic eye-
lens having its lower focal plane in or beneath
the tube, double-convex field-lenses. The field-
lenses also is sometimes achromatic; and by Mr.
Tolles it was made, for micrometric use, in two
horizontal sections, balsam-cemented together,
with a micrometer-scale ruled, and filled in, on
one of the adjacent surfaces where it was out
of danger of dust or wear. All these give a
broad, white field of view, flat and well defined
at the edge, and are, therefore, well calculated
for the display of large sections or of polarizing
effects; but none of them are fully equal, in
defining power and general working character,
the Huygenian form. They are common-
ly made of powers of from 1 ½ inch to 2 inch.
For high powers, from 1 ½ to 2 or even 3 inch,
be solid eye-pieces introduced by Tolles in
885, and soon after adopted by Hartmann, of
Paris, are now made by nearly all opticians,
and are in general use. These are now made
achromatic by Steinheil, of Munich, a double-
convex lens of crown-glass being cemented in
between two meniscus lenses of flint, as
shown in Fig. 19, and grooves being cut around
the circumference, and blackened to act as dia-
phragms, as in the Coddington. The positive
Kamden oracular, formerly much used for micrometry, has been
nearly superseded for that pur-
pose by the orthoscopic and the
solid.

In the combining of oracular
with objectives, it is still unde-
cided whether it is preferable to
secure a sufficient variety of
powers by means of a large num-
ber of objectives, or by the high
and low eye-pieces of a few. Dr. Carpenter
prefers the two-inch, which is certainly the
least fatiguing to the writer and to many oth-
ers, and would use even the one-inch only for
exceptional purposes, believing that the habitu-
al use of strong oracular is more trying to the
eyes than that of high objectives. Prof. Abbe
selects ½ inch (×15) as the highest really use-
ful oracular. On the other hand, some excellent
workers prefer oraculars from one inch (the low-
est furnished with many Continental and some
American stands) upward, using objectives of
high aperture to bear such amplification. With
the five objectives specified in the last column
of the above table, and a full set of oraculars, all
powers may be easily obtained, from a very
low to a very high limit, and lines or points of
any degree of fineness known to be visible can
be well seen. Some advocates of the forcing
policy limit the list of desirable objectives to
three; and it has even been claimed that with
a good pair, the "we can see about everything
that can be shown by any objective."

In respect to size and nomenclature of ocu-
lar, important progress has been made through
the efforts of the American Society of Micro-
scopists. At the Detroit meeting in August,
1880, a committee upon this subject was ap-
pointed, consisting of the president and ex-
president of the society, to which the succeed-
ing presidents have been successively added.
This committee was instructed to report a
proposal for a standard size of oracular, in or-
der that these might be interchange with fa-
cility like objectives; and also to recommend
a system of nomenclature by which oraculars,
of whatever make, might be correspondingly
named and rationally compared. The commit-
tee reported, at the Chicago meeting in 1888,
series of resolutions which were allowed to
lie over for discussion until the following year,
when they were adopted without material al-
teration at the Rochester meeting. In this ac-
tion the society adopts and recommends 1 25
inch as the standard diameter for oracular, but
believing that larger and smaller sizes than any
one average, however well chosen, will be re-
quired and will continue to be made, 1 00 and
1 35 inch were recommended as secondary
choices. For convenience in interchanging ocular and sub-stage accessories, 0.75 inch was recommended as a size for the former and 1:30 for the latter ("Proc. Am. S. M.," 1884, p. 22). An ideal series of oculars would probably be 1:0, 1:25, and 1:40 inch, but the committee were constrained to adopt the 1:25 inch as the largest, though too near the 1:30, in order to avoid the confusion of too many standards, the Royal Microscopical Society, after the appointment of the American committee had been made public, and co-operation with its objects had been solicited, having selected and published sizes of its own (of which 1:35 was the largest) without conference with the society which had opened the subject and was known to be working upon it. It was also recommended and decided to name oculars, like objectives, by their equivalent focal length in inches. This approximate system, claiming not extreme accuracy but much convenience, has been from the first applied to objectives both in England and America, and has been likewise applied with satisfaction to the naming of oculars by a few makers and by many microscopists. In order to make the name suggestive of the actual working value of the ocular, so that, for example, a one-inch ocular could be substituted for a two-inch for the purpose and with the effect of doubling the power, it was decided, at least temporarily until experience should develop a better plan, to estimate the numerical names on the conventional basis of one-inch focus, representing an amplification of ten diameters as actually used in the compound microscope having somewhat arbitrarily chosen tube-length of ten inches, including the objective (see tube-length, p. 503, supra).

Illumination.—In illuminating apparatus, the more indispensable varieties of which are considered less as accessories than as parts of the stand itself, two important and radical innovations have appeared, the swinging tail-piece above described, and the immersion system.

Only less important than these are the changes in the construction and arrangement of diaphragms for limiting the amount of light received from the mirror or condenser. The conventional wheel of apertures, a crude and clumsy arrangement which had been typical for years, has been replaced by the graduating diaphragm, of which the smaller forms are called "iris" diaphragms. The recent modifications of this by Sidle and Wale and Ban shech & Lomb (see Fig. 20) are small and cheap enough for any stand. Such diaphragms are, in the writer's judgment, by far the most useful and perfect means of accomplishing the object for which they are designed. For very small stands, as the Zentmayer "Histological," the efficient Continental expedient of a "cylindrical" diaphragm, a dark well with a variety of perforated caps, is sometimes substituted. Like the "iris," it is mounted on a sub-stage or in a sliding tube, so that its position may be varied from close to the object-slide to a considerable distance below it. As increase of distance diminishes proportionally the cone of light transmitted from the concave mirror, some of the advantages of the "iris" are thus secured to a limited extent. The cylinder is sometimes contracted above into a cone tapering to the edge of the small aperture, so that the diaphragm may be swung along with the mirror, as it often must be when there is but one tail-piece, without striking against the object-slide (see out of "Histological" stand).

The Continental fashion of letting a plate of apertures into the stage, as near as possible to the bottom of the object-slide, has been adopted by a few American and English makers; but, while very effective in excluding stray light, it falls far short of the above as a means of controlling the angular breadth of the illuminating pencil.

Diaphragms with small apertures, or condensers with small lenses, can be used to really good advantage only with a centering adjustment. In the absence of a centering sub-stage, a centering nose-piece may easily be made to do duty below the stage, as suggested by Mr. E. M. Nelson ("J. R. M. S.," 1881, p. 128).

The use of immersion illuminators was an inevitable and early sequence to that of the corresponding objectives, and it has, at the same time, simplified and improved the illumination of dry objectives. The simplest and one of the most useful forms, is the hemispherical lens (including the average thickness of the glass object-slide) connected with the slide with glycerine or oil in such manner that the object shall be in the center of curvature. This device, introduced for a comparatively trivial purpose by Mr. Wenham in 1854, was assigned to practical use by Mr. Tolles in 1872, and is now universally adopted. It is applicable to any microscope however mean, and is of such almost universal utility, especially in combination with the swinging tail-piece, that a person experienced in its use for general work often finds little necessity for any other illuminator. Its condensing power is small, the object being so far within its focus but it is used as a means of passing light, without deflection of the axis of the pencil, and with a peculiarly clear and brilliant effect, directly from the mirror or source of light, in whatever position it may be placed, to the object.

The interior "balsam" angle of the illumination is therefore directly adjusted by the swing of the tail-piece and indicated by its graduations (shown in engraving of "arc" stand, Fig. 10). When more condensation is required, an objective of one to two-inch focus is inserted in the sub-stage between the mirror and the
here, in which case, as proposed by Mr. A. M. M. J., the mirror is sometimes replaced by a rim mounted on the tail-piece to furnish without reflection.

The hemisphere is held against the slide by the interposed glycerine or oil, flattened at the center for immersion contact with the object-slide, as shown in Fig. 22. With dry objectives, opaque and dark-field effects are of course produced according to the object in balsam or dry on the slide ("A. M. M. J.," 1880, p. 204). Perhaps the simplest means of producing similar results is a slip of common looking-glass lying under the slide, with immersion contact, and reflecting upward the rays received from above, somewhat as in Fig. 23; the ray, H, meeting the slide, S, is reflected by the mirror, R, to the object at F, beneath the objective, B. Sometimes an immersion prism is used as a means of getting the ray, H, into the slide without refraction, or H is made to enter a beveled end of the slide for the same purpose. Variations upon this really efficient plan have been described by numerous writers ("Am. Nat.," 1871, p. 607; 1876, p. 792; "A. M. M. J.," 1880, p. 205; 1884, p. 105).

If the immersion illuminating lens be thickened to more than a hemisphere, and furnished below with one or two collecting lenses to increase the amount of light and give it such convergence as to come to a focus upon the object, it becomes the "Abbe Illuminator," which is now made by various opticians, and is largely taking the place of all other sub-stage condensers. Two such combinations are shown in section in Fig. 24, giving numerical apertures of 1.20 and 1.40 respectively; and, from present experience, they seem preferable for illuminating purposes to the most carefully corrected achromatic condensers.

In the so-called "iris illuminator" ("Proc. A. S. M.," 1884, p. 160), instead of the revolving wheel or sliding plate with various sizes of apertures, hitherto combined with the condensing lens systems, the writer has introduced the iris diaphragm for that purpose, the iris being mounted, as shown in Fig. 25, in a sliding plate, which gives it a decentering adjustment, and utilizes its perfect control of light, not only for central light, but also for pencils of any desired obliquity. This arrangement seems specially applicable to the fourths achromatic condenser, or to any of the
Abbe condensers having lenses of moderate size. Blue and ground-glass caps, center-stops, polarizing prisms, or any special stops desired, may be adapted at will. Among the special stops used is the horizontal slit or pair of horizontally arranged apertures, Fig. 25, for the better illumination of binocular microscopes ("American Naturalist," 1870, p. 636).

For dark-field illumination, the immersion hemisphere with light, suitably condensed by concave mirror or by lenses, passed through it at an angle exceeding the semi-aperture of the objective, is available on any stand. The Abbe condenser with center-stops gives more light, and leaves little to be desired.

For opaque illumination, the swinging tailpiece now allows the concave mirror to be brought above the stage; and in stands which lack this facility the mirror is sometimes so mounted as to be transferable to the stage itself for the same purpose. It is, however, not fully equivalent to the bull’s-eye. The "vertical" illuminator for high powers of the Messrs. Beck, apparently the most used of the various devices for making the objective its own condenser, is improved by the addition of diaphragms to limit the side aperture in its adapter through which the light enters to be reflected, by an inclosed cover-glass, downward through the objective to the object. Fig. 27 shows this illuminator with cylindrical diaphragm, made by James W. Queen & Co., from designs by Mr. Tilghman. Either of the small apertures in its center ring can be brought into various positions over the main opening, while the whole ring can be made to cut off a vertical half or more of the same. Tolle’s internal illuminator, shown in Fig. 18 in connection with the "duplex" objective, being a reflecting prism, projecting between the lower and middle elements of the objective system, and thus avoiding the glare caused by reflection from the back lenses, has been lately revived by Prof. W. A. Rogers, of Cambridge, Mass., and been used to illuminate metallic surfaces, in his elaborate series of researches in regard to the comparative values of graduated standards of length. It has also been used for like purpose by M. Tresca, at the French section of the International Bureau of Weights and Measures at Paris.

In monochromatic illumination, a substitute for the rather inconvenient (and only blue) ammonio-cupric cell is made by Mr. Zeiss, at the suggestion of Prof. Abbe. It consists of a tube, to be placed horizontally beneath the stage, in which are a pair of spectroscopic prisms, which bend the illuminating rays upward in the form of a spectrum through the stage opening. An adjustable slit permits the selection for use of any desired color ("A.M. J.," 1888, p. 171). A very simple and practical arrangement for every-night use, in place of the ordinary blue glass cap, is the graduated disk, contrived by Mr. George H. Hopkins, and made by the Bausch & Lomb Optical Co., which revolves like a wheel, and thus presents over the well-hole intermediate shades from white to dark blue.

In the improvement of lamps for the microscope, much ingenuity has been expended. Gas and candles having wholly given place to petroleum as the source of light, the cylindrical Argand flame has been likewise discarded—Tolle having shown that the simple form, with the edge of its fiat wick turned toward the stage or mirror, gave an easier and clearer resolution than the best "student" lamp. For the large shades surrounding the whole lamp a cylinder of sheet-iron, or blackened brass or tin, just surrounding the chimney, is substituted. With an opening at one side, at the level of the flame, for the emission of light. The opening is often round and supplied with diaphragms, or with a bull’s-eye, in a cylindrical fitting to be focused upon the edge of the flame. Laterly, the glass chimney has frequently been dispensed with, and the metallic cylinder, with its inserted bull’s-eye, made to take its place; or, the bull’s-eye being not always required, the opening in the cylinder is closed by a × 1 glass object-slide slipped into grooves at its edges, or by a similar slip of blue or opal glass, the bull’s-eye being mounted upon an adjacent arm of its own. For great portability, the pocket-lamps are necessarily made with very small oil-vessel and correspondingly small wicks; but for other purposes the latest lamps
ve large, flat, horizontal reservoirs, with a bit burner attached near one edge. Lately, the electric light has been employed microscopic illumination, with results as yet perfect, but not unimportant in themselves, or doubtful in their promise of a more adequate success. The incandescent or loop lights small size are mostly employed, giving an illumination remarkably steady and brilliant, exceptionally free from heat-rays, of high re-viving capabilities on account of its small proportion of yellow rays, white enough to show colors as they appear in daylight, and adapted to spectroscopic work, photography, and resolution with high powers. They were brought into this service by Dr. H. Hearck of Antwerp, whose remarkable photographs of A. pellicula were made by substituting a Swan lamp of six volts for the wick of a Nelson-Mayall microscope-lamp. But as dry batteries are inconvenient as well as expensive, and electricity supplied from publications is not yet generally available, smaller tests with diminished resistance have been instituted, placing them enough nearer to the object to secure sufficient intensity of light.

Mr. C. H. Stern, of England, adopted a Swan lamp whose filament is ¼ inch long and ¼ inch in diameter, and capable of being rendered fully incandescent by two to three Grenet or four to six Locclanché cells; a light of 2q candle-power being obtained with an electro-motive force of 8q volts. For the purpose of regulating the intensity of the light, any required number of cells is switched into the circuit, or an adjustable resistance-coil is introduced. The lamps are mounted upon a stand, as in Fig. 28, or on a bull's-eye stand, or are attached to the microscope itself above the stage for use close below the object-slide for transparent illumination, and below the sub-stage for use in connection with the achromatic condenser, Hærecoscope, or both ("Am. M. J.", 1884, p. 222; "Journ. N. Y. Mic. Society," 1885, p. 1).

A far better mounting than that heretofore mentioned is to attach the lamps, after the plan introduced by Mr. Edward Bensch, to the swinging tail-piece in stands of the American type, as shown in Fig. 30, in which case a single lamp and mounting is sufficient, as it can be readily slipped to any required distance from the object, and as readily located at any angle from the optical axis, either below or above the stage. The separate sub-stage bar, which is shown in the cut, unused and turned directly above the stage, should be turned down and made to carry a thin iron shield between the incandescent light, wherever it may be placed, and the eye; also a porcelain or opal glass, or white paper shade to be interposed between the lamp and the object for use with low powers, the narrow line of intense illumination furnished by the filament being favorable for definition and resolution with high powers, but furnishing with difficulty the white-cloud effects often desired with low powers having a large field of view. In using

* To secure the warm-stage effects frequently necessary to chemical and biological research, Dr. Stein places a coil of platinum wire, capable of becoming heated by an electric current, beneath the stage, for the purpose of heating the air which passes upward through the stage-opening to the object; the temperature being indicated by a spiral bimetallic thermometer, and controlled by regulating the current by the rheostat.

† Dr. Van Heurck places the lamp to a box, with an opening through the cover for the emission of light directly, without reflection, to the object.

‡ For simpler stands having no separate sub-stage bar, these accessories may be attached with somewhat less convenience to the bar which carries the lamp itself.
lamps of high intensity, Dr. von Voit found it always desirable, and sometimes indispensable, to prevent interference phenomena by placing under the slide a slip of ground glass or oiled tissue-paper ("J. R. M. S.", 1884, p. 966).

It seems advantageous to regulate the strength of the current by means of elevating or depressing simultaneously the battery-plates, which should be hung and counterpoised, for this purpose, or else sustained by a pillar and ratchet, so as to expose a varying surface to the battery-fluid.

Various secondary batteries, or accumulators, have been used in connection with the microscopical loop-lamps, with the effect of securing greater constancy in the current; but, in the absence of a public service, where they can be charged by steam-power, or by other sources of supply less expensive than the consumption of battery elements and fluids, they have as yet failed to prove their superiority to the primary batteries above mentioned. Small dynamo-electric machines for similar use are being rapidly perfected; Messrs. T. and S. W. Cuttriss, of Leeds, having produced one suitable for a single twenty-candle-power lamp. Such machines are eligible if supplemented with a small water-motor, or some other of the little engines now becoming common for amateur or domestic use.

Accessories.—In the "micro-polariscope" the English style of mounting the analyzer in an adapter, just above the objective, seems to be giving way to the Continental plan of placing it over the ocular; with decided improvement in respect of definition and facility of manipulation, which are gained at a slight expense in narrowness of field. By an adapter fused over the ocular, and large enough to hold the prism and its mounting, it can be instantly transferred from one location to the other as required.

The calc-spar prism is still conceded to be superior, both as a polarizer and analyzer, to any of the substitutes that have thus far been offered. In the Hartnack and Prazimeo modification of the Nicol prism, which has been used for years in America though not said by high authority to be found in England, the prism is cut so that the base lies at right angles to the optic axis in the diagonal between the obtuse angles; the ends are perpendicular to the axis, the is diminished by about one fourth, and the is increased from 29° to 35°. Prof. Thompson has still further increased it by 9°, by cutting the prism in a principal section, and with the longitudinal right angles to the optic axis of the. These crystals are more costly than the for on account of the greater waste in cutting spar. Mr. E. Bertrand proposes, in a plan for still further increasing the field by utilizing the ordinary ray with its greater refractive index. This is accomplished by cutting a prism of flint-glass of index 1.655 through a plane at an angle of 26° 43' 8" to the and between the polished surfaces inserting a cleavage-plate of spar, cemented with a medium of refractive index not less than 1.568. The prism thus obtained is about equal in length to Hartnack's, but has a field of view of 44' 48' 20". If cut at an angle of 68° 26' 15" and cemented as before, and then cut and cemented again in a plane symmetrical with the former, a prism of half the length is obtained, with an angle of 98° 41' 30". Dr. K. Fensener's prism likewise consists of a glass prism similar in external form to Hartnack's Nicol; the usual large and costly prisms of spar being dispensed with, and instead thin cleavage-plates of nitrate of soda being cemented between the cut surfaces of glass with a mixture of gum-dammar and monobromo-naphthalene ("J. R. M. S.", 1888, pp. 429, 575; 1894, p. 965).

Prof. Abbe's analyzer (Fig. 81) consists of a double-refracting prism of calc-spar, \(s\), achromatized by two glass prisms, \(pp\), which defect from the field the rays polarized at right angles to the refracting edge, while those polarized parallel to the edge pass directly through.
is mounted inside a Huygenian
the diaphragm, d, and the eye-
er. O. D. Ahrens's polarizer, pro-
84, consists of three wedges of spar
(s, p, s, Fig. 83), the optic axis in
the two outer wedges, s, being
parallel to the refracting edge,
while in the middle wedge, p, it
is perpendicular and in a plane
bisecting the refracting angles.
A prism, p, of glass is added, which
achromatizes one ray and corrects
its deviation, but increases the
deviation of the other so much that
it does not interfere with ordinary
observations. The prisms are all
cemented together with balsam,
forming a compound prism whose
arcly more than twice its breadth,
can be used over oculars A and B
ing down the field of view.
ometry the modern graduated round
connection with the lines of an ocu-
ster, are found a sufficient as well
arrangement, except for the work
who require the lithographed mi-
above mentioned. Even to an abso-
le round stage, a graduated revolv-
arrier, useful also for other purposes,
be added. When made separate
and, the goniometer is conveniently
the polariscope analyzer; or, ex-
cellent recent construction by Mr.
with the cobweb micrometer.
icro-spectroscope the Sorby-Brown
arrangement, notwithstanding its
dispersion, continues to be the
rm on account of its general appli-
its ready comparison of different

s rather unsatisfactory facilities for
measuring the spectra have been
the addition of various illuminated
whose image is projected from the
side into the upper part of the tube and reflect-
red from the surface of the upper prism into the
field of view. Fig. 38 shows at one half size
the form manufactured by Zeiss, having below
an ocular with an adjustable slit A serving as
its diaphragm, above in the tube J a set of di-
rect-vision dispersing prisms between the eye-
len and the eye, and at N the micrometer scale
whose image, formed by the lens R and pro-
fected into the spectrum by reflection from the
upper surface of the top prism, enables the po-
sition of dark or bright lines in the spectrum
to be determined by a direct reading of their
wave-lengths in decimals of μ. The scale
reads to the second place of decimals, which
may be further subdivided by the eye; and
lithographed sheets with scales enlarged to 100
mm. are used for recording observations. At
there is also a supplementary stage and prism,
not shown in the cut, for the comparison of
spectra. For greater dispersion the prisms have
been sometimes transferred, at Mr. W. Crookes's
suggestion, to an adapter at the bottom of the
draw-tube or of the nose-piece; the slit being
placed in the sub-stage, and its image being pro-
fected upon the object by means of an object-
ive used as achromatic condenser. This ar-
rangement is applicable to the binocular, and
it is easily combined with a double-image prism
near the slit, or with an ordinary pair of Nicol's
prisms as polarizer and analyzer, in all which
cases remarkable results may
be attained. The slit may be
mounted on a centering nose-
piece attached to the bottom
of the sub-stage, or on the
sliding plate of the "iris illu-
mator" (Fig. 28), in which
latter case it replaces the iris
diaphragm, and can be cen-
tered by the decetering ad-
justment of the plate. From
his experience with such an
arrangement, the writer is
inclined to believe that the
prisms should be located
somewhere at the objective
and not at the ocular end of
the instrument. A late form
of mounting by Mr. Sorby
(Fig. 34) places the prisms
between a specially arranged object-glass A
and a cylindrical lens F for lengthening the
spectrum, the slit being at K, a quartz standard
scale for measuring the position of the bands at
H, the lines of whose interference spectrum are
reflected into the field of view by the small
right-angled prism G, and a collecting lens I,
which when in use is situated immediately
above the object.
The micro-spectral apparatus devised by
Prof. T. W. Engelmann for the study of assimili-
ative action under the influence of luminous
rays of different wave-lengths replaces, when
in use, the ordinary illuminating apparatus,
and consists of a plane mirror, an adjustable
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slit, a collimating lens, a direct-vision prism, and an ordinary objective to project a spectral image of the slit at the plane of the object on the stage. The spectrum is so distinct that some hundreds of Fraunhofer lines can be seen, and sufficiently intense with ordinary gas-light, and a slit of 0.01 mm. wide, for the study of bacteria under high powers. This apparatus is easily extemporized by placing a slit, collimating lens, and prism in the sub-stage between the mirror and a condenser—objective, like e, e, and f beneath the lens g in Fig. 86. The spectro-polarizer of Dr. A. Rollet, of Graz, is placed between the illuminating mirror and the object, for the study of objects in both monochromatic and polarized light. It consists of a Frazewski polarizing prism k (Fig. 85), a slit at a, adjustable by the milled head d, a collimating lens e, a system of direct-vision prisms f, whose spectrum is focused upon the object by the lens g through the selenite plate c. The analyzing prism is placed above the ocular of the microscope with an index moving over a circular scale attached to the ocular to show the exact position of the prism. In using this instrument, the object is placed in one of the dark interference bands caused by the selenite plate, where, if it be doubly refracting even in the slightest degree (like a particle of muscle, for instance), it will appear dark in certain azimuths, but will become luminous in other azimuths in which its optical axis coincides with that of the selenite plate ("A. M. M. J.," 1883, p. 169). This extremely delicate and sensitive instrument can, like the foregoing, be readily extemporized in connection with any good microscope. For the same purpose, and to attain still greater dispersion, Prof. Abbe, at the suggestion of Dr. Dippel, has abandoned the direct-vision prisms, and has devised an arrangement for passing the light horizontally beneath the stage through a polarizer, selenite plate, slit, and achromatic collimating lens, to a pair of dispersing prisms whose spectrum passes upward through an objective at an angle of 90° from its original direction. The image of a scale giving the wave-length of the lines in the spectrum is projected by lenses in a supplementary horizontal tube upon the upper surface of the last prism, and by it reflected into the field of view along with the spectrum. The polarizing prism is mounted in a movable frame which can be turned aside when ordinary light is required ("A. M. M. J.," 1883, p. 174).

The "Society" screw, of the standard size and proportions recommended in 1857 by the London (now Royal) Microscopical Society as a means of attaching objectives interchangeably to all microscopes, continues in practically universal use in England and America, though not usually attached to the smaller Continental objectives except for purposes of export. The extensive manufacture of the "Society" screw by many manufacturers of various degrees of skill, and possibly the employment of tools and standards altered by wear, have led to such loss of uniformity that the system no longer fully accomplishes its object; the objectives of some reputable makers fitting too loosely into stands of others, while the objectives of the latter enter only partially or with difficulty into the tubes of the former. To remedy this evidently growing evil, the Royal Microscopical Society is now issuing to manufacturers standard stock gauges and taps designed to represent exactly the official screw. These tools are now available and are in general use; but, although they presumably represent quite closely the theoretical "Society" screw, they prove better calculated to guard against future errors than to harmonize existing apparatus. In a paper on this subject read by Mr. Edward Banach at the American Society of Microscopists, in 1884 ("Proceedings," p. 158), it was shown that three of these taps in his possession were individually imperfect and measurably unlike each other, and that many objectives by various makers would not screw easily if at all into an adapter cut by one of them. After the reading of this paper a committee was appointed to devise if possible a plan for rendering such apparatus fully interchangeable. Meanwhile those who have instruments cut with the standard taps must either destroy their accuracy by having the screws eased out by "rule of thumb," or else must have no small portion of their objectives, amplifiers, etc., turned down to match, and thereby rendered too loose for their original associations.

The successful introduction of the "Society" screw put an end for many years to the use of bayonet-catches, which were then being made by Spencer, Grunow, and others for the ready attachment of objectives, and to other labor-saving devices for the same purpose. The labor of manipulating the screw, however, led to the employment of double, triple, and even quadruple nose-pieces, by which any one of the specified number of objectives could be rotated promptly into the axis of the instrument. Being firmly made, and with angular arms to hold the unused objectives out of the way of the stage, they proved exceedingly useful in cases where extreme precision was not required; though analogous devices of inferior model and workmanship had before been tried.

* Of 94 objectives, etc., by eighteen reputable makers tested by the writer were found defective in light, and 12 others by six makers would not screw up to the shoulder at all. Those which failed were nearly equally divided between English and American makers.
abandoned. They were limited, however, as in most cases to two objectives, rather costly, and their weight with that of two attached objectives impaired the ease of many forms of fine adjustment. A and doubtless better device, of which than a dozen varieties have been introduced and many of them patented during the ar years, is an adapter to screw permanently into the nose-piece of the microscope; h construction that any objective may instantly attached or released, the objective e cases requiring a specially adapted to be worn upon its "Society" screw. d of these are friction-catches, that of arks, published in 1880, having upon the the objective a cylindrical tube which be slid firmly into the split tube of the a. Mr. Frank Crisp immediately procured the substitution of the conical fitting d by Mr. Browning for astronomical uses; which was accomplished by Dr. ars, of the Quellet Club, three years Still later Watson & Son, for greater slit the outer cone and surrounded it screw-collar for gripping the objective. conical form is extremely simple, adds but to the length of the body, and possesses greater capabilities of cheapness than her. When properly handled its power ement is practically unlimited, but its l insertion and easy removal depend upon stant care and skill of the user. In an class of adapters the objective is slipped ae under a shoulder at the bottom of a tube or under the prongs of a horizon k, and held up against the nose-piece by g. Such are the "objective-carrir" of t, the "objective-extractor" of Verick and "Geneva nose-piece," by the Société cie pour la Construction d'Instruments ysique. Of these, which are especially able to the small Continental objectives, geneva adapter was doubtless the pioneer, described by Prof. M. Thury in 1863, and modifications exhibited by the Ge company at the Paris exhibitions of 1867 378, and was the only one known until that date. It attracted little attention, er, and at present the modification by retcher (Fig. 36) seems to be far the generally known and used, as well as satisfactory in practice. In another class yonet-catches are revived, as in one of M. Nelson's adapters, and in Mr. Bul devised and proposed by Prof. Albert la, in each of which three projecting on the collar are safely locked within spter. Cutting away alternate sections "Society" screw thread from the ob and nose-piece, so that the former can inserted without screwing, and locked in by a slight turn toward the right (a long familiar in the arts of peace and war) was proposed for the microscope by Mr. in "Science Gossip," and introduced by

Mr. E. M. Nelson at the Quellet Club in 1882. Mr. Zentmayer in his very practical form placed the divided screw on the outside of a "Socie-

![Image 36 - Nachet's Nose-Piece](image36)

![Image 37 - Zentmayer's Nose-Piece](image37)

![Image 38 - Fasoldt's Nose-Piece](image38)

ty" screw collar, and furnished an adapter to match, as shown in Fig. 37, thus obviating any alteration to the objective or microscope. Meanwhile, the nose-piece was made by Jas. L. Pease, of Chicopee, Mass., as a mechanical chuck with power to grasp a collar on the objective. Mr. Thomas Currie, of London, add ed a "Society" screw thread to the jaws, so as to clamp the objective without a collar; and Mr. Charles Fasoldt, of Albany, N. Y., greatly simplified and improved the apparatus by making one only of the jaws movable and controlled by a spring and lever, as shown in Fig. 38. With this adapter upon the microscope, the formerly tedious procedure of attaching and detaching objectives is reduced to simply touching a lever while placing the objective where it is wanted.

Objective protectors, to enable the microscope to be used with the lower portion of its tube plunged into the liquid containing the object to be examined, seem to have been originally invented by Dr. C. R. Goring, who described ("Micro. Illust.," London, 1829, p. 174) a modification of his "engiscope," having the compound body prolonged downward below the transverse bar sufficiently to reach near the bottom of a small aquarium-jar; the submerged portion of the tube being protected by a glass tube or "boot," closed at the bottom just below the objective by a piece of plate-glass. A "diagonal boot" was also provided with a mirror set just below the objective at an angle
of 45°, by which the field of view was transferred from the bottom to the side of the tank. Sir David Brewster had already suggested the employment of an objective corrected for use in water instead of air; but Dr. Goring, while considering this plan more scientific than his own, feared that it would be difficult to make the object-glass water-tight, and that its being able to serve only in water would be a bar to its usefulness. Rasphall substituted for experiments with heated bodies a glass tube closed at the bottom, thus avoiding the danger of heat loosening the cemented cover. Mr. E. Richards likewise arranged a tank microscope, for the examination of organisms which could not be removed from the bottom of the tank without destroying them. The objective was carried below the stage by means of a long adapter, and covered with a long shield-tube, allowing it to be brought within focusing distance of the bottom of a tank eight inches deep, with powers as high as 1-inch ("Month. Mic. Jour," 1874, p. 88). In the early days of immersion lenses, Tolles made some, of low as well as high power, especially corrected to use unprotected in the fluid (water, mucous, serum, etc.) containing the objects. During the past few years the protector shown in Fig. 39 has been made by T. H. McAllister, of New York, at the suggestion of Mr. R. E. Dodgeon, of London ("Nature," 1878, p. 106; Buchanan, Am. ed., p. 81). It is a brass tube, attached to the objective only, closed at the bottom with a cover-glass, and is suitable for use in the study or dissection of objects contained in watch-glasses or small troughs. During the present year, Mr. J. W. Stephenson, of London, has revived, probably unconsciously, in his aquarium microscope, the exact contrivance figured by Dr. Goring, only attaching the body to a bar across the aquarium instead of to the microscope-stand.

A protector of thin plate-glass, screwed into the back of the objective to shield the lenses from dust, though employed years ago by the late F. A. Nobe, has been recently patented by H. R. Spencer & Co. Though useful in certain cases of special exposure, its claim to leave the performance of the objective wholly unimpaired may well be questioned.

The Beale neutral-tint camera lucida is still extensively made and used, at least in America. The well-known disadvantages of singly-reflecting instruments are more than counterbalanced by its simplicity and cheapness, in those cases where choice depends largely on the latter considerations. Aside from the substitution of a colorless cover-glass for the original tinted plate, its improvements consist in the convenience and economy of the mounting adopted by different makers, and in the many devices of cork, and wax, and wire, by which a cover-glass can be easily mounted for his own use by any person so inclined. Other singly-reflecting cameras, which have been repeatedly proposed under various forms and names and claims, have failed of extensive adoption; and it may be considered as settled by experience that any one requiring a better camera than the Beale will need a doubly-reflecting form.

Only lately has the original Wollaston camera lucida been fairly superseded by other doubly-reflecting forms, equal in optical performance, and free from its defects of requiring a horizontal position of microscope and constrained steadiness of eye. With one exception the recent improved styles permit, what seems to be a radical improvement, a direct vision of the microscopic field, the pencil and paper being seen by reflection. Nachet's, which may be considered the pioneer as well as the type of these, at least in American usage, consists of a long, flat prism, whose rectangular end covers the eye-lens, permitting a direct and easy view of the field, while rays from the drawing-pencil enter obliquely from below the other end, and are reflected, first through the length of the prism, and then upward into the main axis of vision. The second reflection, in the latest form, is from a translucent film of gold through which the rays of direct vision pass without great loss, as suggested by Prof. G. Govi, lying in the direct line of vision between two obliquely-cut and balsam-cemented sections of the prism. The film of gold thus in a slight degree, both the drawing and the microscopic field. The excellent working quality of this apparatus are slightly impaired by the nearness of the drawing-field to the foot of the microscope, and by the nearly vertical position required, unless the drawing-board be inclined, in order to prevent distortion by securing coincidence between the plane of the image and that of the drawing surface. Seiberl & Kraft's camera differs only in substituting for the prism a pair of plane
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Direct vision being accomplished by a hole in one of them; and this is the case in many amateur arrangements which to make and excellent to use. In Mr. A's camera the prism is separated into two of which, as shown in Fig. 40, reflects rays, P, from the paper horizontally to her, which turns them upward to the P N, in conjunction with the direct rays, \( a \) the microscope, which pass through central aperture, about half the diameter C D of polished glass separated by a thin film of air, and sufficiently inclined to give considerable but not total reflection. Unlike the other recent forms, the direct ray, J K, is received from the paper, and the reflected ray, H I, from the ocular, giving a very easy view of the pencil, but some disadvantage in increased distance of the eye-point K from the ocular, and consequent limiting of the field of view. The angular aperture, however, of the cone of light at the eye-point K is about 30°, thus utilizing the whole field of (about) a "B" ocular. This camera is used with the microscope and drawing-field in the same position as is the Grunow apparatus, which it much resembles in satisfactory working qualities ("A. M. M. J.", 1884, p. 221).

Photo-micrography, as a substitute for the camera lucida, in rendering microscopical images material and permanent, was lately a luxury attainable by few, but has now become popular through the adoption of the dry-plate process in photography, the introduction of the amateur camera and its outfit, and the ingenuity with which several experimenters have adapted such apparatus to the microscope. By some, a simple cone slipped over the upper end of the microscope-tube, with a holder at the top for a sensitized plate as in Stein's apparatus ("J. B. M. S.", 1882, p. 113), is made to do good service. Some makers now prepare a special "photo-micro camera" of simple but efficient model, of which a good example is the one devised by Mr. H. P. Atwood ("Proc. Am. S. M.", 1884, p. 176); while others furnish an ordinary amateur camera arranged for use in connection with almost any microscope. Mr. William H. Walmes-
“magic-pantern,” with braid-wicked lamp and special condensers, or a special construction like Carbutt's “dry-plate lantern,” is often conveniently substituted for the illuminating portion of the apparatus; and a similar adaptation might be made, after suitable changes, of some of the illuminators made for medical and surgical use—as the laryngoscope, for instance.

In micrometry a standard has been adopted as a basis of appeal from the discrepancies among the commercial scales formerly available, some of which varied among themselves as much as three or more per cent. of their length. In 1879 a “National Committee” of sixteen members, representing that number of American microscopical societies, was organized through the efforts of the Troy (N. Y.) Scientific Association. President F. A. P. Barnard, of Columbia College, N. Y., was made chairman of the committee, and the writer secretary. The committee easily and unanimously agreed to accept a metric standard, and to adopt the micron (μ = 0,001 mm.) as the micrometric unit; also to secure a standard plate, of carefully verified value, representing one cm. subdivided to ten μ. On the motion of the chairman, the American Society of Microscopists, at its Buffalo meeting in 1879, rescinded the act of the Microscopical Congress which the previous year had without due consideration selected the one-hundredth mm. as the micrometric unit. In 1882 a scale answering the requirements of the committee, and designated as “Centimetre Scale A, 1882,” was prepared for their use upon a plain-iridium bar made by Matthey, and containing 20 per cent. of iridium, by the United States Bureau of Weights and Measures. The limits of the cm. and of its subdivisions were indicated by triple sets of lines, ruled with great distinctness and regularity. The relation of its total length to the standard metre, and the ratio of its subdivisions, was fully determined by the bureau by Prof. C. S. Pierce, and remeasured for the committee by one of its members, Prof. William A. Rogers. Prof. Rogers’s elaborate study of the plate led to the conclusion that, assuming 0,2 μ to be the limit of precision attainable with certainty in micrometry, the middle defining lines of this standard require no corrections at 62° Fahr. It was then accepted by the committee, and was adopted as its standard by the American Society of Microscopists at the Chicago meeting in 1885.

The one best of three copies on glass, designed as working-copies for the testing and correction of common micrometers, which were prepared by Mr. Fasoldt to the order of the society in 1884, proved to be about 4 μ too long. Though the ruling and spacing are otherwise excellent and the error minute in the small subdivisions ordinarily measured, more accurate copies will doubtless be soon secured (“Proc. Am. S. M.,” 1879, p. 28; 1883, pp. 178–200; 1884, p. 220). The report of the comparisons of this copy with the original centimetre scale A by Profs. W. A. Rogers and W. A. Anthony, of Ithaca, N. Y., shows an average deviation of only 0:10 μ. Prof. Rogers reporting the scale F to be 4-1 μ too long, according to the mean of his measurements, while Prof. Anthony, working independently, reports it 4-2 μ too long. This is important, indicating that so small an average deviation as 0:10 μ is attainable with present means of measurement.

Bibliography.—Data pertaining to this subject are scattered throughout nearly all the microscopical books and journals of recent years. References are given in the article only where of practical importance; and for the same reason reviews or reprints most accessible to American readers are usually specified, instead of the original sources from which the data are taken. The following titles, which occur frequently are designated by initials or other obvious contractions: Carpenter, William S., “The Microscope,” sixth edition, London, 1885; Behrens, J. W., “The Microscope in Botanical Research,” American edition, Boston, 1885; “Proceedings of the American Society of Microscopists,” yearly; “Journal of the Royal Microscopical Society,” bimonthly, London; “American Monthly Microscopical Journal,” monthly, Washington, D. C.

MIGNONETTE CASE, THE. What has been generally called “the Mignonette case” came up in the English courts near the close of the year, and attracted unusual attention, both in Great Britain and the United States, as one unprecedented in the annals of criminal jurisprudence. It raised the question whether killing a human being in case of necessity, to get nourishment to sustain life, is murder. This question had never been decided by any English or American tribunal. Hence, there was no precedent or authority to guide the court in deciding it.

A small yacht, the Mignonette, left Southampt for Sydney, Australia, on May 13, 1884. The crew consisted of Thomas Dudley, captain; Edward Stephens, mate; —— Brooks, seaman; and Richard Parker, a boy seventeen years of age. These four comprised all on board. They were bound for the equator, and on July 5, when about 1,600 miles from the Cape of Good Hope, was wrecked and went down in a storm. Those on board sought refuge in a boat. The only nourishment they were able to secure from the yacht was two one-pound cans of tinned meat. They had no other food and no water in the boat. On the fourth day they caught a small turtle. On the twelfth day this and the turtle had been consumed; and for the next eight days the men had nothing to eat, and no fresh water to drink except a little rain they had caught in their oil-skin caps. On the eighteenth day, when they had been seven days without food and five without water, the three men began to consider what should be done to prolong their lives in case no succor should come. Dudley and Stephens suggested
what some one should be sacrificed to save the rest, but Brooks dissented, and the boy, to whom they were understood to refer, was not consulted. On the next day, the nineteenth after the yacht went down, Dudley proposed to Stephens and Brooks that lots should be cast to determine who should be put to death. Brooks would not agree, the boy was not consulted, and there was no drawing of lots. Dudley and Stephens spoke of their having families, and said that it would be better to kill the boy in order to save the lives of the rest. Dudley then proposed that if no vessel was in sight by the next morning, Parker should be killed. The next day, the twentieth, no vessel appeared. Dudley told Brooks he had "better go and have a sleep," and made signs to Stephens and Brooks that it would be best to kill the boy. Stephens agreed to the cast, but Brooks dissented. The boy was then lying at the bottom of the boat, helpless, extremely weakened by famine, and drinking salt water, unable to make any resistance. With the consent of Stephens, Dudley killed the boy. This was on July 25. The three men fed on the body for four days. On the twenty-fourth day of their being in the boat, they were picked up in a low state of prostration by the German bark Montezuma, and taken to Falmouth, England. On November 3 the attention of the grand jury at Exeter was called to the case by Baron Huddleston. After reviewing the facts, and discussing the legal question involved, he said:

I am bound to tell you that if you are satisfied that the boy's death was caused or accelerated by the act of Dudley, or Dudley and Stephens, this is a case of deliberate murder, neither justifiable nor excusable, and the crime is murder, and you therefore ought to find a true bill for murder against one or both of the prisoners. You will perhaps be good enough to say whether, with reference to the mate Stephens, there is evidence that will satisfy you that he was abetting or sanctioning the conduct of Dudley. If so, you will find a true bill against him. In his statutory examination on oath, he says that the master (Dudley) selected Parker as being the weakest, that he agreed to this, and that the master accordingly killed the lad. Unless you disbelieve him, therefore, you will find a true bill against him as well as Dudley. I may say that Captain Dudley seems to have made no secret of what has taken place, and to have voluntarily furnished all the evidence against himself, although it is quite true that the course taken by the mate, very properly, in making Brooks a witness, supplies also evidence for the prosecution. The case having taken place on the high seas, and being a case of British subjects, is one that by British statute is triable here.

The grand jury indicted Dudley and Stephens for murder. On November 6 the prisoners were brought to trial. The evidence against them consisted of the testimony of Brooks and the depositions and statements made by Dudley and Stephens before the Receiver of Wreck at Falmouth. No evidence was put in by the defense. As the question of law involved was not open to doubt, Baron Huddleston advised that the jury find the facts in a special verdict to be submitted to the Queen's Bench, which tribunal would determine whether the prisoners were guilty of murder. This course was taken. The special verdict returned by the jury restated the facts above given, and concluded:

That if the men had not fed upon the body of the boy, they would probably not have survived to be picked up and rescued, but would within the four days have died of famine; that the boy, being in a much weaker condition, was likely to have died before them; that at the time of the act there was no sail in sight, nor any reasonable prospect of relief; that under these circumstances there appeared to the prisoners every probability that unless the boy or one of themselves they would die of starvation; that there was no appreciable chance of saving life except by killing some one for the others to eat; that assuming any necessity to kill any one, there was no greater necessity for killing the boy than any of the other three men; but whether, in all matters, the prisoners were and are guilty of murder, the jury are ignorant, and refer to the court.

On December 4 the case was argued before the Queen's Bench division of the High Court of Justice, consisting of Lord Chief-Justice Coleridge, Justices Grove and Denman, and Barons Pollock and Huddleston. There was no dispute as to the facts. The only question was the legal one whether killing a human being to obtain needed sustenance for life is murder. The defense argued that such killing is "homicide by necessity," and therefore not a crime. The court unanimously held it to be murder. The grounds for this conclusion were given in an opinion rendered by Lord Chief-Justice Coleridge on December 9. He began by examining the definitions of murder given by early English authorities—Bracton, Hale, and others—which definitions, the defense claimed, "imply, if they do not state, the doctrine that in order to save your own life you may lawfully take away the life of another when that other is neither attempting nor threatening yours, nor is guilty of any illegal act whatever toward you or any one else." He showed that the doctrine was not supported by the authorities cited. The rest of the opinion is as follows:

In there, then, any authority for the proposition which has been presented to us? Decided cases there are none. The case of the seven English sailors referred to by the commentator on Grosset and by Putferdorff has been discovered by a gentleman of the bar, who has communicated with my brother Huddleston, to convey the authority (if there be so much) of a single judge in the Island of St. Kitts when it was possessed partly by France and partly by this country, somewhere about the year 1841. It is mentioned in a medical work published at Amsterdam, and is altogether as an authority in an English court as unsatisfactory as possible. The American cases may be my brother Stephen in his Digest from "Wharton on Homicide," in which it was decided that sailors had no right to throw passengers overboard to save themselves, but on the ground that the proper mode of determining who was to be sacrificed was to vote upon it by ballot, can hardly, as my brother Stephen says, be an authority satisfactory in a court in this country. The observations of Lord Mansfield in the case of "Re. ex. Stratton and others," striking and excellent as they are, were delivered in a political trial, where the question had arisen whether a political necessity had arisen for deposing a Governor of Madras, and
they have little application to the case before us, which must be decided on very different considerations. The one real authority of former time is Lord Bacon, who, in his commentary on the maxim necessitas est causa est, proves that the law as

"Necessity carrieth a privilege in itself. Necessity is of three sorts—necessity of conservation of life, necessity of defence, and necessity of the act of God or a stranger. First of conservation of life; if a man steals viands to satisfy his present hunger, this is no felony, as hunger. So if divers be in danger of drowning by the casting away of some boat or bark, and one of them get to some plank or on the boat's side, it is not to be observed that Lord Bacon's proposition that stealing to satisfy hunger is not larceny is hardly supported by Stannard, whom he cites for it, and is expressly contradicted by Lord Hale in the passage already cited. And for the proposition as to the plank or boat it is said to be derived from the canonists. At any rate it cites no authority for it, and it must stand upon his own. Lord Bacon was great even as a lawyer; but it is permissible to multiplie smaller men, relying upon principle it is ample and upon the authority of others, the equals and even the superiors of Lord Bacon meant to lay down the broad proposition that a man may save his life by killing, if necessary, an innocent and unoffending neighbor, it certainly is not law at the present day. There remains the high authority of my brother Stephen, who, both in his Digest, and in his History of the Criminal Law, uses language wide enough to cover this case. But it does not over it of necessity, and we have the highest authority for saying that it was not meant to cover it. It has been necessary, we must with all deference have differed from him, but it is satisfactory to know that we have probably at least arrived at no conclusion which he would have been unable to agree. Neither are we in conflict with any opinion expressed upon the subject by the learned persons who formed the commission for preparing the criminal code. They say on the subject:

"We are not prepared to suggest that necessity should in every case be a justification. We are equally unprepared to suggest that necessity should in no case be a defense. We judge it better to leave such questions to be dealt with when, if ever, they arise in practice, by applying the principles of law to the circumstances of the particular case."

It would have been satisfactory to us if these eminent persons could have told us whether the received doctrine of legal necessity were in their judgment correct and exhaustive, and if not, in what way they should be amended; but as it is, we have, as they say, no creeds in such matters."

the law from morality would be of fatal consequence; and such diverse and opposite opinions in this case were to be held by law an absolute defense of it. It is not so. To preserve one's life is, generally speaking, a duty, but it may be the plainest and the highest duty to sacrifice it. War is full of instances in which it is a man's duty not to live, but to die. The duty, in case of shipwreck, of a captain to his crew, of the crew to the passengers, of soldiers to women and children, as in the noble case of the British, these duties impose on men the moral necessity, not of the preservation, but of the sacrifice of their lives for others, from which in no country, lest of all, it is to be hoped, in England, will men shrink, as indeed they have not shrunk.

It is not correct, therefore, to say that there is any absolute or unqualified necessity to preserve one's life. Necessa est ut vivam, non ut vivam, is a saying quoted by Lord Bacon himself with high eulogy in the very chapter on necessity to which so much reference has been made. It would be a very easy and cheap display of commonplace learning to quote from Greek and Latin authors passage after passage, in which the duty of dying for others has been laid down in glowing and emphatic language as resulting from the principles of heroic ethics. It is enough in a Christian country to remind ourselves of the example which we profess to follow. It is not needful to point out the awful danger of admitting the principle which has been contended for. Who is to be the judge of this sort of necessity? By whose act of life to determine the necessity which will justify him in deliberately taking another's life to serve his own.

"So speak the need, and with necessity, The tyrant's plea, excused his devilish deeds."

In this case the weakest, the youngest, the most resisting was chosen. Was it more necessary to kill him than one of the grown men? The answer must be "No." It is not suggested that in this particular case the deed was devilish, but it is quite plain that such a principle once admitted might be made the legal cloak for unbridled passion and atrocious crime. There is no safe path for judges to tread but to ascertain the law to the best of their ability, and declare it according to their judgment; and if in any case the law appears to be too severe on individuals, to lend it to the sovereign to exercise that prerogative of mercy which the Constitution has intrusted to the hands fittest to dispense it. It must not be supposed that refusing to admit temptation to be an excusé for crime it is forgotten how terrible the temptation was; how awful the suffering; how hard in such trials to lay the judgment straight and the conduct pure. We are often compelled to set up standards we can not reach ourselves, and to lay down rules which we could not ourselves satisfy. But a man has no right to decline temptation to be an excusé, though he might himself have yielded to it, nor allow compassion for the criminal or weakness in any manner the legal definition of the crime. It is therefore our duty to declare that the prisoners' act in this case was wilful murder; that the facts as stated in the verdict are no legal justification of the homicide; and to say that in our honest opinion they are upon this special verdict guilty of murder.

Lord Coleridge then passed sentence of death on the prisoners. They were recommended to the mercy of the Crown by the jury that tried them, and in this recommendation the judge that presided over the trial, and all the Judges of the Queen's Bench that decided the case occurred. The sentence of death was changed to one of imprisonment for six months.

The American case cited in the discussion of
sition in the English courts was tried in the United States Circuit Court held in Philadelphia in 1844. The American ship William was wrecked on a voyage from Liverpool to Philadelphia. The crew and some of the passengers escaped in two boats. To light of the boats, several passengers were overboard by the seamen. There was no ring of life. Holmes was indicted for misprision under a statute of the United States.

The defense was justifiable homicide in self-defense. The Court (Justice Baldwin) held that the indictment was for manslaughter instead of murder, because there was no malice, and malice was essential to the necessary allegation that the negro was the necessary that justified the killing. Moreover, there was a distinction in the status of passengers and that of those in case of shipwreck. He said:

"A sailor is bound to undergo whatever hazard is necessary to preserve the boat and the passengers, as great an emergency becomes so great as to call for sacrifice of life, there can be no reason why the not still remain the same; the passengers, and either to labor or incur the risk of life, be bound to sacrifice his existence to preserve their welfare. The captain, indeed, and a sufficient reason to navigate the boat must be present, except these abide in the ship, all will perish.

But if there be more seamen than are necessary to manage the boat, the supernumerary sailors fight, for their safety, to sacrifice the passengers, and passengers, in fact, can not be in equal positions. The sailor (to use the word of a distinguished writer) owes more benevolence to himself; he is bound to set aside his own life to save others. If we admit that sailor and sailor may struggle with each other for the plank that can only be won, we think that if the passenger is on the boat, the law of necessity justifies the sailor killing the other.

In this case, he was convicted and sentenced to six years imprisonment. The case is reported in the first volume of Wallace, Jr.’s, Reports.

STATE: MINNESOTA.

Government.—The following State officers during the year:

Governor, Charles A. Gilman; Secretary of State, Frederick von Baumbach; Attorney-General, W. J. Hahn; Auditor, W. W. Miller; Treasurer, James F. Hubblette, Republican; State Auditor, Charles Kittelson; Commissary, A. R. McGill; Commissioner of Statistics, Oscar Malmrose; Railroad Commissioner, James B. Baker; and others, Chief Justice, James Gilfillan; Judges, John M. Berry, William Mitchell, Hickinson, and Charles E. Vanderburg.

Conditions.—The Governor, in his message to the Legislature of 1885, makes these statements:

During the year just closed, Minnesota has been blessed with harvests of surpassing abundance. Under the conditions ordinarily prevailing, this would assure to our people great prosperity, but the experience of all grain-growing countries of the world has been so like our own in this respect that, as a consequence, the great distributing markets, unable to absorb the rapid accumulations, have now placed prices of all cereal products that values have declined till they barely return to the grower the cost of production. In the older sections of the State where our agricultural industry has demonstrated the adaptability of our soil and climate to the employment of the most advanced methods of husbandry, there have rapidly developed in recent years large interests in stock-raising and extensive dairy establishments.

Finance.—To conform to the changes in the fiscal year made by the last Legislature, the report of the current year covers the eight months ending July 31, 1888, and the year ending July 31, 1884.

The cash balance Dec. 1, 1882, was $148,098.58; July 31, 1888, $303,666.44; receipts during the eight months, $1,875,196.90; disbursements during the year ending July 31, 1884, $3,562,562.73; disbursements, $1,714,711.18 and $5,729,864.13 respectively; balance, July 31, 1884, $398,789.04, including:

State institutions fund .......... $154,586.01
Permanent school fund ............ 454,930.90
General school fund .............. 438,216.57

There had been disbursed during the twenty months covered by these transactions of the treasury, $775,415.55 for the maintenance of State institutions, $612,022.59 in the construction of new buildings for public use, $578,278.82 for interest on the State debt, and $850,158.90 for the general expenses of the State government; all of which has been met by the ordinary revenues of the State, except a part of the interest charge, which is paid from the income of the internal improvement land fund. This interest account, almost wholly due to the railroad adjustment bonds, is a burden recently imposed upon the treasury, and a large part of the expenditure for public buildings has been required to replace structures destroyed by fire. The one-mill tax, for which the levy has been reduced, with the other revenues of the State, have, however, been sufficient to provide for this unusual outlay and leave a balance in the treasury.

In 1873 all receipts for taxes on railroad and telegraph companies were set apart as a special fund for the support of the State institutions. At that time the amount realized from these sources was but $37,097.14. It has now become the principal source of revenue the State enjoys, amounting the past year to $651,378.18, largely in excess of the demands upon it.

The additions to the permanent trust funds of the State during the twenty months were as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent school fund</td>
<td>$888,804.15</td>
</tr>
<tr>
<td>Permanent university fund</td>
<td>$7,628.64</td>
</tr>
<tr>
<td>Internal improvement land fund</td>
<td>$398,288.98</td>
</tr>
<tr>
<td>Total</td>
<td>$1,115,829.79</td>
</tr>
</tbody>
</table>

The aggregate accumulations of these funds amount to $8,929,096.39, divided as follows:
permanent school fund, $6,259,692.85; permanent university fund, $682,780.30; internal improvement land fund, $1,800,605.71.

The congressional grant of land for the use of schools it is estimated will amount to about 8,000,000 acres when the surveys of the State are completed; 908,145 acres of which have been sold at an average of $6.02 an acre. Estimated upon this basis, the common-school fund will ultimately realize over $18,000,000 from this source.

The permanent university grant has 20,091 acres yet to be disposed of, which will swell the accumulations of its fund to fully $1,000,000. The internal improvement land fund has 274,933 acres of its grant yet unsold. Its final accumulations should be nearly $3,000,000. This may properly be denominated a sinking fund for the redemption of the State railroad adjustment bonds, as it has been provided by constitutional amendment that all the revenues of this fund shall be applied to the payment of the principal and interest of these bonds.

The present indebtedness of the State is represented by the following issue of bonds:

<table>
<thead>
<tr>
<th>Item</th>
<th>First</th>
<th>Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>Railroad adjustment bonds, due in twenty, and redeemable in ten years, 44 per cent.</td>
<td>$4,298,000</td>
<td></td>
</tr>
<tr>
<td>Revenue bonds, serie of 1888, redeemable at the pleasure of the State, 44 per cent.</td>
<td>200,000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$4,498,000</td>
<td></td>
</tr>
</tbody>
</table>

These revenue bonds will be redeemed within the next three years, provision having been made thereof.

The Public Examiner's statement of county finances shows receipts for 1884 of $9,381,126.99, including balance on hand; disbursements, $7,369,703.59.

Education.—The enrollment in the public schools during the year was 223,309, an increase of 26,566 since the last biennial report. During the period 392 new school-buildings were erected, at a cost of $1,065,170, and the surplus of $4,108,981.70 was raised for educational support. The three normal schools are in a high state of efficiency. The Normal Board report the following enrollment for the year:

<table>
<thead>
<tr>
<th>Place</th>
<th>First</th>
<th>Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Winona</td>
<td>188</td>
<td>189</td>
</tr>
<tr>
<td>At Mankato</td>
<td>402</td>
<td>402</td>
</tr>
<tr>
<td>At St. Cloud</td>
<td>870</td>
<td>870</td>
</tr>
<tr>
<td>Total</td>
<td>1,875</td>
<td></td>
</tr>
</tbody>
</table>

—showing an increase of 847 in two years. Of the total enrollment, 672 are in the normal department proper, 800 in the preparatory, and 403 in the model. The number of teachers graduated to date in all the schools is 1,053.

In 1884 the current expenses of these schools were $19,965.34; expended for improvements, $12,723.57.

The number of high-schools to which the State aid of $400 each was apportioned in 1882 was 38; in 1888, 49; in 1884, 58; pupils enrolled, 2,613.

The applicants admitted to the State University were 63 in 1883, and 87 in 1884. The attendance was 293 and 279, and the graduates 25 and 26, for the same years respectively.

The department of medicine has been organized. The affairs of the institutions are generally in a very prosperous condition. The expenditures for the two years were $112,478.35 for current account, and $50,995.85 for permanent improvements.

Hospitals for the Insane.—During the twenty months ending July 31, 1884, there was an increase of 330 in the population of the two State hospitals for the insane. The number receiving care at the date of the trustees' report was 1,193—506 at St. Peter and 587 at Rochester. The capacity of the hospitals during the past two years has been increased by an additional wing at Rochester, and a detached ward at St. Peter, sufficient together to accommodate 373 patients, making the present aggregate capacity of the hospitals 1,375. The added capacity has but little more than met the increase of population of this class.

The expenditures for account of the insane past two years have been as follows:

<table>
<thead>
<tr>
<th>Item</th>
<th>First</th>
<th>Second</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building and furnishing and purchase of land</td>
<td>$1,345,993</td>
<td>$296,946</td>
</tr>
<tr>
<td>Current expenses, 1888 (eight months)</td>
<td>194,984</td>
<td>35,171</td>
</tr>
<tr>
<td>Current expenses, 1884</td>
<td>120,945</td>
<td>60,351</td>
</tr>
<tr>
<td>Total</td>
<td>$1,646,951</td>
<td>$317,468</td>
</tr>
</tbody>
</table>

The average weekly cost per capita has been $3.94 at St. Peter and $3.44 at Rochester for the past year.

Deaf and Dumb, Blind, and Imbeciles.—There has been a moderate increase in the pupils of each department, the proportion being largest in the school for the feeble-minded. Two hundred and fifty-three pupils were in attendance during the year, divided as follows: deaf and dumb, 151; blind, 42; and feeble-minded, 60. A structure has been added to the Blind Institute, at a cost of $30,578.31. The building for imbeciles has also been enlarged to nearly double its capacity, at a cost of about $34,000.

State Prison.—During the night of January 8 a portion of the shops in which the coats were employed was burned, and on the 25th another fire reduced to ruins the building of the prison proper, with nearly all its contents. One of the shops destroyed by the first fire was the property of the State. It was determined to rebuild this, and also to restore the prison building upon an improved plan as to its interior arrangement and construction. The structures are completed and now in use.

The cost of the new prison building, including the iron roof of the cell-room, is about $48,000. The new shop was contracted for at $23,000, and $2,700 was expended in restoring the engine and boiler-room, making a total of $75,700 as the cost of replacing the structures destroyed by fire. The loss on furniture and supplies destroyed with the building was $4,788.58. The insurance was $21,043.81.

In addition to the restored buildings there has
MINNESOTA.

Fish-Culture.—The work of the Fish Commission has been much extended the past two years, and considerable additions made to the State hatchery. The distribution among the waters of the State has been as follows:

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>1883.</th>
<th>1884.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitefish</td>
<td>4,900,000</td>
<td>4,000,000</td>
</tr>
<tr>
<td>Landlocked salmon</td>
<td>10,000</td>
<td>10,000</td>
</tr>
<tr>
<td>Lake Superior trout</td>
<td>92,000</td>
<td>167,000</td>
</tr>
<tr>
<td>Brook trout</td>
<td>147,100</td>
<td>86,000</td>
</tr>
<tr>
<td>German carp</td>
<td>4,000</td>
<td></td>
</tr>
<tr>
<td>Western trout</td>
<td></td>
<td>9,000</td>
</tr>
<tr>
<td>Totals</td>
<td>5,262,000</td>
<td>5,466,000</td>
</tr>
</tbody>
</table>

Railroads.—The total number of miles of completed road reported within the State, Dec. 1, 1882, was 8,749.18. The total number Dec. 1, 1884, was 4,162.22. The total earnings of these roads within the State was, for the year ending June 30, 1882, $18,905,198.16. The total earnings for the year ending June 30, 1884, were $23,243,466.23. The total operating expenses, which amounted to $10,221,788.69 in 1882, were $11,784,283.58 for the year ending June 30, 1884. The average earnings per mile had increased from $5,642.94 to $5,924.77 in two years; while the average operating expenses had been reduced from $5,066.90 to $4,004.28. The taxes paid to the State on the gross earnings during the past year were $645,738.18.

Election.—The following was the vote cast for Presidential Electors on the 4th of November: Republican, 111,685; Democratic, 70,666; Greenback, 8,683; Prohibition, 4,684. Judge Berry was re-elected, and five Republican Congressmen were chosen. The Legislature of 1885 is constituted as follows: Senate, 80 Republicans and 17 Democrats; House, 70 Republicans and 33 Democrats.

Gold discoveries.—Toward the close of the year discoveries of gold in Lake and Cook counties were reported. In a few weeks large quantities of gold were taken up.

MICHIGAN. See Nervous Diseases.

MISSISSIPPI.

State Government.—The following were the State officers during the year: Governor, Robert Lowrey, Democrat; Lieutenant-Governor, G. D. Shands; Secretary of State, Henry C. Meyers; Treasurer, W. L. Hemingway; Auditor, Sylvanus Gwin; Attorney-General, Thomas C. Catchings; Superintendent of Public Education, J. Argyle Smith; Commissioner of Agriculture and Immigration, E. G. Wall. Judiciary, Supreme Court: Chief Justice, J. A. P. Campbell; Associate Justices, H. H. Chalmers and Timothy E. Cooper.

Legislative Session.—The Legislature met on the 8th of January and adjourned on the 10th of March. Among the acts passed are the following:

- A number prohibiting the sale of intoxicating liquors in various localities; to consolidate the Eleventh and Twelfth Circuit and Chancery Court districts; concerning railroad crossings (regulating the crossing of tracks by the lines of other companies); to prevent the unlawful obstruction of water-courses; to amend the laws regulating insurance deposits; to incorporate


the Board of Levee Commissioners for the Yazoo Mississippi Delta; authorizing the survey and sale of certain marsh-lands belonging to the State of Mississippi, on the banks of the East and West Passesoula and Pearl rivers, and other streams; to secure the faithful collection of delinquent personal taxes; to require the trustees of certain institutions to whom money is appropriated to make biennial reports to the Legislature of the manner in which said money is expended; to provide for the appointment of guardians of habitual drunkards, and for their confinement in the Lunatic Asylum; to create the Exposition Bureau and to make an appropriation therefor (New Orleans Exposition); to regulate the sale of swamp-lands; to protect the Passcagoula and Dog rivers and the harbor of Passcagoula Bay; to prevent the sale or exhibition of obscene and immoral literature, pictures, models, casts, etc.; to change the twenty-ninth senatorial district into two senatorial districts.

The principal provisions of an act for the better protection of contracts between landlord and tenant, employer and employed, seem worthy of quotation, to wit:

Any person who dooys, entices, or persuades any apprentice, child, servant, or tenant to leave the service or employment of his or her parent, guardian, or employer, must on conviction be fined not less than ten nor more than fifty dollars.

Any person who knowingly interfere with, hires, employs, entices, or induces to leave the service or employment of another, any tenant, laborer, or employed, who has stipulated or contracted in writing, or in the presence of two or more credible witnesses, not members of family of either contracting party, to serve for any given number of days, weeks, months, or for one year, before the expiration of the term stipulated or contracted for, such contract being in force and binding upon the parties, shall be deemed guilty of a misdemeanor, and on conviction must be fined in such sum not less than twenty-five nor more than one hundred dollars, as the court or jury trying the same may assess, and in no case less than double the amount of the injury sustained by the party whom such laborer, employed, or tenant was induced to leave.

When any laborer, tenant, apprentice, or employee, having stipulated or contracted as provided in the preceding sections, is afterward found in the service or employment of another before the termination of such contract, that fact shall be held prima facie evidence that such person is guilty of a violation of those sections, and if he fails to forthwith discharge such apprentice, laborer, tenant, or employee after being notified and informed of such former contract and employment.

If any employer having contracted in writing with any employee to furnish him lands or supplies for himself and family, or knowingly, willfully, designedly, or with intent to defraud such employer discharge such employee without good and sufficient cause, or refuse to furnish him according to contract or to carry out his contract, he shall be liable to said employee in such reasonable damages as he may sustain in any court having jurisdiction.

When at any time any employer or tenant shall leave his other employer or landlord before the expiration of any contract, the said employer or tenant shall forfeit all wages on crops due or belonging to him or her; and furthermore said employer shall have a lien on all wages or crops of said employer or tenant earned or grown by him or her during the time of original contract until all indebtedness justly due for advances, supplies, or money made under contract aforesaid is paid, and this lien shall be prior to all other liens except public dues: Provided, That where the employer or tenant has created equities with the consent of the landlord or employer to any person for supplies to raise said crop, they shall not be forfeited by any abandonment of the tenant or employer.

An act was passed making it a misdemeanor for any legislative, executive, judicial, or ministerial officer in the State, or for any person holding an office or place of honor, profit, or trust under the laws of the State, to travel upon any railroad in the State without paying absolutely, and without any guise, trick, subterfuge, or evasion whatsoever, the same fare required of passengers generally.

By another act, "an Industrial Institute and College is established, for the education of white girls in the arts and sciences, which shall be known as the Mississippi Industrial Institute and College for the Education of White Girls of the State of Mississippi in the Arts and Sciences, at which such girls may acquire a thorough normal-school education, together with a knowledge of kindergarten instruction, also a knowledge of telegraphy, stenography, and photography; also a knowledge of drawing, painting, designing, and engraving in their industrial application; also a knowledge of fancy, practical, and general needle-work; and, also, a knowledge of bookkeeping." The sum of $20,000 was appropriated for 1884, and the like sum for 1885.

Railroad Supervision.—The subject of railroad supervision was brought up at the beginning of the session, and a bill was early passed through both houses, which, however, encountered the Governor's veto. It was then modified to meet the Governor's objections, and became a law under the title of "An act to provide for the regulation of freight and passenger rates on railroads in this State, and to create a commission to supervise the same." It enacts—

That the track of every railroad in this State is a public highway over which all persons have equal rights of transportation for passengers and freight, on the payment of just compensation to the owner of the railroad for such transportation; and any person, firm, company, or corporation engaged in transporting passengers or freight by any railroad in this State, who shall either refuse or demand more than the rate specified in any bill of lading issued by such person or corporation, or who for his or its advantage, or for the advantage of any connecting line, or for any person or locality, shall make any discrimination in transportation against any other locality, shall be guilty of extortion.

Persons and corporations committing such extortion are declared guilty of a misdemeanor, and may be required to pay double damages at the suit of an aggrieved party. A Railroad Commission of three members is constituted, to be appointed by the Governor with the consent of the Senate for two years, and to serve at a salary of $2,500 per annum. The commissioners are given large powers of supervision over the railroads of the State, including the regulation and fixing of charges for transportation.

Soon after the adjournment of the Legislature, steps were taken to test the constitutionality of the act. A bill was filed in the Circuit Court of the United States for the Southern District of Mississippi, by the Illinois Central
The Democratic State Convention met for a similar purpose, in the same city, on the 11th of June. The vote for Presidential Electors on the 4th of November was officially declared as follows: Democratic, 76,510; Republican, 48,509. Seven Democratic Congressmen were declared elected.

Statistics.—According to the Auditor’s report for 1883, the total acreage of taxable real estate in Mississippi was 29,955,558; valuation thereof, $85,596,178; State tax thereon, $218,996.45. From which it would appear that the average valuation of real estate in Mississippi is only a fraction over three dollars an acre.

The disbursements by Auditor’s warrants for 1883, under forty different headings, amounted to $745,966.24.

The total privilege taxes collected by the Auditor of Public Account, for the year 1883, was $108,181.38. Warren county was the largest contributor, $8,631.35; Quitman the smallest, $2,450.

The total amount paid into the State Treasury in 1884, on account of licenses to retail liquors, is $168,780.22. Washington county was the largest contributor, $14,200; Warren the next, $11,481.67; Hinds next, $9,100. The smallest contributors were Franklin, Pontotoc, Simpson, and Union, $200 each.

The Commissioner of Immigration and Agriculture reported, at the beginning of the year, that the aggregate of railroad-track laid in Mississippi, and in running order, was about 476 miles, and the total miles that would be completed by July 1, 1884, was 616 miles.

Education.—Under date of Jan. 28, 1884, the State Superintendent of Public Education, reporting for 1883 and 1884, says:

Public education is unquestionably growing in the estimation of the people, as evinced in the willingness of the masses to pay the school-tax, the desire to extend the school term beyond the constitutional limit of four months, and the desire to employ competent teachers. To render more effective the workings of the public-school system, I have to suggest, in the first place, an additional increase in the funds for the maintenance of the public schools. And to this end the poll-tax should be increased from one to two dollars per capita. Then I would recommend that the restriction upon boards of supervisors to levy as a maximum not more than three mills, be removed, and they be allowed to levy such tax as they may deem proper. Three mills on the dollar should, in my opinion, be the minimum levy. The public schools can not be run successfully for less.

One of the greatest obstacles to the advancement of our school interests is the indifference and inefficiency of our local trustees. It is a subject of regret that men, in many instances, are chosen for these responsible positions who are entirely unfit or unworthy for the place. To make the office of trustee more desirable, and at the same time exclude incompetents, I would suggest that they be exempt from road duty; and that none be eligible who can not read and write the English language, as many now occupying the position can not.

It is with regret that I have to state that Mississippi, in my opinion, is behind most of her sister States in the qualification and efficiency of her public-school teachers. And this I attribute to the absence of schools devoted to the teaching and training of teachers. Mississippi is the only State in the Union where nor-
ormal schools are not established for qualifying white teachers for our public schools. We have a normal school for the education and training of colored teachers at Holly Springs, and I am of the opinion that it is doing good work. But we have not a school in the State, supported wholly or in part by the State, for the advancement of our white teachers.

The following are the annual statistics of the schools for the years 1882 and 1883, showing all the important facts and results as to attendance, number of teachers employed, of both races, expenses, etc.:

<table>
<thead>
<tr>
<th></th>
<th>1882</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>of edible</td>
<td>444,101</td>
<td>447,571</td>
</tr>
<tr>
<td>colored</td>
<td>180,009</td>
<td>180,009</td>
</tr>
<tr>
<td>White</td>
<td>250,100</td>
<td>247,478</td>
</tr>
<tr>
<td>Average</td>
<td>172,299</td>
<td>169,728</td>
</tr>
<tr>
<td>monthly</td>
<td>95,965</td>
<td>93,516</td>
</tr>
<tr>
<td>enrollment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>214,061</td>
<td>255,985</td>
</tr>
<tr>
<td>in schools</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>194,451</td>
<td>225,599</td>
</tr>
<tr>
<td>Average</td>
<td>190,900</td>
<td>141,263</td>
</tr>
<tr>
<td>daily</td>
<td>130,116</td>
<td>124,408</td>
</tr>
<tr>
<td>attendance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>61,289</td>
<td>60,348</td>
</tr>
<tr>
<td>colored</td>
<td>72,518</td>
<td>83,517</td>
</tr>
<tr>
<td>Number</td>
<td>9,108</td>
<td>13,997</td>
</tr>
<tr>
<td>of teachers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>2,910</td>
<td>3,004</td>
</tr>
<tr>
<td>colored</td>
<td>2,172</td>
<td>2,189</td>
</tr>
<tr>
<td>Total</td>
<td>650,563</td>
<td>906,573</td>
</tr>
<tr>
<td>receipts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>590,944</td>
<td>790,914</td>
</tr>
<tr>
<td>expenditures</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The average salary of teachers is about $30 a month, and the average length of the school year is about two and a half months, except in the principal towns, where it is five months.

Missouri. State Government.—The following were the State officers during the year: Governor, Thomas T. Crittenden, Democrat; Lieutenant-Governor, Robert A. Campbell; Secretary of State, Michael K. McGrath; Treasurer, Philip E. Chappell; Auditor, John Walker; Attorney-General, Daniel H. McIntyre; Superintendent of Public Schools, William E. Colemen; Register of Lands, Robert McCulloch; Superintendent of Insurance Department, John F. Williams; Commissioner of Labor Statistics, Henry A. Newman; Judicial, Supreme Court: Chief Justicew, Warwick Hough; Associate Justices, John W. Henry, Elijah H. Norton, Robert D. Ray, and T. A. Shearwater.

Finances.—The following tables show the increase in valuation in real and personal property. Under the law of Missouri, the assessments upon all taxable property, except merchandise, are made between the first day of June and the first day of January, and the valuation is placed upon it on the first day of June. The taxes upon this assessment are collected in the following autumn, more than a year after the assessment is made:

<table>
<thead>
<tr>
<th></th>
<th>1881</th>
<th>1882</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real estate</td>
<td>$404,164,425 00</td>
<td>$432,567,526 00</td>
</tr>
<tr>
<td>Personal property</td>
<td>108,200,830 00</td>
<td>110,918,276 00</td>
</tr>
<tr>
<td>Bank stocks and bonds</td>
<td>80,800,739 90</td>
<td>81,778,309 46</td>
</tr>
<tr>
<td>Telegraph companies</td>
<td>94,319 90</td>
<td>152,725 40</td>
</tr>
<tr>
<td>Bridges</td>
<td>1,500,000 00</td>
<td>1,910,000 00</td>
</tr>
<tr>
<td>Total</td>
<td>$501,732,363 75</td>
<td>$503,269,242 90</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KIND OF PROPERTY</th>
<th>Valuation for taxes of 1882</th>
<th>Valuation for taxes of 1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessed valuation of real estate</td>
<td>$445,144,450 00</td>
<td>$464,700,000 00</td>
</tr>
<tr>
<td>Assessed valuation of personal property</td>
<td>173,560,191 00</td>
<td>187,146,071 00</td>
</tr>
<tr>
<td>Assessed valuation of railroad property</td>
<td>26,871,905 70</td>
<td>29,990,644 00</td>
</tr>
<tr>
<td>Assessed valuation of bridge property</td>
<td>2,435,000 00</td>
<td>2,500,000 00</td>
</tr>
<tr>
<td>Assessed valuation of telegraph property</td>
<td>478,818 89</td>
<td>413,284 00</td>
</tr>
</tbody>
</table>

BONDED DEBT, JANUARY 1, 1883.

<table>
<thead>
<tr>
<th>Item</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>State bonds outstanding</td>
<td>$11,908,000</td>
</tr>
<tr>
<td>School-fund certificates</td>
<td>2,981,000</td>
</tr>
<tr>
<td>University certificates</td>
<td>500,000</td>
</tr>
<tr>
<td>Total interest-bearing debt Jan. 1, 1883</td>
<td>$14,389,000</td>
</tr>
</tbody>
</table>

The annual interest on the bonded debt, as it existed Jan. 1, 1883, amounted to $1,018,680. As it now exists, the annual interest amounts to $910,490. The annual interest on the bonded debt is $708,150. On the certificates in the school and seminary funds the annual interest amounts to $302,910.

Under the Constitution, the rate of State tax can not exceed forty cents on the $100 valuation. Section 8 of Article X of the Constitution reads as follows: "The State tax on property, exclusive of the tax necessary to pay the bonded debt of the State, shall not exceed twenty cents on the hundred dollars' valuation, and whenever the taxable property of the State shall amount to $900,000,000, the rate shall not exceed fifteen cents." If," says the Governor, "the large number of bonds, notes, and other evidences of debt, now held in concealment within and without this State by its citizens, were given in to the assessment, that amount would be largely exceeded."

The following table shows the receipts from all sources, with disbursements, transfers, and balances for two years ending Dec. 31, 1884:

<table>
<thead>
<tr>
<th>Item</th>
<th>1883</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 1, 1883. Balance</td>
<td>$1,018,680</td>
<td>$1,040,468</td>
</tr>
<tr>
<td>Receipts and transfers, 1883</td>
<td>4,056,121</td>
<td>4,456,528</td>
</tr>
<tr>
<td>Total</td>
<td>$4,456,121</td>
<td>4,456,528</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>1883</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 1, 1884, balance</td>
<td>$1,018,680</td>
<td>$1,040,468</td>
</tr>
<tr>
<td>Receipts and transfers, 1884</td>
<td>4,056,121</td>
<td>4,456,528</td>
</tr>
<tr>
<td>Total</td>
<td>$4,456,121</td>
<td>4,456,528</td>
</tr>
</tbody>
</table>
right forward. ... $1,012,889 93
1 transfers, 1884, 4,500,043 71

$5,812,871 09
6 and transfers, 1884, 4,393,723 19
Jan. 1, 1885, $1,418,056 97

cference to the bonded debt, the governor, in his message to the Legislature, says:

eral Assembly must provide for the pay-

ing of the following portions, which make the Thirty-fourth General Assembly:

- $3,000
- 2,120,000
- 3,720,000
- 5,000,000

ill be in the Treasury on Jan. 1, 1885, $1,-

of this sum $1,200,000 can be safely used

reduction of the debt, leaving upon that 
an existing debt of $882,000 to be provided 
and 1886, 1 think the incoming revenue of 
885 will meet that sum, leaving only $1 
debt maturing in 1887 to be provided for.

- controversy with the Hannibal and 

1 Railroad, he says:

ion to the $3,000,000 originally paid by 

by the company to the State, which was claimed by 

be all that was due to the State on the 

Hannibal and St. Joseph Railroad and 

litigation has so far resulted in a judgment 
the State for $436,049.27 more, $90,000 of 

ally been paid into the State Treasury, 

ence of which to wit, $475,049.27, the 

lien upon the property of the railroad. 

he judgment of the United States Circuit 

be affirmed by the Supreme Court of States.

ned indebtedness of counties is $11,- 

5; of townships, $3,291,600; of cities 

populated towns, $29,404,926.25, in 

2,126,000 for St. Louis.

Since May 1, 1885, there have 

ected 236 miles of railroad in the 

3 miles in 1885 and 123 miles in 1884 

4,738 miles of railroad now in op-

Missouri.

gs for 1885 $29,754,384 95
gs for 1884 (estimated) 29,000,000 00
ge per mile for 1885 6,380 00
ge per mile for 1884 (estimated) 6,181 00
chargeable to number of miles up 
s $80 00
at 10, per mile 28,429 00
in debt Jan. 1, 1885 $106,390,051 00
per mile 34,106 00

tary. — The earnings and receipts for 

1884 (December, 1884, estimated 8,927.89, and there was expended for 

ace during those years (December, 

ated $238,486.10, leaving $28,411. 

he credit side of the prison, which 

ed upon it. The last Legislature 

ed $105,000 more than certain build-

ths that were destroyed by fire 

, and to extend the walls of the 

ry and do certain other specific work 

the bill. These demands exhausted 

prison before the work was com-

sidered the direction of the prison in-

spectors the warden expended $18,548.30 for 

materials purchased and used in the construc-

tion of the buildings and wall. In addition 

to this sum, he expended $14,000 for brick, 

rock, labor, etc. If credit is given for those 

amounts, there is a surplus of $40,000 in 

favor of the prison, which surplus accrued 

during the year 1884. The new buildings 

have been completed.

The following tables show the number of 

prisoners confined in the Penitentiary during the 

years 1885–86:

Prisoners on hand Dec. 31, 1885 1,348
Prisoners received in 1885 600
Prisoners received in 1884 600

Total 2,548
Prisoners discharged in 1885 225
Prisoners discharged in 1884 1,090

On hand Dec. 31, 1884 1,838

In 1881 the daily average was 1,205; in 

1882 the daily average was 1,517, showing an 

increase of 118 in 1882 over 1881, 125 in 1883 

over 1882, and 95 more in 1884 than 1883. 

The daily cost per capita for maintenance for 

1888–84 was 22.8 cents; guard, 22.1 cents; 

total, 81.9 cents.

Public Schools. — The amounts to the credit of the 

permanent State school fund are:

Certificate at 5 per cent. $2,900,000 00
Certificate at 6 per cent. 226,000 00
In treasury 1,801 49

Total public-school fund $3,452,801 49
University or seminary fund 600,000 00

Total 4,052,801 49
County public-school fund $1,894,185 98
Township public-school fund $247,289 71
Special public-school fund 130,487 87
Fines, penalties, forfeitures, etc. 150,023 96

Total school funds of Missouri $6,067,606 60

The statistics reported by county clerks for the 

year ending June 30, 1884, are:

<table>
<thead>
<tr>
<th></th>
<th>Male.</th>
<th>Female</th>
<th>Total.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of white children</td>
<td>879,309</td>
<td>861,097</td>
<td>1,740,406</td>
</tr>
<tr>
<td>Number of colored children of school age</td>
<td>29,720</td>
<td>32,070</td>
<td>61,790</td>
</tr>
<tr>
<td>Total</td>
<td>909,029</td>
<td>893,167</td>
<td>1,802,196</td>
</tr>
</tbody>
</table>

The statistics reported by county commissioners include these:

| Number of white children of school age | 784,874 |
| Number of colored children enrolled | 501,821 |
| Number of colored children received | 44,054 |
| Average attendance | 45,319 |
| Number of white children enrolled | 57,181 |
| Number of teachers | 32,070 |
| Average salary of teachers | $47.75 |

In the State University there were during the year ending June 1884, 563 students in attendance and 65 graduates. Up to December, 1884, about 500 entered. The average age is nineteen years and ten months, and it ranges from fifteen to thirty-five. Admissions are by examinations, regardless of age, and it is seldom that any one as young as fifteen can pass. The university is at Columbia, and has an agricultural and mechanical department. The School of Mines, at Rolla, is connected with it.
The normal schools are at Kirksville, Warrensburg, Cape Girardeau, and Jefferson City—the last, Lincoln Institute, is for the education of colored teachers. All are supported at the expense of the State. The students all pay an "incidental fee," except in the normal department of Lincoln Institute, where they are admitted free.

Insane Asylums.—Both the Fulton and St. Joseph asylums are now overcrowded. Each of them has 100 more patients than it can properly care for. In addition to this there are about 2,000 insane in the State outside of asylums, confined in jails and poor-houses, or not cared for at all. The capacity of the several asylums is as follows: St. Louis, 300; Fulton, 450; St. Joseph, 250; total, 1,000. They are attended as follows: St. Louis, 900; Fulton, 550; St. Joseph, 270; total, 1,720.

Deaf and Dumb Asylum.—In the Deaf and Dumb Institution at Fulton, 284 pupils have been taught within the past two years. There are 395 now in attendance. The building has been greatly enlarged and improved.

School for the Blind.—The economy of the management is shown by the fact that an unexpended balance of $11,218.44 remains of the amount appropriated by the last General Assembly. An appropriation of $52,000 is asked for the years 1885-'86 as follows:

For maintenance: $50,000
For salaries, employees, etc.: $2,000

This is $5,000 less than the sum appropriated for the last two years. During the years 1883-'84, 147 pupils were in attendance, which is an increase of 34 over the years 1881-'82.

Institutions recommended.—The Governor recommends the establishment of an Inebriate Asylum and a Reform-School. He also recommends legislation relative to insane criminals.

Temperance.—The Governor suggests that the "Downing" law should either be repealed or so amended as to make it applicable in its provisions to every part of the State alike. This law has been, in part, made inoperative in the city of St. Louis, by the presumed existence and operation of the act of 1857, so declared by a court, and the authorities of that city acquiesced in the ruling. He thinks the Downing law has already accomplished much good, and can be made much more effective with certain amendments. In 1880 there were 3,043 licensed dram shops, 127 wine and beer saloons, and 90 drug-stores retailing liquor under the then existing license. The State license, together with the ad-valorem tax on the liquor sold by the saloons, amounted to $187,916, and county license and tax to $396,970, a total of $583,886. The tipping-houses increased in number in the State between 1880 and the time this law became operative. This law has reduced the number of dram-shops within the first year of its operation from 3,601 to 3,150, a decrease of 457, or 12 per cent., and has reduced the number of places of strong drink from 3,469 to 2,115. Over c has been an increase of 90 saloons under this law. WI of the counties have been larger under this law, those of the State have been much reduced. Revenue from saloon licenses from $357,000 to $1,164,000 $806,000 within the first year alone from that source has $85,041.06 within the first year the county courts have exact license, $550, from those of trade. The maximum price

Judicial.—The Governor creation of the Supreme Court the last General Assembly, least work, fulfilling the court and the friends of the missionaries. The Supreme Court behind in its work, and I think should be continued for two the decision of the last conment, the St. Louis and Kane Appeals have jurisdiction in the meanan.

Political.—Two Democratic conventions held, one in St. Louis on for the choice of delegates to vention of the party, and the City on the 12th of August to dates for State officers and P ors. The following is the S nated: For Governor, John Lieutenant-Governor, A. P. retary, Michael K. McGrath; M. Siebert; Auditor, John W General, D. G. Boone; Land McCulloch; Railroad Com Downing; Supreme Court Jr The Republicans and Gr fusion tickets. Their nomin were the following: For las Ford; Lieutenant-Gover loff; Secretary of State, Pan Treasurer, J. C. Thompson; Sands; Attorney-General, Di G Bond; Railroad Commission

There was also a Prohibi field. The vote for President 4th of November was as foll 235,988; Republican, 202,9 2,153. For Governor, the v erative, 218,885; Fusion, 207; 10,429. The entire Demo was elected. Republican C chosen in the Fifth and Thirr Democrats in the other twel

The Legislature of 1865 cor crats and 9 opposition in th Democrats and 41 opposition Timber was the constitutional amendment judiciary was adopted by a v 144,174. The one relating to defeated by a vote of 148,762 to
Territorial Government.—The fol-
be Territorial officers during the
or, John Schuyler Crosby, suc-
hatt Carpenter; Secretary, J. S.
or, Joseph P. Woolman; Trea-
sor, Superintendent of Public
ornelius Hedges; Attorney-Gen-
H. Hunt. Judiciary, Supreme
Justice, D. S. Wade; Assistant
. Galbraith and John Coburn.
Hills.—With the exception of
n narrow-gauge railroad from
conda, on the Utah and North-
road-building in the Ter-
year. In the early spring the
discovers of the Coeur d'Alene
a rush to that portion of Idaho
ontana’s western border, and the
 outfitting points were within
killing all deductions for the de-
se who had come only for a tem-
, still there was a steady gain-
tion during 1884. In spite of
throughout the country, Mon-
d in every direction. Her cattle
to number more than 900,000,
and sheep have multiplied pro-
e mines continue to pour forth
their precious metals. Dur-
e largest smelting-works for the
upper anywhere to be found in
completed. The work of build-
opped for a day, and more sub-
se blocks, elegant and commo-
cases and churches, and private
e been erected in Montana dur-
past than in any former peri-
t list will show between fifty and
of taxable property.
 Territory,” remarks the Gov-
 to be judged by the amount of
, either for meat or for oth-
orough Montana continues to fur-
umbers cattle, horses, and sheep
ve pastures-lands of the Do-
ces to the north, and supplies
portion of the beef-cattle for
, she is, and for some time to
be, an importer rather than
stock. This must continue till
extensive pasture-ranges are
their natural average capacity.
young cows, and ewes are wor-
e in Montana than elsewhere in
It is estimated that above 100-
improved breeds of cattle have
and driven into the Territory
year, and by the 1st of De-
0,000 will have been export-
eight from Washington Territory
y car at a cost of 30 cents a
short a time that no delay is
water them. In the same
an equal advantage young cattle
brought in from the States.
iculty that our stock-growers,
particulary horse and cattle men, have thus
far had to contend with is the loss by stealing
and wanton killing of cattle by white and red
thieves. Horse-stealing had become consoli-
dated into a large and well-organized industry
in the sparsely settled northern and eastern
portions of the Territory. It became necessary
to organize and resort to extra-legal means to
suppress this dangerous element. The laws
were utterly powerless, the thieves with their
plunder would escape into the vast Indian res-
ervations, or cross the northern frontier-line
to be safe from reach before pursuit even be-
gan. There have been some applications of
bribe and lead during the year by the ‘cow-
boys,’ as our stock-herders are called, that are
to be deprecated, provided there were other
actual protection and redress at hand. Roving
bands of Indians, Crows and Blackfeet,
have during the whole season been roaming
among the thinly scattered settlements along
the Musselshell and other tributaries south of
the Missouri, pretending to be in search of
horses stolen by other Indians, but taking
horses wherever opportunity presented, and
subsisting wholly upon cattle of the settlers,
which they have killed by hundreds.”

Indian Reserves.—Alluding to the reserva-
tions, the Governor uses this language:

These vast reservations no longer afford any means
of support to the Indian in his traditional mode of
life. The large game is gone. The Indians are
in many cases driven to kill the white man’s cattle
or starve. The situation of the Piegans and Black-
feet has been most deplorable, as reported by me in
detail at different times; hundreds died from starva-
tion. The reduction of their reservations to a proper
size in alternate sections would give the means to
provide for their physical well-being and would fur-
ther provide for their education in the useful arts, so
that they might, in the course of time, become wholly
self-supporting by raising cattle, sheep, and horses,
for which their reservations are adapted.

The recent reports of the discovery of gold-mines
in the Little Rockies, an outlying spur, situated about
one hundred miles southwest from Fort Assiniboine,
and not more than fifteen miles distant from the Mis-
souri river, lying in the very heart of the great nor-
ern reservation, is attracting hundreds from all parts
of the Territory and beyond. I am of the opinion
that instead of keeping these Indians shut up on re-
ervations, which necessarily isolates them from civil-
izing influences, they should be brought into direct
contact with the modes of life of the frontier farmer
and stock-grower. I do not believe, in the present
condition of most of our tribes in the Northwest, that
the Indian should be treated as savage, but as indi-
viduals, providing each one with a homestead, which
should be inalienable for a term of not less than twen-
ty years.

Finances.—The Treasurer’s report for the year
1888 shows that in accordance with an act
approved Jan. 30, 1888, funds were transferred
from the warrant fund, and all uncalled Terri-
torial bonds, amounting to $46,000, were re-
deed and canceled on March 1, 1888, thus
extinguishing all registered indebtedness of the
Territory. Notwithstanding a large increase in
Territorial expenditures during the year,
and the transfer by the Legislative Assembly of
$75 per cent. of the former Territorial por-
tion of license revenues to the counties, there was an increase of receipts of revenue over 1882 of $17,592, and a surplus in the treas-
ury of $26,508.59 over all registered liabilities.

The expenses of 1884 exceeded the revenue by $28,558.77. This excess is partly due to the
Constitutional Convention.

$5,040 in a general warrant fund, Dec. 31, 1886, was $51,514.42; receipts, $99,131.72;
paid to redeem bonds, $45,000; for other purposes, $85,494.41; balance, Dec. 31, 1883,
$30,141.73. There were also paid from other
funds, chiefly to redeem bonds, $28,011.90.

The amount of revenue proper collected
in 1882 was $90,865.47; in 1883, $98,715.90. The surplus in the treasury over regis-
tered liabilities Jan. 1, 1883, was $14,005.90; Jan. 1, 1884, $26,508.59. The aggregate net
indebtedness of counties March 1, 1883, was
$658,974.82; March 1, 1883, $843,897.82.

The assessed value of property in 1880 was
$18,609,802; 1881, $34,040,806.30; 1882, $33,-
211,912.12; 1883, $44,699,461.26. The fol-
lowing are the items of assessment for 1882:

- Acres of land and improvements, 1,146,888.79
- $3,111,877.21; town lots and improvements, 16,887
- $4,596,478.64; horses, 9,311, $3,601.91; mules
- and assauls, 1,124, $56,657; sheep, $219,313;
- cattle, $76,611, $8,282,154; hogs, 10,087, $8,403;
- wagons and carriages, 10,412, $504,501.85; wag-
- ons and clocks, 4,516, $118,656.45; pieces of jewelry
- and plate, 77, $42,870; musical instruments, 708,
- $75,650; shares of stock, $992,250; merchandise, $3,232,830;
- capital invested in manufactures, $1,800,460; mon-
- ey and credits, $4,798,124.58; household furniture,
- $271,953; all other property, $4,494,518.02; total,
- $44,884,461.26; less reduction by Board of Equal-
- ization and widow's exemption, $136,000; total, $44,

Education.—The following is a compara-
tive statement for two years:

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>1882</th>
<th>1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of school districts</td>
<td>125</td>
<td>129</td>
</tr>
<tr>
<td>Number of schools</td>
<td>129</td>
<td>209</td>
</tr>
<tr>
<td>Number of male teachers</td>
<td>44</td>
<td>75</td>
</tr>
<tr>
<td>Number of female teachers</td>
<td>197</td>
<td>301</td>
</tr>
<tr>
<td>Whole number employed</td>
<td>226</td>
<td>226</td>
</tr>
<tr>
<td>Number of school-census children,</td>
<td></td>
<td></td>
</tr>
<tr>
<td>to 51 years of age</td>
<td>10,489</td>
<td>12,186</td>
</tr>
<tr>
<td>Number attending school</td>
<td>9,014</td>
<td>6,228</td>
</tr>
<tr>
<td>Average length of school, in days</td>
<td>70</td>
<td>70</td>
</tr>
</tbody>
</table>
| Per capita of county tax on school-
- census children | $8.89 | $8.89 |
| Average rate of tax for schools | 9.7 mills | 8.8 mills |
| Number of school-houses | 148 | 150 |

Total amount raised for schools | $104,137.64 | $129,111.94 |

Statistics.—The following statistics for 1883 are
compiled from abstracts returned by the
county assessors: Births, 967; deaths, 389
natural and 32 violent; wheat raised, 556,076
bushels, on 4,629.48 acres; rye, 2,215 bushels,
72 acres; barley, 62,589 bushels, on 2,060.40
acres; corn, 6,004 bushels, on 365 acres; oats,
2,025,592 bushels, on 55,788.40 acres; peas, 38,
415 bushels, on 1,497.40 acres; potatoes, 215,
681 bushels, on 2,909.48 acres; buckwheat, 328
bushels, on 12.40 acres; cabbage, 1,943,710
pounds, on 129 acres; rutabagas, 1,020,085
pounds, on 129.40 acres; turnips, 223,500
pounds, on 51 acres; onions, 496,380 pounds,
on 1064.40 acres; hay, 187,803 tons, on 128,733
acres; number of milch-cows, 8,377; pounds
of butter and cheese, 593,584; sheep, 984,390;
pounds of wool, 2,157,766; number of
ranches, 4,660; bushels of apples, 1,173;
gross receipts of placer-mines, $457,655.04;
number of quartz-mills, 50; gross receipts
of same, $3,864,848; grist-mills, 19, produce
182,600 sacks of flour; saw-mills, 99, turning
out 77,736,000 feet of lumber; coal-mines, 17;
yielding 78,600 tons of coal; reduction-fer-
naces, 37, producing 27,111,677 pounds of bil-
ion, valued at $3,430,805.88; land cultivated,
90,513.40 acres.

The totals of live-stock in 1883 reported to
the Commissioner of Agriculture by his sta-
tistical agent for the Territory, are as follow:

<table>
<thead>
<tr>
<th>NAME</th>
<th>Number</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horses</td>
<td>110,000</td>
<td>$2,436,873</td>
</tr>
<tr>
<td>Cattle</td>
<td>33,500</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Milch-cows</td>
<td>8,100</td>
<td>1,200,000</td>
</tr>
<tr>
<td>All other cattle</td>
<td>2,000,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Sheep</td>
<td>624,195</td>
<td>1,200,990</td>
</tr>
<tr>
<td>Swine</td>
<td>11,000</td>
<td>100,000</td>
</tr>
<tr>
<td>Total</td>
<td>1,250,910</td>
<td>$3,834,926</td>
</tr>
</tbody>
</table>

The yield of gold, silver, copper, and lead,
for the last three years, has been reported by
the Superintendent of Wells, Fargo & Co., as
follows: 1885, $8,904,000; 1886, $9,879,000;
1884, $11,862,000.

The shipments of wool in 1883 amounted to
488,225 pounds; in 1884, to 1,258,034 pounds.
Of hides, pelts, and furs, 427,000 were shipped
in 1883, and 563,313 in 1884; of cattle, 30,
418 head in 1883, and 35,500 in 1884.

Constitution.—The Constitutional Convention,
consisting of 26 Democrats, 17 Republicans,
and 5 Independents, met on the 14th of Jan-
uary and adjourned on the 9th of February.
It framed a Constitution, which, on the 4th of
November, was ratified by a popular vote
of 15,506 against 4,366. Provision was made
by the convention for the submission of the
Constitution when adopted to Congress, and for
asking the admission of the Territory as a
State under it. The prominent features of this
instrument are given below:

It guarantees perfect freedom and toleration,
without discrimination on account of religion, but
she does not extend to or include the practice of poly-
theism. It was deemed prudent to leave no room
for misconstruction upon this point.

The present grand-jury system is retained, with
the modification that it shall consist of twelve
men, nine of whom may find a "true bill." The right
reserved to the Legislature to abolish the grand-
jury system. Two thirds of a jury may render a verdict
in civil causes; in civil causes and misdemeanors
the jury may consist of less than twelve.

State Senators are elected for four years.
Representatives for two years, and provision has
been made that one half the Senate shall be chosen biennially.
Seven sessions are provided for; hence the limitation of four
days, in all sessions after the first, which shall not ex-
ceed sixty days. No special law can ever be passed.
The article on public indebtedness commits the State to a policy of financing its public works and schools through taxation, a system that has been adopted in other states. The State is free from the burden of incurring debt for public purposes, and the tax laws have been so framed as to prevent the accumulation of debt.

The Constitution makes provision for the public schools, and the Legislature is given power to provide for their support. The Legislature is also given power to make provision for the support of public institutions for the education of the poor, the insane, the feeble-minded, and the dependent children of the State. The Legislature is given power to provide for the support of public libraries, museums, and other public institutions for the promotion of education and the improvement of the condition of the people.

The Constitution also makes provision for the protection of the rights of labor. The Legislature is given power to prohibit the employment of children under the age of thirteen years in certain occupations, and to regulate the working hours of laborers in certain industries. The Legislature is also given power to provide for the protection of the workingman in his contracts and agreements, and to prohibit the employment of children in certain occupations.

The provisions of the Constitution have been enforced by the courts, and the Legislature has made numerous amendments to the Constitution, and has passed many laws for the protection of the rights of labor.

The Constitution of the State of Montana is a model of the best that has been devised, and it has been a source of great benefit to the people of the State.
crats in the Council, and 15 Republicans and 9 Democrats in the House.

Establishment of Territory.—The following is a list of the counties and county-seats:

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>COUNTY-SEAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beaverhead</td>
<td>Dillon</td>
</tr>
<tr>
<td>Choteau</td>
<td>Fort Benton</td>
</tr>
<tr>
<td>Coster</td>
<td>Miles City</td>
</tr>
<tr>
<td>Dawson</td>
<td>Glendive</td>
</tr>
<tr>
<td>Deer Lodge</td>
<td>Deer Lodge</td>
</tr>
<tr>
<td>Gallatin</td>
<td>Roseman</td>
</tr>
<tr>
<td>Jefferson</td>
<td>Boulder Valley</td>
</tr>
<tr>
<td>Lewis and Clark</td>
<td>Helena</td>
</tr>
<tr>
<td>Madison</td>
<td>Virginia City</td>
</tr>
<tr>
<td>Meagher</td>
<td>White Sulphur Springs</td>
</tr>
<tr>
<td>Missoula</td>
<td>Missoula</td>
</tr>
<tr>
<td>Butte</td>
<td>Brow</td>
</tr>
<tr>
<td>Yellowstone</td>
<td>Billings</td>
</tr>
</tbody>
</table>

The Territory.—Section 2 of the charter of the Northern Pacific Railroad Company is as follows:

The right of way through the public lands be and the same is hereby granted to said Northern Pacific Railroad Company, its successors and assigns, for the construction of a railroad and telegraph, as proposed, and the right, power, and authority hereby given to said corporation to take from the public lands by agreement to the line of said road, material of earth, stone, timber, and so forth, for the construction thereof. Said right is granted to said railroad, to the extent of two hundred feet in width on each side of said railroad, where it may pass through the public domain, including all necessary ground for station buildings, workshops, depots, machine-shops, switch- es, sidetracks, turn-tables, and water-stations, and the right of way shall be exempt from taxation within the Territories of the United States.

The construction given to the foregoing provision of the act of Congress by the best lawyers is that the right of way of two hundred feet on each side, with necessary depot-grounds, etc., was a grant, and that all buildings and fixtures of every kind thereon attached to the realty, and are exempt from taxation. This question arose within a few months after the railroad entered the limits of Montana, in the case of the Northern Pacific Railroad Company against Willis W. Corliss, Treasurer of Cass County, which was decided by the Supreme Court of the Territory, at the January term, 1884. In that decision the Supreme Court, in effect, decided that none of the property of the Northern Pacific Railroad Company, its right of way, or anything attached thereto, is taxable, or, in other words, the only property of the railroad company that is, under its charter, taxable within Montana, is the personal property that may come to the knowledge of the assessor; that the right of way, including lands for necessary depots, machine-shops, etc., also station buildings, workshops, switches, sidetracks, turn-tables, and water-stations, is exempt from taxation within the Territory of Montana. It is the opinion of some of the ablest lawyers of the Territory that, when Montana becomes a State, the property of the Northern Pacific Railroad Company can be taxed like the property of an individual.

Montenegro (Černagora, “Black Mountain”), a principality in eastern Europe. The government is an absolute monarchy. The legislative and executive powers, and the control of the revenue, remain practically in the hands of the Prince, though organic statutes of 1852, 1855, and 1879 introduced the representative principle in the form of a legislative body, called the State Council, of eight members, one half elected by the male inhabitants who bear arms or have done military service. The throne is hereditary by male primogeniture in the family of Petrovich Njejos, who liberated the country from the Turks, and was proclaimed Vladika, or Prince-Bishop, in 1697. Danilo I, who succeeded his uncle, Prince Peter, the celebrated poet and reformer, in 1851, abandoned the title of Vladika, and assumed that of Hospodar. He was assassinated, Aug. 18, 1860, and was succeeded by Nicholas I, the present reigning Prince. The inhabitants of Montenegro are divided into forty tribes, each governed by elected elders and a chief, called the Knjaz, who acts as judge, and, in time of war, is the military commander. By the administrative statute of 1879, the country was divided into eighty districts and five military commands. There is no standing army, except the Prince’s body-guard of one hundred men; but in case of war all Montenegrians are soldiers from the time when they can first bear arms until they have no more strength.

The Ministry.—The Ministry of Justice was vacant in 1884. The Minister of Foreign Affairs is S. Radonich; the Minister of the Interior, B. Petrovich; the Minister of War, J. Pamenatz; the Minister of Education, the Metropolitan Monsigneur Ljubichia. The Director of Finance, who does not sit in the Council of Ministers, is M. Matavich. The Council of State, composed of eight members, is presided over by Petrovich Njejos.

Area and Population.—The area of the principality is about 8,470 square miles. The population is official at 128,000 souls.

The exports are estimated at 2,000,000 florins. The revenue is about 445,000 florins of which 125,000 come from direct taxes, 200,000 from the salt monopoly, and 100,000 from duties on spirits and tobacco. The Prince has a civil list of 9,000 ducats.

Political and Social Conditions.—Various improvements, carried out under the paternal direction of the ruler, indicate steady progress in the little principality. The towns of Nikisch and Podgoritza have been rebuilt. A railroad from Plovdiv to Lake Scutari is projected, and the plan is entertained of extending this, the first Montenegrian railroad, which will possess a certain strategic importance, through to Nikisch. The regulation of the Turkish boundary has made no progress, notwithstanding the friendly manifestations of the Sultan. The Turkish commissioners raised difficulties at every stop, and interrupted the work, to wait for the answer of the Constantinople authorities. The Prince desires the powers to appoint a European delimitation
MONTENEGRO.

The re-establishment of cordial relations between Austria and Russia was reflected in a change in the attitude of Montenegro toward Austria, and in humble apologies in a journal at Cetinje for breaches of national comity during the Herzegovinian insurrection. Energetic measures were taken to capture insurgents from Bosnia and Herzegovina. They were kept under severe discipline in the district of Dulcigno, as far as possible from the scene of their former activities. A proclamation was issued, warning them that if any disturbances occurred on the Neigrin border, or in the lands administered by the Austro-Hungarian Government, they would be delivered up to the Austro-Hungarian authorities. Many of the refugees from the previous cholera were brought to Cattaro, whence they returned to their deserted farms. There they prosecuted before the proper tribunal, subjected to light sentences, after which they were allowed to return to their agricultural operations on their old estates. One consequence of the insurrection in Bosnia and Herzegovina was the establishment of a new fortification of the Austrian frontier.

Gen. von Salis Soglio, the chief of the Austrian engineer service at that time, was, with the construction of a line of forts, which would make an attack by the Neigrin side impossible. While the forts were being built, Montenegro protested and asked to be granted a veto from the European powers on the construction of a line of forts, which would make an attack by the Neigrin side impossible. The construction of a line of forts, which would make an attack by the Neigrin side impossible.

The Moravians.

The Triennial Synod of the Northern District of the American Province of the Moravian Church met at Lititz, Pa., May 21. Bishop Edmund de Schweinitz was elected to preside. A salutatory letter from the Synod's Department at Berthelsdorf, Germany, and a letter from the Provincial Elders' Conference of the British Province, were read, and suitable replies were directed to be returned to them. The report of the Provincial Elders' Conference showed that the churches had enjoyed an increase of 418 communicants and 227 members, notwithstanding the cessation of the entire church of 483 members, and that the total number of communicants was 5,840, and of members 14,588. Adding the churches of the Southern District, the whole number of communicants in the American Province was 10,032, and of members, 16,822. The financial condition of the Province had been much improved under a new system adopted by the previous Synod. The scheme for changing the titles in church property from fee-simple ones to titles in trust was being carried out.

A legacy had been left for the Theological Seminary by Mrs. E. A. Yoder, from which, by the plan of settlement that had been adopted, the sum of $25,399 would eventually be realized. The total amount of the Permanent Church Extension fund was returned at $19,676. The Board of Church Extension had obtained a decree of incorporation. The Board of Home Missions reported upon the condition of twenty-nine missions, with which were connected 3,977 members, 1,776 of whom were communicants. The Committee on the Bohemian Mission reported that the church of that mission had been recognized by the Austrian Government, and that the obstacle in the way of its progress had been thus removed. The principal centers of the mission were at Pecka, Steinfurt, and Landskron. A branch of the mission had been established in the Russian province of Volhynia. Three missionaries were employed, with three evangelists, two assistant missioners, one teacher, and four auxiliaries, and there were connected with the mission four congregations, four stated preaching-places, five chapels, an orphan-house with twenty-seven children, an industry (button-factory) for poor women, and 288 members. The churches of the Northern and Southern Districts of the American Province had contributed to the support of this mission, during three years, $4,107. The commission that had been appointed by the Synod of 1861 to consummate a union with the Southern District reported that the effort had failed. It appeared that a majority of the Southern ministers and churches were opposed to the union. Petitions were ordered inserted in the Litany of worship for deliverance from needless perplexity and from the unhappy desire of becoming great. A gift by Mr. William G. Malin, of a valuable library of Moravian literature, was acknowledged, with the thanks of the Synod.
The Appalachian Mountain Club—The exploration of the mountains of the United States is promoted by the Appalachian Mountain Club, which furnishes in its corporate and field meetings and in its semi-annual journal, "Appalachia," means through which mountain-climbers may communicate their results to the public. The earliest mountain club in the United States whose history is recorded was the Alpine Club of Williamstown, Mass., which had nine members at its organization, and enrolled twenty-four members as its greatest number. It made excursions during the next three years to the mountain-regions near Williamstown and other places in New England, including one to the White mountains. Formal records of its excursions ceased to be kept after 1835, and the majority of its members have removed from Williamstown, although occasional reunions are still held there. The Appalachian Mountain Club was formed in February, 1876, by the association of 39 members, and was incorporated in March, 1878, when it had 199 members, of whom 150 became corporate members. Till Jan. 1, 1884, 790 persons had been enrolled as corporate members of the club, of whom 579 still continued to be members, and 51 other persons had been enrolled as non-corporate members. This club is interested in mountain exploration everywhere, and contemplates, as its membership, is enlarged and extended, including all the mountain-regions of the United States within its field of work. As yet, most of its members being residents of New England, or summer visitors to the New England States, most of its work has been accomplished in the White mountains and the Alpine regions of the States adjacent to New Hampshire. A list of altitudes in New Hampshire was published in 1880, and a "Table of the highest Peaks in White Mountains" was begun, which has been continued and extended from time to time. This list included summits concerning which no published accounts existed at the time of the formation of the club, the names of which were wholly unexplored, and some unnamed. At the end of 1882, of the forty-seven mountains recorded on it, all but thirteen had been explored and described. The list has since then been further reduced considerably, but other less prominent mountains have been added to it, leaving still abundant work to be done. In connection with this work may be mentioned the map and list of altitudes of the Catskill mountains published by Prof. Guyot in 1880. In addition to the mountain exploration, the Appalachian Club has encouraged the making of roads, the cutting of paths, and the planting of landmarks in the White mountains and their gorges for the aid of excursionists, thus greatly enlarging the field of adventure accessible to ordinary tourists. Much of this work has been done at individual expense and gratuitously, but during the first eight years of its existence the Appalachian club, in a total expenditure of $5,880, devoted $488 to purposes of "improvement and exploration." In 1881 the attention of the club was called to the condition of the "Old Man of the Mountain," the forehead of which was believed to be in danger of injury from frost, and provisions were made to have everything feasible done to protect it. At the October meeting in 1882, Major Jedediah Hotchkiss gave an address on the Appalachian mountains of the Virginias, explaining in detail the profile of the country from the sea to the mountains, and showing that the essential formation of all parts of the Appalachian system might be found in Virginia. He referred to the parallelism and great length of the ranges there, as compared with the mountains of New England, and, describing the Shenandoah valley, he explained the effect of its configuration in producing certain incidents in the war of the rebellion. At the June meeting in 1883, a report was presented, calling attention to the various kinds of aid that could be rendered by those members of the club who have had no training in scientific work; showing that in hydrography, especially, much remained to be done, and that members could render valuable assistance by making notes of their explorations, by sketching ridges and streams, and by criticizing and correcting existing maps. The attention of the club was called in 1884, by Prof. Pickering, to a statement that had been made by Prof. Cleveland Abbe, of the United States Signal Service, that the rainfall on the summit of Mount Washington was about twice the total fall at adjacent points in New England, and that observation at different heights on the side of the mountain showed that the amounts varied as the heights. In order to further the study of the "Effect of Mountains on Rainfall," it was desired to obtain regular observations at different points in the mountain regions; and it was suggested that the members of the club endeavor to interest the residents of the region on the subject.

The Appalachian Mountain Club is in correspondence with a number of similar organizations and geographical societies elsewhere, among which are the "Gesellschaft für Erdkunde," Berlin; the "Société de Géographie Commerciale de Bordeaux"; the "Club Alpin Suisse"; the "Club Alpin Français"; the "Deutscher und Österreichischer Alpenverein"; the "Société Khédiveia de Géographie" of Cairo, Egypt; the "Club Alpino Italiano"; the "Società degli Alpinisti Tridentini"; the "Norske Turistforening"; the "Österreichischer Alpen Club"; the "Österreichischer Touristen Club"; the "Associazione d'Esplorazioni Catalana"; the "Siebenbürgischer Karpathenverein"; the "Société Alpina Friulana"; the "Imperial Russian Geographical Society"; the "Kaiserliche Königliche Geographische Gesellschaft"; the "Royal Geographical Society"; the "Sociedade de Geografia," of Lisbon; the "Société Royale de
Having been invited to take part in the formation of a union of the principal Alpine clubs of Europe and America, the Appalachian Club was replied "that, inasmuch as, if the union were established, the meetings would probably be continued year by year, it would not be convenient for this club to send delegates regularly in account of distance; but we should be glad of open relations with the union by correspondence, and to be represented occasionally by delegates, as opportunity might offer."

Prof. Langley's Observations on Mount Whitney.—

Prof. S. P. Langley, of Allegheny Observatory, spent two months in the summer of 1881 on the slope of Mount Whitney, in California, about 3,000 feet below its summit, in making observations on solar heat. At this height, in screening the sun with a near object, he perceived that the sky did not maintain the same violet blue up to the sun, but that a fine zone was to be seen about it of about forty diameters. This was found by telescopic observation to be composed of motes in the sun's beam, between the diffracting edge and the observer's eye. This result was considered interesting, as showing that the dust-shell, which is supposed to encircle our planet, exists at an altitude of at least 13,000 feet, and under favorable conditions for the purity of the atmosphere. Mr. Clarence King believes that the dust above the Sierra Nevadas has been borne across the Pacific, and owes its origin to the loess of China. The Peak of Mount Whitney would be wholly inaccessible on account of the precipitous character of its sides, were it not that earthquakes have rent the cliffs into fissures, through which bowlders and rocks from above have poured in past times to form couloirs. Through one of these couloirs, called "the Devil's Ladder," Prof. Langley ascended for half or three quarters of an hour to the main ledge, at which he found still extremely steep, with the surface presenting an appearance as though stones had been hailed down upon it and covered it to an unknown depth. After nearly three hours, he reached the snow-field, which was about a quarter of a mile in length. The view from the summit "was of a horizon of tumbled mountains on the north, west, and south, not continuously white as in the Alps, for, though at a more than Alpine height, I saw only scattered snow-fields here and there. The air was cold, but not very chilly, and the sky of a deeper violet overhead than in the camp below. On the east side, the mountains descended in a series of precipices between 3,000 and 4,000 feet, to a little lake surrounded by a snow-field." Between the observer and the neighboring mountain-ranges was a "reddish sea of desert dust, 4,000 or 5,000 feet above the valley-floor, and almost covering the lower summits of the mountains." He must have seen observing through this dust-ocean when at Lone Pine; yet even then the sky was considered of unaccustomed purity, and Prof. Langley adds, "probably we observe under still worse conditions habitually when at home." Though the nearest wood was 8,000 feet below the summit of the mountain, or at the level of the observing-camp, Prof. Langley, in descending, noticed here and there parts of great tree-trunks, some eight or ten feet long, evidently very old, lying on the naked bowlders, without the slightest trace of vegetation anywhere, or any sign to show how they came there. He afterward found these isolated trunks elsewhere, and it seems clear to him that they are relics of a remote day when the forest grew 2,000 feet higher than it does at present, and are evidence of changed climatic conditions.

Attempts to explore Mount Roraima.—Roraima and its companion, Kuenenam, are two mountains near the boundary-line between British Guiana and Venezuela, a few miles north of latitude 8° N., and near the sixty-first meridian west from Greenwich, of unique forms, and are regarded as among the most remarkable mountains in the world. They are described as being great tables of pink and white and red sandstone, interbedded with red shale, rising from a height of 9,100 feet above the sea-level, sheer 2,000 feet higher. Both are crowned with forests; from the summit of Roraima tumbles the highest waterfall in the world, 2,000 feet at one leap, and 8,000 feet more on a slope of 45° down to the bottom of the valley. The streams that issue from the summits of the mountains run to the Amazon, Orinoco, and Essequibo rivers. The plateau on the summit of either mountain has never been trodden by man; as all attempts to climb them have been prevented by the perpendicular elevation of the cliff that forms the last thousand feet of their height. The Indians have woven curious fancies of strange creatures that they imagine inhabit the cliff's sides; and travelers believe that, isolated as their tops are, and have been, for an undetermined period in their history from all the rest of the earth, they may contain peculiar fauna and flora, perhaps identical with those of one of the past geological ages. Roraima was discovered and its base was first visited by Sir Robert Schomburgk. Its base was again visited in 1869 by Mr. Barrington Brown, who has described his journey in his "Canoes and Camp-Life in British Guiana"; and a few years later by Mr. J. W. Boddam Whetham, author of "Roraima and British Guiana." Mr. Brown believed that the summit of Roraima was inaccessible except by balloon. Another attempt to explore Roraima and Kuenenam has been made by Mr. James Whiteley, who, being engaged in the study of the birds of Guiana, made two excursions to the region in 1881-82 and 1883. His route lay from the Bartica Grove mission on the Essequibo river up the Mazaruni and Carimang rivers and the Atapuran tributary of the latter,
eight miles northeast, and Mount Wailpi, in the great bend of the Cotings river, southeast by east. To reach Roraima it was necessary to cut a path through the extremely thick underwood of the forest covering the slope that appeared to have been formed by the rock breaking away from the sides of the mountain. The foot of the rocky cliff was reached at the height of about 7,000 feet above the sea, through a growth of brambles and prickly bromelias. The Indians had endeavored to cut a path toward a spot that Mr. Whiteley had observed on his journey where the vertical cliff had broken away, which seemed to give a faint promise of possibility of ascent, and to be the only spot where it would be worth while to look for a route, but they did not find the spot, and the explorer found his way stopped by an enormous rock, with precipices on both sides. Looking up, he could distinguish through the mist trees and shrubs growing on the top, and judged by boiling the thermometer that he was but a short distance from the main cliff. Mr. Whiteley also expressed the opinion that it seemed impossible to ascend either Roraima or Kukenam except with a balloon, and that this, on account of the direction of the prevailing wind, would have to be done from the south. It might be possible to ascend by forming scaffolding, for which the forests of the slopes would furnish abundance of timber, but this would require much time and great expense. A mere ascent of the mountain for one or two days would not be of particular use to science, for it would take a long time to collect the natural objects in zoology and botany from the large extent of its surface. Accurate measurements of these mountains are wanting. Mr. Brow's gives the length of Roraima as seven or eight miles; the mean of Mr. Whiteley's observations give 7,759 feet as its height.

Mr. E. F. Im Thurn has made another attempt to ascend Roraima. In December, 1884, he had ascended the slope to a height of 5,000 feet, "through a very garden of orchids and of most beautiful and strange plants." In a later dispatch, to Kew, Mr. Im Thurn announced that he had succeeded in reaching the top, and had found it to be a flat table-land about twelve miles long, covered with vegetation, and with streams of considerable size flowing from it.

Mr. Whymper in the Ecuadorian Andes.—Mr. Edward Whymper made an exploration of the Andes of the Republic of Ecuador in 1889, with especial reference to studying the practicality of living at great elevations. He ascended Chimborazo and remained in its neighborhood for four weeks; then, having made an unsuccessful attempt to ascend Illina from the south, he ascended Cotopaxi and remained on its summit for twenty-six consecutive hours; ascended Sinchologna, Antisana, and two
of the peaks of Pichincha; explored Cayambe, Sara-urcu, and Cotocachi; and ascended Caraburáz, and made a second ascent of Chimborazo, July 3. Till his own ascent was made, Mr. Whymper had never known of any traveler who was attacked with what is called "mountain-sickness," or the sense of exhaustion and feverishness that affects persons who ascend to great heights, who had deliberately contended with it and endeavor to overcome it. On the first day of his ascent of Chimborazo he reached a height of 14,400 feet. On the next day he reached 16,500 feet, and established himself at that height with great difficulty. The mules were driven till they were completely exhausted; and Mr. Whymper and his men, the Italian mountaineers, the Carrellas, were prostrated, and became incapable of making the least exertion, feverish, suffering from intense headaches, and unable to satisfy their desire for air, except by breathing with open mouths. This produced great thirst, which they could not satisfy, partly because they could not get enough water, and partly from the difficulty of swallowing it. They could only sip, and when they undertook to drink and swallow, were forced to stop for breath and gasp. They were obliged to relieve themselves by frequent spasmotic gulps, such as ices emit when taken out of the water. Mr. Whymper obtained relief by taking chloride of potash; and in two or three days the party had become accustomed to the situation, and were able to continue their work. The next camp was pitched at a height of 17,400 feet. The more disagreeable symptoms had gone, but the explorers still found themselves "comparatively lifeless and feeble, with a strong inclination to sit down when we ought to have been moving." At length, having spent three days in moving their camp, and having passed a night at the highest station, they undertook the ascent. The ascent was extremely difficult, and had to be made in the face of a high wind and through soft snow, in which the men sank to their necks, but it was accomplished, the measurement of the height was taken, and the summit was safely made to the camp, all in one day. The most notable physical experience remarked during the ascent was the observation, at a height of between 18,400 and 19,500 feet, that the steps of the men got shorter and shorter, until at last the toe of one foot touched the heel of the one before it. Mr. Whymper's residence on Chimborazo extended over seventeen days. One night was passed at a height of 13,400 feet, ten nights at a height of 18,500 feet, and six nights at 17,300 feet. Besides the ascent to the summit, Mr. Whymper also went three times as high as 13,300 feet. When they quitte the mountain, all signs of mountain-sickness had disappeared, and none of it was experienced again till the party arrived at the summit of Cotopaxi. The camp on the latter mountain was placed at about 130 feet below the loftiest point, or at a height of 19,470 feet—the most elevated position at which any of the party had ever lived. They remained at that elevation for twenty-six consecutive hours, and felt slightly at first the effects of the low pressure, with the same symptoms that had been noticed on Chimborazo; and the good remedial effects of chloride of potash were again remarked. The height of Chimborazo was measured on the first ascent, and again six months afterward. The mean of the two measurements was 20,017 feet. While Mr. Whymper believes that his experiments in enduring an elevation of from 16,000 to 18,000 feet for several hours determines the possibility, if necessary, of mounting several thousand feet higher (Mr. Graham reached nearly 24,000 feet in the Himalayas), they do not prove that any one could remain for a length of time at such an elevation as 24,000 feet; and that until this is done it is not probable that any one will reach, on foot, the summits of the highest known mountains.

All the mountains that Mr. Whymper visited in the great chain of the Andes were or had been volcanoes. Some of them, as was judged from the immense accumulations of glaciers that now covered them, must have been extinct for several centuries at least, and their rocks bore a close family resemblance to one another. While Tunguragua and Pichincha are frequently classed as active volcanoes, and are indeed not quite extinct, only two volcanoes in Ecuador—Sangai and Cotopaxi—possess such a degree of life as entitles them to be considered really active. They are seldom at rest; Sangai has been seen by few persons, and Mr. Whymper only saw it, early in the morning, when they were encamped upon Chimborazo at a height of 17,300 feet, though he frequently heard its detonations, also early in the morning. As seen from Chimborazo, Sangai presents the appearance of a regular cone; and it is a very fine mountain, though less stately and symmetrical than Cotopaxi. It has large snow-bergs on the upper part of the peak, which die out before its apex is reached. That is black, and is probably formed of slopes of fine volcanic ash. But little smoke was seen to issue from the cone, but at intervals of from twenty to thirty minutes were observed outrushes of steam, which shot up jet-like with immense rapidity to a height of 4,000 or 5,000 feet above the edge of the crater, and then spread out into a mushroom-like head, which was gradually wafted away by the wind. The eruptions of Cotopaxi were not ordinarily as violent as those of Sangai; but Mr. Whymper witnessed at one time "at a distance of sixty-five miles an eruption of ash which was projected 20,000 feet into the air, and poured out in such volume that at the distance of sixty-five miles it produced the effect of twilight soon after midday. Some of the eruptions of this volcano are attended by great floods, which Mr. Whymper believes are the result of
the cone becoming unusually hot and liquefying the glaciers which repose upon it." While it is said in the "Encyclopedia Britannica" that the crater of Altar is the bed of the only real glacier known to exist in the Ecuadorian Andes, Mr. Whymper has found, on Altar, larger glaciers outside of the crater than that which lies inside it, and other large glaciers upon Caribusraza, Illiniza, Cotocachi, Sincholaguna, Rutilinada, Cotopaxi, Cayambe, Sarpurcu, Antisana, and Chimborazo. The largest were on the four mountains last named. Although the glacier-covered area on several of these mountains is comparable to the amount on Mont Blanc, the Ecuadorian glaciers never descend to so low an elevation as one might expect from glaciers flowing out of such extensive reservoirs. None of them are known to descend so low as 12,000 feet, and they generally terminate at between 14,000 and 15,000 feet. Moraines are scarce upon them, and roches moutonnées are rare. The crevasses in the lower parts of the glaciers of the Ecuadorian Andes are smaller and less numerous than in corresponding situations in the Alps; but in the higher regions they are frequently of enormous size. The force of the winds on the mountains was not remarkable, but Mr. Whymper says, "It is almost impossible to speak in too extravagant terms of the highly electrical condition of the Ecuadorian Andes." Mr. Whymper gives the following table of ascents and heights of mountain-summits in Ecuador, as determined by himself and by Reiss and Stübel:

<table>
<thead>
<tr>
<th>Date</th>
<th>Mountain</th>
<th>Temperature on summit</th>
<th>Height in feet</th>
<th>Whymper</th>
<th>Reiss and Stübel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 4</td>
<td>Chimborazo</td>
<td>Dec. 65</td>
<td>19,047</td>
<td>19,070</td>
<td></td>
</tr>
<tr>
<td>Feb. 2</td>
<td>Corazon</td>
<td>Dec. 44</td>
<td>16,571</td>
<td>16,591</td>
<td></td>
</tr>
<tr>
<td>Feb. 18</td>
<td>Cotopaxi</td>
<td>Dec. 71</td>
<td>16,500</td>
<td>16,499</td>
<td></td>
</tr>
<tr>
<td>Feb. 28</td>
<td>Sincholaguna</td>
<td>Dec. 30</td>
<td>12,200</td>
<td>12,205</td>
<td></td>
</tr>
<tr>
<td>March 10</td>
<td>Antisana</td>
<td>Dec. 30</td>
<td>15,918</td>
<td>15,926</td>
<td></td>
</tr>
<tr>
<td>March 25</td>
<td>Pichincha</td>
<td>Dec. 30</td>
<td>15,808</td>
<td>15,808</td>
<td></td>
</tr>
<tr>
<td>April 4</td>
<td>Cayambe</td>
<td>Dec. 29</td>
<td>16,456</td>
<td>16,450</td>
<td></td>
</tr>
<tr>
<td>April 17</td>
<td>Sarapuru</td>
<td>Dec. 29</td>
<td>15,600</td>
<td>15,600</td>
<td></td>
</tr>
<tr>
<td>April 24</td>
<td>Cotocachi</td>
<td>Dec. 29</td>
<td>14,298</td>
<td>14,298</td>
<td></td>
</tr>
<tr>
<td>June 20</td>
<td>Carabaisraza</td>
<td>Dec. 29</td>
<td>16,450</td>
<td>16,452</td>
<td></td>
</tr>
<tr>
<td>July 8</td>
<td>Chimborazo</td>
<td>Dec. 29</td>
<td>15,200</td>
<td>15,200</td>
<td></td>
</tr>
</tbody>
</table>

The two estimates of the height of Chimborazo differ by 186 feet. Villavicencio, twenty years earlier than Reiss and Stübel, stated the height at 21,067 feet; Humboldt, forty years earlier still, at 21,424 feet; and the Spaniards associated with the French Academicians in 1748, at 21,611 feet. These would seem to indicate that the mountain is sinking, but the French Academicians who were associated with the Spaniards made the height 20,551 feet, or 64 feet less than Mr. Whymper's measurement.

Dr. Gnsfeld in the Chilian-Argentine Andes.—Dr. Paul Gnsfeld, explored from November, 1882, to March, 1883, the Chilian-Argentine mountain-region containing Aconcagua, the most elevated known point of the American Continent. This region lies between the 32d and 55th degrees of south latitude, and is bounded on the east by the Pampas and on the west by the Pacific Ocean. The central Chilian-Argentine Andes are sketched by Dr. Gnsfeld as two parallel chains, having on the Pacific an outlying coast-range. The western chain is the true water-shed of the Atlantic and the Pacific; while the eastern chain is in many places broken through by the waters rising in the great trough between the two chains, which have no well-defined valley formation. This trough, or basin, 185 miles in length, is very difficult of exploration, while only three months in the year are available for the purpose. Dr. Gnsfeld crossed the divide at four points, and obtained the following altitudes: Atravesio de la Llanta, 13,474 feet; Paso del Maipo, 11,924 feet; Cumbre Iglesia, 13,203 feet; and Boquete del Valle Hermoso, 11,690 feet. The crest-line of these elevations was estimated to reach over 19,600 feet. The passes of the second chain reach similar heights, viz., 13,779 feet, 19,270 feet, and 9,494 feet, respectively. The mountain-land forming the left northern side of Valle Hermoso comprises the Ramada range, with peaks 19,855 feet high, the highest being 21,040 feet. Lastly, the great volcano Aconcagua reaches 22,867 feet, near the beginning of Valle Hermoso. Dr. Gnsfeld in his paper discusses the question of the effect of rarefied air at great elevations upon the human frame. He says that he and his assistant attained 21,050 feet on Aconcagua, and were able to work their scientific instruments at that height, although, from anxiety and want of sleep, they were not in good condition. Their lungs were physically exhausted by the effort of speaking, but there was no flow of blood from nose or ears. He believes...
so-called “puna” can be resisted by
effort and confidence, the only effects
properly trained person being those of
lung-action. The glacial covering of
Chilian-Argentine Andes is, as a
naturally different from the Alpine type.
ure of the highest points is unfavor-
le collection of large glacier-forming
snow. The wind also probably plays
stant part in carrying off the fallen
all events, the northwest side of
m is entirely free for a belt between
d 21,655 feet, although it is there of a
c construction, affording a good hold,
, the conditions of position and in-
trary for the retention of extensive
vanting. Dr. Gassfeldt discovered,
one ice-stream, in the head of a side-
the Cachapual, called the Cajon de
asses, which is filled with a magnifi-
cer, named the Ada glacier, nearly
dible in length. The highest peaks
show a continuous snow-cap, as the
formation of abrupt crevasse leaves the
k almost everywhere exposed. Cre-
now-fields and broken glaciers are
omena. Peculiar formations of
snow, locally called “penitentes” or
-icious lee-figures modeled by ex-
the sun—are noticed as occurring at
ns of high snow-valleys, in a zone of
3 to 17,779 feet, and on the unfur-
-slopes. As regards the snow-
zen altitude is estimated at 17,779
ree 32° and 33° south latitude; 11,
. 84°; and 18,128 feet 10° farther south.

in the Himalayas. — Hermann von
weit Sakhtishan, in the last volume
neys in India and high Asia, gives a
hicle view of the position of the
the highest mountains. The
not extraordinary south of the
, the most marked ones being four
11,000 to 15,000 feet high in the
the Satus Koh peak in the Pun-39
9 feet high. The eastern Himalayan
embracing Bhutan, Sikkim, and Ne-
what, till Mr. Graham discovered
er peaks, was the highest known
on the earth, Gaurisankar or Mount
which is 29,002 feet high; the third
Kichinjunga, 28,156 feet high; and
es, thirty-two mountains more than
high, and thirty-two of more than
ht high. The western Himalaya re-
ending from Kumaon to Hamazara,
the Nanda Devi in Kumaon, 25,749
as its highest peak, and has, besides,
ines mountains of more than 20,000 feet
and eight of more than 10,000
. In eastern Tibet are ten Alpine
between Lassa and Guari Khorsum, a
10,000 feet high, two of them reach
500 and 16,702 feet; and Lassa, the
11,710 feet high. Western Tibet, Guari
Khorsum to Balti, ranks next after
the eastern Himalayan regions, having within
its boundaries the next highest mountain after
Gaurisankar, the Dapsang, 28,378 feet high,
with twelve mountains more than 20,000 feet
and seventeen of more than 10,000 feet in
height. The highest point in eastern Turki-
stan is the summit of the Kwen-lun, 20,000 feet
high. The great passes of the world are in this
territory. They include the Kizil Korum pass in
Yarkand, at an elevation of 17,762 feet, the
Kilian pass in Khotan, 17,200 feet, and the Ichchi
Davan pass in the Kwen-lun Mountains. The
snow-line appears at a height of 16,100 feet
on the north side of the Kwen-lun, of 18,500 feet
on the south side, of 18,655 feet on the west-
ern slopes of the Guari Khorsum, and of 18,010
feet on the northern side; and phanaeromous
plants reach up to 19,287 feet on the western
side. The highest places inhabited by man are
in Tibet at a height of between 14,500 and
16,000 feet, but higher than these are the Hanli
Chloister, 15,117 feet, and the Thok Jalan gold-
field, 16,380 feet. In all, these mountain-re-
gions contain seventy-three peaks more than
20,000 feet high, of which seventeen rise above
25,000 feet. Dзавалгари, in Nepal, 26,680
feet high, which was formerly considered the
highest mountain on the earth, is remanded
from the fifth place, being exceeded, besides the
three mountains already named of superior
height, by the Sisbut peak, in Nepal, 27,799
feet high.

Mr. Graham's Himalayan Explorations.—Mr. W.
W. Graham gave an account before the Royal
Geographical Society, June 9, 1884, of his ex-
plorations in the Himalaya mountains, in the
course of which he had achieved the distinction
of having, with Emil Boss and Ulrich Kau-
mann, his companions, reached a higher point
above the level of the sea, in mountain-climbing,
than any other living man; his extreme
elevation having exceeded by 1,700 feet the
highest that had previously been accomplished.
After making one attempt, too early in the
spring, in which he reached the height of 20,000
feet, Mr. Graham started on the 24th of
June from Nynee Tal with the Swiss guides
Emil Boss and Ulrich Kauflmann for Kini,
whence he intended to attempt the Nanda
Devii. On parts of the road along the Alk-
anda to Rini the track was found to consist of
“a plank or two resting on pegs driven into
the rock,” beneath which thundered the river.
It was found impossible to reach Nanda Devii,
on account of a chasm that yawned across the
way, 500 feet deep and worn to the most im-
passable smoothness, along which no point
offered where it could be crossed, and which
could not be turned. Mr. Graham remarks that
the difficulties of this character in the valleys,
before the traveler can get near the peaks, are
among the most formidable obstacles to Hima-
layan exploration. The party then attempted
Dungril, 28,186 feet high, to which they pro-
ceeded by the valley of the Dungril glacier.
At the head of the glacier, 18,400 feet, where
they encamped, Mr. Graham remarked on the character of the scenery around them, that all the peaks were set with rocky siguillas, "all equally black and equally impossible," many of them showing 5,000 or 6,000 feet of sheer descent. On the next day they reached the final slope of the peak, looking down upon a mountain of 32,516 feet and over its very summit upon another of 21,001 feet, and found their elevation to be 2,700 feet, with the summit of the mountain, 500 feet higher, in plain sight. They were not, however, able to reach the summit. At these unusual heights, "neither in this nor in any other ascent," says Mr. Graham, "did we feel any inconvenience in breathing other than the ordinary panting inseparable from any great muscular exertion. Headaches, nausea, bleeding at the nose, temporary loss of sight and hearing, were conspicuous only by their absence, and the only organ perceptibly affected was the heart, whose beatings became very perceptible, quite audible, while the pace was decidedly increased." Another attempt having been made to reach Nanda Devi, and defeated, Mr. Graham made a successful ascent to the summit of the mountain A 21, 22,516 feet high, which he had looked down upon from Dunagiri, and which he named Mount Monal, and ascended 20,000 feet of its companion, A 22, 21,001 feet high. Returning to Nynee Tal, he made another journey thence in August and September to kabru, taking in on the way Juba, 21,800 or 21,400 feet, the glacier of which was very steep, and gave the party the hardest climbing they encountered in the Himalayas. The glaciers seem to lie at a higher angle and the general slope of the peaks appears to be greater in the Himalayas than in Switzerland. In the ascent of Kabru the party made the most elevated camp in the whole series of their explorations, at the height of 18,500 feet. Their way toward the summit lay through a long funnel, like a half-cylinder, crowned with rocks, in which the snow was loose and just ready to slide; along a steep icy slope to a snow incline, and so to the foot of the true peak; then up nearly 1,000 feet of unbroken rock, forming a perfect staircase; and a final slope of pure ice coated with frozen snow, the angle of elevation of which was from 45° to nearly 60°. At 12:15, says Mr. Graham, "we reached the lower summit of Kabru, 28,700 feet above the sea. The glories of the view were all beyond compare. Northwest, less than seventy miles, lay Mount Everest, and I pointed it out to Boss, who had never seen it, as the highest mountain in the world. 'That it can not be,' he replied; 'those are higher,' pointing to two peaks which towered far above the second and more distant range, and showed over the slope of Everest, at a rough guess some eighty to one hundred miles farther north. I was astonished, but we were all agreed that, in our judgment, the unknown peaks, one rock and one snow, were loftier. Of course, such an idea rests upon pure eye-sight; but, looking from such a big objects appear in their true proportions, as we could distinguish perfectly between peaks of known measurements, however the difference. It has been suggested since that we mistik Mount Everest; this is impossible; for just here occurs the markable break in the chain, and there the snow range at all between Kabru and group of Mount Everest. However, we had no time for the view, for the actual ascent was connected with ours by a short climb and rose about three hundred feet of the same ice I have seen; we went at it, and after hour and a half we reached our goal. The summit was level by three gashes, and into these we got. The absolute summit was more than a pillar of ice, and rose at thirty or forty feet above us still, but, pendently of the extreme difficulty and of attempting it, we had no time. A was left at our highest point, and we descended. The descent was worse than the ascent, and we had to proceed backward, as the might give way at any moment. At dawn we reached the rocks, and there we set the Bhutan flag on a smooth slab; we then sat down to the summit of Kabru is given by the G. T. S. at 24,016 feet. Mr. Graham extreme point must therefore have been a few feet of 34,000 feet. Mr. Johnston's Ascent of Mount Kilmamadarto H. H. Johnston, as the leader of an expedition projected by a joint committee of the British Association and the Royal Society, made visit to Kilmamadaro, the great mountain in Africa, in 1888, and spent five months of in the summer and autumn of that year. Beginning the ascent with forty carriers as some guides provided by one of the chiefs of the country, the party crossed the cultivated zone, which ended at the height of 9,000 feet above the sea, and proceeded through pleasant, healthful, grassy, wooded, well watered country which animal life was abundant, and which had a very gradual ascent. His encampment at the height of about 10,000 feet, were a small locality, called the lower country, and about four miles in a direct line from Kimsenzi, and seven miles from Kibbo. His first cession was to the base of Kimwenziri, and his ascent was impracticable on account of the weather, and it seemed doubtful whether the slope afforded sufficient foothold to be feasible in any weather. The snow was greatly in quantity, and very rapid in mountain-sides, which, when bare, were composed of lava-rocks with crevices of red sand.
were found, the temperature mud from which was indicated
ster at 91° Fahr. The last resi- 
be central connecting ridge of
fr. Johnston suffered nothing
albari followers were consider-
at at 16,315 feet, the highest
, he was overcome with a
and a sense of utter iso-
 within a little more than
summit. On the descent, Mr.
tered the region of vegetation
w three elephants and heard
of those animals at night at
the 18th of October he left
ement, somewhat unwillingly,
, passing on the descent,
new route, through some most
ly, which impressed him as if
an settlement. It was "singu-
look, with open grassy spaces,
the distance reddish corn-fields,
and copse full of fine timber.
ng streams of clear water inter-
y sloping, almost level plateau,
such a tempting idyllic land,
inhabited, save by buffaloes.
The average elevation of this
ween 8,000 and 7,000 feet, and
coastally almost cool,
" at night to 70° in the mid-
Mr. Joseph Thomson, who has
ations on Kilimandzaro in con-
Royal Geographical Society,
ent as a mass of which the
ut sixty miles and the shorter
in length. The springs of
of the still persisting volcanic
country. Mandara, one of
left, described to him an earth-
years previously had shaken
the mountain severely.
Cook, New Zealand.—In January,
W. S. Green gave an ac-
Geographical Society of re-
ns of the mountains of the
of New Zealand. Accomp-
; the guides, Emil Boss and Ul-
, who, later in the same year
th Mr. Graham in the Hima-
be first made some prelimi-
se the great Tasman glacier,
minal end, is 2,300 feet above
. Afterward they pitched
below the summit of Mount
iformed by the junction of
of a tributary glacier, which
Ball glacier. Two or three
to make the ascent the
then a successful one. Biv
night near the top of a ridge
left at 18,700 feet. Pro-
(March 2d), struck the head of a glacier to the
north, named the Freshfield glacier. Passing
over the Haart Grat, they found themselves
the upper rim of the Hochstetter glacier, which
they crossed with an hour's smart walking.
Reaching a glacier descending from between the
ribs of Mount Cook, they followed it upward
for five hours to its source at the foot of the
highest peak. The summit was reached at
about a half-hour before sunset, so that, dark-
ness coming on after they had got only a short
distance down, they were obliged to rest on a
ledge during the night, and descend the next
morning, going twenty-two hours without food.
Mount Cook, 12,869 feet high, is the loftiest
peak of a great range of mountains, which
were also partially explored by Dr. Von Len-
denfeld and his wife. The southwestern part
of the New Zealand Alps, between Milford
Sound and Dusky Sound, is regarded as pre-
senting a fine field for exploration. The coast-
line is broken by numerous fiords, some of
them resembling those of Norway, but pre-
venting more picturesque and savage scenery.
Prof. Bonney, President of the Alpine Club,
supplemented Mr. Green's address with the
observation that the ascent of Mount Cook
was one of no common danger, and daring
risks are run which are not very frequently
encountered in the Alps. An additional peril
exists in the shape of excessive precipitation.
The avalanches are never silent, and the an-
nual rainfall on the west side of the range,
and probably high on Mount Cook, amounts
to 118 inches.

MUSIC. The Tsorie Sol-fa System.—A system
that proposes to overturn the established order
of things in any department of education, lit-
terature, or art, should have an unquestionable
raison d'etre. In the case of the Tsorie Sol-fa
system, the apology for its existence and the
strength of its claim upon public attention lie
in the fact that so small a proportion, even of
cultivated people, have an intelligent under-
standing of music, while the same people have
any more knowledge of its laws and prin-
ciples than a bird that has been taught, by con-
tant repetition, to sing a melody. Advocates of
the Tsorie Sol-fa system claim that this low
state of musical culture is an inevitable result
of using the staff as a medium for studying
music. They argue that the staff represents
the instrumental, which is the scientific, side
of music; that each different key or gamut must
be represented by artificial signs, correspond-
ing with the mechanical appliances of musical
instruments; and that the masses of the people
can no more acquire music through the staff
than they could gain a knowledge of mathe-
matics through the complicated Roman numer-
als. They point to history and the present con-
ting condition of musical development throughout the
world as fully confirming their views: inasmuch as, even in the most musical of all coun-
tries, Germany, it is not the millions of the
people who understand music, but the boasted
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culture is centered in the comparatively few in each community who are endowed with special musical gifts.

On the other hand, it is claimed that music has its natural side, which is represented by the Tonic Sol-fa system; that when the subject is approached from this natural side its supposed mysteries are no more difficult of understanding than the principles of arithmetic or the construction of a language; that, consequently, it can be learned as easily as other subjects, and should be taught in all schools as one of the regular studies. It is also found (and this fact is of supreme importance) that approaching the subject from its natural side leads, by easy gradations, and in the most logical way, to a knowledge of the deepest scientific principles of the art.

Tonic Sol-fa was a growth. Its germ originated with a philanthropic lady of Norwich, England, Miss Sarah Glover. In her efforts to simplify music for the charity children in whom she was interested, she was led to the device of using, as signs of tone, the initials of the syllables—do, re, mi, etc. Finding the results far beyond her expectations, she devoted considerable time and thought to the subject, and in 1855 published a book entitled "Scheme for Rendering Psalmody Congregational." It is not probable that the innovation would have extended beyond her personal influence but for circumstances that followed. In 1840 a conference of Sunday-school teachers met at Hull, England. Among the subjects discussed, the low state of church and Sunday-school music received earnest attention, and a young Congregational clergyman, named John Curwen, was appointed to investigate the matter, and, if possible, to devise some method of teaching music that the common people could understand. This proved to be the initial step of a great educational reform. Many attempts had previously been made to simplify the study of music, but they were chiefly based on theory, and hence have never accomplished the reform at which they aimed. Moreover, they have always been undertaken by persons who were familiar with the existing system, and their plans were apt to be simply modifications of that system. The work could only be accomplished by some one who combined these qualifications: intelligence, teachableness, and such an unfamiliarity with music and musical methods as would lead to his following the subject through the natural channels of his own mind. This combination Mr. Curwen proved to possess. He had an intense love of music and an excited idea of its power in humanizing and refining the people. Yet his own musical talent was very small, and his ear singularly defective. It is related that, while he was at college, two of the students laid a wager as to whether he could be taught to sing the scale correctly in a given number of weeks. He entered into the affair with spirit, went patiently through a course of daily training, and just succeeded in accomplishing the task, but with no little spars. In an address made in his latter days Mr. Curwen thus describes his experience:

For myself, all this while, I could neither read well-known tunes properly, nor by any means "cut" from the notes the plainest psalm-tune which had not heard before. To obtain that modest aim was the height of my musical ambition. I sought a private teacher, who, with the help of a drum, drilled much practice into me, but no independent power. I could run in the "go-cart," but could not take a step alone. I remember being often told that I did not mark correctly the semitones between third and fourth, and seventh and eighth of the scale, and I thought if those same semitones were plainly on the music before me, how gladly and neatly I would strive to mark them with my voice; but it was, I was continually afraid of those semitones, I knew they were on the staff before me somewhere, but I could not see them. They lay concealed dangerous to tread upon, like a snake in the grass. No sooner had I, with great pain, taught my interval, than I found frequently the very next cause of what seemed the same to be quite a different one by half a tone! I longed for some plan by which puzzling differences might be named and denoted, and with equal facility in all their shifting abodes on the staff.

Visiting Miss Glover's schools at Norwich in 1841, he was delighted with the method employed, and was at once convinced it furnished a clue for unraveling the mystery of music. On returning to his home, he claimed, "Now I have found a tool to work with!" In the same address from which previous quotation was taken, he speaks of the old method and the new:

I soon found that the old methods had desired with the shell of knowledge, instead of giving us the kernel. The thing music I perceived to be very different from its names and signs. I found it could be more simply and easily managed, and incomparably more beautiful, than the mere explanation of the signs of the old notation which I dismissed as commonly filled. I had easily mastered these, and I had also studied a "first book" on harmony, but it seemed to have known nothing of music till then. I now saw that Miss Glover's plan was to teach by the simple and beautiful thing, music, and to delay the introduction to the ordinary antiquated symbols until it is taught and until the pupil has obtained a mastery of the thing itself. Her method was, beyond all contempt, more deeply established on the principles of science than any other, and by giving it a fair trial myself, and on a little child who lived in the same house, I became convinced that it was also the most pleasant, the easiest to teach, and the easiest to learn.

From this time Mr. Curwen devoted his self to the work of adapting music to the taste of the people. A partial failure of health compelled him to give up preaching, and his wife and time was thus left free to this, which proved to be his life-work. Being convinced that the Miss Curwen system embodied the greatest educational principle, he adopted it, with some necessary modifications. From this time the process of growth continued for years, till the system was complete. Many teachers became interested in the new method, and the system was used in all parts of the kingdom.
and discussion. Suggestions that rise of improvement were made the experiment, and at the annual meet-
where compared. If an expedient to be an improvement, it was adopt-
the system grew out of work and a, not of one teacher, but of many,
the first number of the "Tonic Sol-
fr" appeared. It was at first only irregular intervals, but in 1853 it exist-
tence as a monthly journal, and e been the organ of the movement
Britain and her dependencies. In
Tonic Sol-fr Association of London 
"sd, with Mr. Curwen as president,
se of 1856 the number of pupils of 
. was estimated at twenty thousand.
24. 1857, the London Association 
sale choral meeting at Exeter Hall,
etest excited by this meeting sug-
idea of a juvenile concert on a large 
Crystal Palace at Sydenham. This 
cized on the 24 of September fol-
t three thousand children sang to 
c of thirty thousand people. Of 
one of the London papers said, "It 
was an almost unknown institution to 
ber concourses of persons than has 
tracted in this country to a musi-
ance." This extraordinary success 
movement at once into national im-
A classical concert, given in Exeter 
33, still further confirmed this favor-
ssion by showing that the value of 
was not confined to children or to 
 music. Musicians and teachers of 
order became interested.
the important feature of the movement 
 as of certificates, by which the stand-
 teacher and pupil of the system is 
ed—elementary, intermediate, matric-
ad advanced certificates, and also 
ved "Theory Honors," showing the 
proficiency in the theory of music. 
rt was made by Mr. Curwen to in-
 to require their pupils to take 
ficate in their order, and his signal 
 the cause of the remarkable coher-
 the Tonic Sol-fr movement.
Mr. Curwen established the Tonic 
at Plaistow, near London. The sale 
ed by this time become large, but he 
enrich himself with the proceeds of 
using business. The profits were 
alyzed in the publication of stand-
the Tonic Sol-fr notation. All 
works of the great masters are ste-
nd printed in this notation, besides 
of English and German glees, sacred 
. The catalogue is immense. 
ooks and music for instruments and 
also published in this system.
A musical competition was held in 
 the Paris International Exhi-
which any nation was allowed to 
A prize of £300 and a gold wreath 
 were to be given to the best choir. A chorus 
of about seventy voices was sent by the Tonic 
Sol-fr Association, with Mr. J. Prondman 
as conductor. The singing of this choir excited 
the utmost enthusiasm, and the new system 
again received a mighty impetus. Owing to a 
simple technique (the prize could only be 
given to a choir of men's voices, and the Eng-
lish chorus was "mixed"), the highest honor 
could not be given them. But a special laurel 
wreath was given by the Emperor, with a gold 
modal, a diploma, and the badge of the Orphe-
onists of France.
A most important element of success in the 
Tonic Sol-fr movement was the foothold it 
gained in the board (public) schools. This 
was accomplished in the face of the most de-
termined opposition, her Majesty's Inspector 
of Music being a sworn enemy of the method. 
But all the power of governmental influence 
availed nothing against the popularity of a 
system that made the reading of music as easy 
as the reading of the English language, and 
the movement swept on with an increasing 
tide of success. The latest improvements of 
the method were the following: In 1867, 
adopting a system of time-names from the 
French (with slight modifications); in 1870, 
making use of a series of hand-postures (man-
ual signs) to indicate the seven tones of the 
scale as a means of training classes. In 1875 
the "Tonic Sol-fr College of London" was 
incorporated, and it is now the great center of 
authority and influence. A building for the 
college has been erected at Forest Gale, in the 
eastern suburbs of London.
Thus the greatest musical reform of the cen-
tury grew in a single generation from the hum-
bile efforts of an unknown and unmusical 
clergyman. The aims of Mr. Curwen and his 
associates were, from the beginning, rather 
philanthropic than professional or artistic. The 
new power of music was constantly used for 
the benefit of the ragged school, the Band of 
Hope, and other efforts in behalf of the lower 
classes. Missionaries also introduced the sys-
tem in all parts of the world, and usually found 
that the natives could learn to read the lan-
guage of music by this method much sooner 
than their own tongue. The system has been 
thus introduced into Madagascar, Cape Colony, 
Hong-Kong, Beyrout, Mount Lebanon, Fiji, 
South Africa, Bombay, Calcutta, Barbadoes, 
St. Helena, Spain, Burmah, Chili, and the Sand-
wich Islands.
In a recent issue of the London "Times," 
Mr. J. S. Curwen gives the following statistics:

There are now, in the elementary schools of the 
United Kingdom, about 1,000,000 children learning to 
sing at sight upon our system. The Tonic Sol-fr Col-
lege has twenty-eight different kinds and grades of 
musical examinations, and these were passed last year 
by 18,718 persons. Every examination includes indi-
vidual tests in singing at sight. We have between 
4,000 and 5,000 teachers at work, and at the present 
time they have under instruction some 400,000 adults, 
in addition to the children already mentioned.
As the efforts of the leaders of the movement were mainly toward the popular side of the art, it is all the more remarkable that the influence of the system has been equally great on the side of higher musical education. The educational principle that simplifies the first steps for the beginner, applies, with equal force, to each subsequent stage. Teachers who use the system are, on the average, far more intelligent than those who follow the old method. Mr. Curwen's later works on "Harmony," "Musical Theory," "Staticks," etc., are, beyond all comparison, more profound, comprehensive, and clear than any other treatises that have ever been written on the subject of music. Mr. Curwen died on the 26th of May, 1880.

Introduction into American Schools.—The Tonic Sol-fa movement grew to completeness as a system, took possession of nearly all the channels of popular education in Great Britain, raised up an army of five thousand teachers, established an immense literature in its own peculiar notation, and, during the thirty years in which this process was going on, not only was not adopted by any American teachers, but scarcely attracted the slightest attention among them. This singular phenomenon can be accounted for. So many efforts had been previously made in this country to simplify music, so many supposed improvements had been brought to the attention of the public, that the subject was regarded as exhausted. If the subject was not, the people were, and they became confirmed in the belief that the idea was wholly chimerical. Moreover, America had been peculiarly favored in the possession of a truly great musical teacher, Dr. Lowell Mason, who had adapted the Pestalozzian method to the study of elementary music. Thirty years ago the condition of popular music in this country was greatly in advance of that in England. A false theory (the fixed do) had been introduced there, and popular progress in music had received a fatal check. Indeed, it was from the prevalence of this heresy, and the consequent paralysis of musical efforts among the masses, that this great popular movement sprang. Hence it is not strange that America, with an excellent system in general use, and with a wide diffusion of musical intelligence, should think slightly of any scheme or system that arose in that country. It took many years to reveal the truth that the new English system was based upon a far deeper and broader educational principle than the American, and was therefore capable of producing vastly greater results. That this is true, is shown by the fact that the condition of popular music in the two countries is now completely reversed. While England was growing year by year in musical intelligence, America was losing ground. The nature of the musical staff is such that the Pestalozzian principle can not be fully applied to the study of music when the staff is used as a medium, or teaching instrument. It is essentially complex, while music, as a language, is exceedingly simple—so simple that a child can often sing before they can talk. The staff, as a means of writing or representing the language, is very complicated. It represents the instrumental side of music via the many arbitrary signs that are necessary to indicate the slurs, sharps, naturals, signs, and all else that belongs to a mechanical production of the tone-language. Tonic sol-fa expresses this language in its adaptation to the human voice, and is a natural and therefore simple expression.

It was this vital distinction between the principles described that caused the remarkable change in the musical histories of the two countries—one steadily losing ground, the other rapidly advancing, and gaining not only all that the other had lost, but much more, leading the masses of the people to a degree of musical intelligence that is wholly new.

The System in America.—Capable teachers of music in this country—some of them of the same standing and ability as any in the United States—saw the necessity of the system, and introduced it, in the main, and occasionally reported, the remarkable results of the Tonic Sol-fa movement in England. The initiative of a distinctive American plan of this educational reform may be regarded as dating from 1891. In that year a combination of teachers and friends of the system were formed, and a permanent organization was established, called the "Tonic Sol-fa Advocate," published in New York. Text-books in the Tonic Sol-fa notation are also published.

The question as to whether the Tonic Sol-fa system is as well adapted to the educational needs and conditions of this country as of England has had an authoritative answer. At the annual meeting of the New Jersey State Association of Public School Teachers in 1888, a special committee was appointed to investigate the system. The report of this committee was rendered Dec. 80, 1884, at Newark. The committee reported a circular of inquiry to all teachers principal, superintendents, etc., who had taught the system, or witnessed its results in their schools. Replies were received from five hundred teachers in many different States from Massachusetts to California; and, of these replies, every one was in favor of Tonic Sol-fa as superior to the staff system. The report concludes as follows:

Considering carefully all the evidence we have received, your committee cannot form any other conclusions relative to the Tonic Sol-fa system:
1. It is simple and easily understood.
2. It has a tendency to encourage pupils to sing.
3. It is well adapted to the youngest primary pupils.
4. It holds the attention and sustains the interest of pupils better than the staff.
5. It secures the greatest educational results to the greatest number.
6. It is most likely to be taught successfully by the
MUSIC.

who have not had a special musical
st possible introduction to an intelli-
ing of the staff notation.

explained.—The basis of the Tonic
extends nearly as far back in the staff itself. The syllables were
Guido Aretina, in the eleventh
right initials of these syllables are
of the tones. It will be observed
syllables is changed (si to te),
several advantages in this change,
and will quickly recognize. The
of giving an English instead of
alling of the syllables will also
ommend itself. For the tones
ave the figure 1 is placed at the
er, and the figures 2, 3, etc., for
ares. Octaves below are indi-
ces at the bottom of the letters.
(chromatic) tones are indicated
vowels e for sharps, and a for
fa, ma, etc. An examination of
will make all this clearly un-
ved pitches are represented in
with the staff, by the letters C,
which at which Doh is to be taken
"Key C," "Key E," etc.
feature of the Tonic Sol-fa sys-
tulator. This is a truthful repre-
s the eye, which the staff
staff represents the intervals be-
es as equal, whereas the whole
based upon the fact that they
Modulator is a chart that repres-
a, showing the correct intervals
tones by the distances between
It not only represents the rela-
s in a single key, but with the t
shows the relation of keys to
The central column represents
key of a piece—the Tonic. The
on the right represents the First
key of the Dominant. A sec-
the right would represent the
Key, or Dominant of the Domin-
column on the left represents
Key, or key of the Sub-Domi-
ad column would represent the
and so on. Thus the great fact-
ship of tones and the relations
rs are set before the eye as direct-
d as simply as possible. A com-
ty with the Modulator is neces-
stand the notation fully. The
led to sing the tones as the
on the Modulator, and by this
odulator is soon photographed
, so that it stands behind ever-
see in the book. The notes do
level to the pupil, but seem to
own to their places on the Modu-
dlulator that is here with given
shows only the Tonic col-
first sharp and first flat keys.
al working of the system, an
is invaluable in the study of classical music
with its endless variety of modulations.

When a transition (change of key, commonly
called modulation) occurs during the progress
of a piece, it is indicated by a double note,
thus: ՝s, ի, ձ, ե, դ, ե, ձ, ե, դ, etc. (pronounced "s'doh," "p'ray," "'d'fah"), the small note on the left giving the name of the tone in the old key, and the large note its name in the new key, and also by the signature of the new key placed directly over the notes. After the change is made, the reading in the new key is as easy and natural as in the original key. When the transition is very brief, less than two measures it is more convenient not to change the names of the tones.

In the Tonic Sol-fa notation, time (duration or length of tones) is not, as in the staff system, represented by arbitrary characters, but by space. A beat (or, as it is called in this system, a pulse) is represented by a certain length of space. A tone two pulses long occupies twice the space. If the pulse is divided, the space is divided, etc. Thus the system is philosophical and consistent in every part.

The notation represents the various subdivisions of the pulse in their time-names are shown in the following table:

**Half-Pulse Tones.**

- Indicated by a dot in the middle of the pulse-space:
  - դ, դ:
  - ԹաթաՇաՇ

**Pulse-and-Half Tones:**

- դ:
  - ԹաՇ

**QuaIter - Pulse Tones.**

- Indicated by commas in the middle of each half-pulse:
  - դ, դ, դ, դ:
  - Թա - Թա - Թա - Թա

**Two QuaIterS AND A Half, AND a half:**

- դ, դ:
  - Թա - Թա

**Three QuaIterS AND A QuaIter:**

- դ, դ, դ:
  - Թա - Թա - Թա

**Three of a Pulse (triplets).**

- Indicates inverted commas
  - դ, դ, դ:

**Silences (Rests).**

- Are indicated by the absence of notes in the pulse-divisions, i.e., vacant space. The letter S is used as the initial letter in the time-names for silences instead of T or F:
  - դ:
  - ԹաՇ

The following tune shows the leading characteristics of the notation:

In the Sol-fa notation no distinction is made between Թ, Թ, Թ, etc., there being but one way of writing the different varieties of measure.
The same tune in staff notation would present the following appearance:

The foregoing tune introduces not only chromatic tones, but also "modulation" or "transition." A brief departure is made to the key of the second line, returning to the original at the beginning of the third line. The key is indicated not only by the "bridge"s, but also by appropriate letters placed above. The key-letter is given and a small letter preceding the characteristic tone of each, which is to be passed from the key of the key of D, and in passing from D to G. The staff copy gives no indication of modulation, but compels the reader to find all accidentals as indicating chromatic.

Examining the Sol-fa copy it will be observed that a great deal of advantage of the notation lies in the fact that there is no differentiation for the male voice, as is required by the bass clef with the staff. The page of the staff copy consists of the same, and there are confusing leger lines as are seen in the tenor of the staff copy. But the grand characteristic difference is this: If the tune had happened to be printed in another key, as F or A, the note would occupy a different place on the staff, and its location could only be ascertained by observation and comparison. In other words, the note does not actually tell the singer what key the staff is in. They present a series of puzzles, one of which has to be examined and its meaning studied out. That this is not an exaggerated statement is shown by the fact that no note has a simple meaning, a signification that is apparent on the face of it, but its meaning depends upon some sign, and often several signs, that have preceded it. For instance, when there are no flats or sharps at the beginning of a tune, the first line (with the G clef) stands for the third tone of the scale; when there is one sharp, it stands for the sixth; with two sharps, the second; with one flat, the seventh; and so on through all the keys. In the Tonic Sol-fa notation the reading of all keys is the same to the singer. In other words, there is one way of reading, instead of twelve.

In the singing of classical music this difference becomes vastly more apparent. In all music of the highest order there is a continual series of modulations or changes of key. In the staff notation these changes are not only not expressed, but they are so buried under misleading technicalities that none but experienced harmonists can unravel the mystery and follow the changes intelligently. In the Tonic Sol-fa notation, these changes are interpreted to the reader and made simple and easily understood. In passages where the staff reader is groping blindly and losing all concept of the scale-relationships, the Tonic Sol-fa reader is going forward with intelligence and comparative ease. The following illustration of an abrupt modulation will show the characteristics of the two notations:

Key C.

<table>
<thead>
<tr>
<th>1:</th>
<th>2:</th>
<th>3:</th>
<th>4:</th>
</tr>
</thead>
<tbody>
<tr>
<td>s</td>
<td>:f</td>
<td>r :s</td>
<td>d :--</td>
</tr>
</tbody>
</table>

Key Ab.

<table>
<thead>
<tr>
<th>1:</th>
<th>2:</th>
<th>3:</th>
<th>4:</th>
</tr>
</thead>
<tbody>
<tr>
<td>d</td>
<td>:m</td>
<td>s</td>
<td>1:</td>
</tr>
</tbody>
</table>

Every few singers could sing this at sight by staff notation. Tonic Sol-fa is comparatively little experience would sing it from their notation readily. It is a very simple musical exercise, repeated in two different keys, the key of A, and the key of G. The staff makes it like a passage in which four measures are simple, and four measures very difficult. A musician with a professional degree of experience can see the real state of the case, even he not without some scrutiny. The Tonic Sol-fa copy shows the whole truth in an instant. Without even glancing over it, the Sol-fa reader could begin singing the exercise. At the fifth measure he would sing the upper do, but instantly change it to mi, and the last eight measures would be nearly as easy to him as the first. He would know exactly what he did, and why he did it. Thus it is not strange that in England all the classical vocal music has been printed in the Tonic Sol-fa notation, and is sung by innumerable societies.
See Drugs, N. 

N APARTMAN. See Drugs, N. 

NEBRASKA.- The following were the State officers during the year: Governor, James W. Dawes, Republican; Lieutenant-Governor, A. W. Agee; Secretary of State, Edward P. Roggen; Auditor, John Wollicks; Treasurer, Phelps D. Sturdivant; Attorney-General, Isaac Powers, Jr.; Superintendent of Public Instruction, W. W. W. Jones; Commissioner of Public Lands and Buildings, A. G. Kendall. Judiciary, Supreme Court: Chief-Justice, Amasa Cobb; Associate Justices, Samuel Maxwell and M. B. Reese.

Financials.—The condition of the State finances, as shown by the reports of the State Treasurer and the Auditor of Public Accounts, is highly satisfactory:

Balance on hand Nov. 30, 1884..................$473,114.50
Amount received..................................2,707,378.84
Total amount received..........................$3,180,493.34
Balance in treasury Nov. 30, 1884.............$442,515.99

The State indebtedness is represented by the following bonds:

State relief bonds, due March 1, 1895...........$26,000.00
State funding bonds, due April 1, 1897...........$4,99,267.80
Total State debt..................................$4,99,267.80

The assessed valuation of the taxable property of the State in 1883 was $110,549,644.58, and in 1884 it was $123,615,886.95, showing an increase of $13,076,237.37. The rate of taxation for State purposes for the year 1883 was 7½ mills, and for the year 1884, 7½ mills on a dollar, and there was collected during that period the sum of $1,807,132.05.

Public Institutions.—The Home for the Friendless, near Lincoln, was opened Jan. 1, 1883, and has received 95 adults and 133 children. Of these, 75 children were surrendered to the home, of whom 57 have been placed in families in the State. The Deaf and Dumb Institute, organized in April, 1884, has received for instruction 211 pupils. During 1883 and 1884 the attendance was 141. The Institute for the Blind was opened in January, 1876, and has had 60 pupils. The building was intended to accommodate 50; the attendance during the last biennial period was 66.

From the report of the superintendent for the biennial term ending Nov. 30, 1884, it appears that at the date of last report, Nov. 30, 1883, there were remaining in the Hospital for the Insane, 273 patients. There were received during the two years 410 patients, making a total number of 888 that were treated during this period. Of the number treated 323 were discharged, 14 of whom were restored to mental health, 69 were much improved, 68 unimproved, harmless, and incurable were returned to their counties, 48 died during the two years, leaving in the hospital Nov. 30, 1884, 360 patients, which exhausts the utmost capacity of the present building. At the rate of increase for the past two years, it is estimated by the superintendent that not fewer than 600 applications for the admission of patients will be made during the coming two years. Additional room must be furnished.

Under the law regulating the management of the State Reform School, boys and girls under sixteen years of age, found guilty of any crime except murder or manslaughter, may be received. This school was established and intended, not for punishment, strictly speaking, but rather for education and reformation. The school has 93 inmates. In August, 1884, the contract was let for an additional building, at a cost of $37,410, which is now ready.

Needed improvements have been made at the State Penitentiary during the past two years, among which are the erection of a fire-proof hospital building, a more perfect water-supply, and thorough change in the system of sewerage and drainage, greatly improving the sanitary condition of the prison. The medical superintendence is excellent, and the state of health among the prisoners is good. Under the contract system, the convicts are furnished steady employment, and their wants are well supplied.

The warden, in his report of Nov. 30, 1884, gave the number of prisoners as 261. Since that time there have been discharged 175, the number received being 178. The total number confined in the penitentiary Nov. 30, 1884, was 259, and of that number 23 were for life.

Education.—The following statistics will be found of interest as showing the development of the common schools: Total number of children of school age, 209,403—boys, 106,398; girls, 103,005. Total enrollment, 137,618—boys, 71,860; girls, 65,758. Total number of teachers employed, 6,035—males, 1,904; females, 4,131. School-houses built in 1884, 309. Total number of school-houses, 3,462. Total value of school property, $2,788,335. The present permanent common-school fund amounts to $3,977,316.18. The temporary common-school fund showed a balance, in December, 1884, of $164,804.85.

The attendance at the State Normal School during the past two years has been 470. Number graduated, 89; the greater number of whom are now engaged in teaching in the schools of the State. This school is constantly growing in public favor, the attendance for the past two years being twenty per cent. greater than for any like period in its history. The attendance in all departments of the State University during the last term was 282. In the College of Medicine the attendance was 54.
NEBRASKA. 553

Railroads. — The following statement shows the number of miles, the assessed valuation per mile, and the total assessed valuations of railroads in the State of Nebraska, as determined by the State Board of Equalization, for the years 1888 and 1884:

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Pacific</td>
<td>450 T</td>
<td>$11,488.00</td>
<td>450 T</td>
<td>$11,488.00</td>
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<tr>
<td>and Republican Valley</td>
<td>164-9</td>
<td>$7,770.00</td>
<td>164-9</td>
<td>$7,770.00</td>
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<tr>
<td>Niles, and Black Hills</td>
<td>54-10</td>
<td>$4,051.00</td>
<td>54-10</td>
<td>$4,051.00</td>
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<tr>
<td>and Northern</td>
<td>178-9</td>
<td>$2,460.00</td>
<td>178-9</td>
<td>$2,460.00</td>
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<tr>
<td>Sangamon and Missouri River</td>
<td>192-9</td>
<td>$10,890.00</td>
<td>192-9</td>
<td>$10,890.00</td>
</tr>
<tr>
<td>and Southern</td>
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<td>$10,890.00</td>
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<tr>
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<td>180-66</td>
<td>$1,188.00</td>
<td>180-66</td>
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<tr>
<td>and Deck and</td>
<td>650-48</td>
<td>$3,980.00</td>
<td>650-48</td>
<td>$3,980.00</td>
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<tr>
<td>and Nebraska</td>
<td>105-96</td>
<td>$564.00</td>
<td>105-96</td>
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<tr>
<td>and Northwestern</td>
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<td>$684.00</td>
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<td>$684.00</td>
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<tr>
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<td>and Deck and</td>
<td>189-94</td>
<td>$4,317.00</td>
<td>189-94</td>
<td>$4,317.00</td>
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<tr>
<td>and St. Paul, and</td>
<td>101-47</td>
<td>$5,760.00</td>
<td>101-47</td>
<td>$5,760.00</td>
</tr>
<tr>
<td>and Nebraska</td>
<td>641.90</td>
<td>Total $25,680,926.48, 2560.71</td>
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</tbody>
</table>

Average assessed valuation, per mile... $6.756 21... $6.756 21

He railroads constructed in the State, during the years 1888 and 1884, were:

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<th></th>
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</tr>
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</table>

Average assessed valuation, per mile... $6.756 21... $6.756 21

and Department. — The number of acres of land leased by the State during 1888 and 1884 was 697,473; sold, 267,178; reverting to the State, 48,156; deeded by the State, 25,164; and 61 sold to the State, 45,685. The number of acres of all lands owned by the State, Dec. 1, 1884, was:

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>ACREAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>school of Mines</td>
<td>2,748,527.99</td>
</tr>
<tr>
<td>cultural College</td>
<td>89,069.07</td>
</tr>
<tr>
<td>variety</td>
<td>4,406.09</td>
</tr>
<tr>
<td>natural School</td>
<td>12,542.90</td>
</tr>
<tr>
<td>lands</td>
<td>3,369.87</td>
</tr>
<tr>
<td>territory</td>
<td>1,078.71</td>
</tr>
<tr>
<td>Total</td>
<td>2,907,177.04</td>
</tr>
</tbody>
</table>

The number of acres of indemnity school land received by the State is 71,392.83 acres. The following statement will show the amount of the yearly school fund from educational lands, plus $10,000, and the amount of the State's share of the annual interest on the bonds of the State, amounting to $3,000,000, at the rate of 6 per cent. The State has invested in securities, the annual interest which is $24,000, making in all $453,45 per annum. There are still vacant and unsold 1,475,088.13 acres of common-

THREE REPUBLICAN CONGRESSMEN WERE ELECTED. FOR THE AMENDMENT TO THE LEGISLATIVE ARTICLE OF THE CONSTITUTION, 61,697 VOTES WERE CAST, AND 17,766 AGAINST IT. FOR THE AMENDMENT TO THE EXECUTIVE ARTICLE, 22,297 VOTES WERE CAST, WHILE 44,488 WERE CAST AGAINST IT.

THE FOLLOWING WAS THE VOTE FOR PRESIDENTIAL ELECTORS: REPUBLICAN, 79,312; DEMOCRATIC, 54,991; PROHIBITION, 2,999; SCATTERING, 47. LEAVIT BURNHAM, REPUBLICAN, WAS CHosen REgent OF THE STATE UNIVERSITY, OVER D. T. SOVILLE, DEMOCRAT. THE LEGISLATURE OF 1866 HAS 25 REPUBLICANS AND 9 DEMOCRATS IN THE SENATE, 75 REPUBLICANS AND 18 DEMOCRATS IN THE HOUSE.

NERVOUS DISEASES. 

MIRAVICH. THIS IS THE RUSSIAN NAME FOR A PECULIAR NERVOUS DISEASE, HITHERTO UNDESCRIBED, WHICH HAS BEEN RECENTLY BROUGHT TO THE NOTICE OF THE MEDICAL PROFESSION. THE UNFORTUNATE SUBJECT IS OBLIGED TO IMITATE ANY SUDDEN SOUND, OR MOVEMENT, THAT MAY BE MADE BY A SECOND PERSON. HOWEVER RIDICULOUS THE ACTION MAY BE, THE PATIENT FEELS IRRESISTIBLY IMPULSED TO REPEAT IT AS NEARLY AS POSSIBLE. THE DISORDER IS SAID TO BE COMMON IN SIBERIA, WHERE IT WAS OBSERVED BY LIEUT. BUCKINGHAM, OF THE UNITED STATES NAVY, WHO DESCRIBES IT AS:

"While we were walking on the bank here, we observed our messmate, the captain of the general staff [of the Russian army], pass on the steved of the boat suddenly, and, without any apparent reason or remark, clap his hands before his face; instantly the steward and all the hands in the same manner, put on an angry look, and passed on. The incident was somewhat curious, as it involved a degree of familiarity with the steward hardly to have been expected. After this we observed a number of queer performances of the steward, and finally comprehended the situation. It seemed that he was affected with a peculiar mental or nervous disease, which forced him to imitate everything suddenly presented to his senses. Thus, when the captain slapped the paddle-box suddenly in the presence of the steward, the latter instantly gave it a similar thump; or if any noise was made suddenly, he seemed compelled against his will to imitate it instantly, and with remarkable accuracy. To annoy him, some of the passengers imitated pig grunting, or called out absurd names: others clapped their hands and shouted, jumped, or threw their hats on the deck suddenly, and the poor steward, suddenly startled, would echo them all precisely, and sometimes several consecutively. Frequently he would exasperate, bugling people not to startle him, and again would grow furiously angry, but even in the midst of his passion he would helplessly imitate some ridiculous sound or motion directed at him by his pitiful tormentors. He frequently shot himself up in his pantry, which was without windows, and locked the door, but even there he could be heard answering the grunts, shouts, or pounds on the bulkhead outside. He was a man of middle age, fair physique, rather intelligent in facial expression, and without the slightest indication in appearance of his disability. As we descended the bank to go on board the steamer, some one gave a loud shout and threw his cap on the ground; looking about for the steward, for the shot was evidently made for his benefit, we saw him violently throw his cap, with a shout, into a chicken-coop, into which he was about to put the result of his foraging expedition, among the houses of the steamer. We afterwards witnessed an incident that illustrated the extent of his disability. The captain of the steamer, running up to him, suddenly clapping his hands at the same time, accidentally slipped and fell hard on the deck; without being touched by the captain, the steward instantly clapped his hands and shouted, and, in powerless imitation, he fell as hard and almost precisely in the same manner and position as the captain. In speaking of the steward's disorder, the captain of the general staff said it was not uncommon in Siberia; that he had seen a number of cases of it, and that it was common about Yakutsk, where the winter cold is extreme. Both sexes were subject to it, but men much less the women. It was known to Russians by the name of "miravich."

The late Dr. GEORGE M. BEARD described similar phenomena witnessed by himself among the "jumpers" or "jumping Frenchmen" of Maine and northern New Hampshire. He ascertained that whatever order was given they were at once obeyed. Thus, one of the jumpers who was sitting in a chair with a knife in his hand was told to throw it away, and he threw it away quickly, so that it stuck in a beam opposite; and the same time he repeated the order to throw it, with a cry of alarm like that of hysteria or epilepsy. He also threw away his pipe, which he was filling with tobacco, when he was slapped upon the shoulder. Two jumpers standing near each other were told to strike, and they struck each other very forcibly. One jumper, when standing by a window, was suddenly commanded by a person on the other side of the window to jump, and he jumped up half his height from the floor, repeating the order. When the commands are uttered in a quick, loud voice, the jumper repeats the order. When told to strike he strikes, when told to throw he throws whatever he may happen to have in his hand. Dr. Beard tried this power of repetition with the first part of the first line of Virgil's "Aenéis" and the first part of the first line of Homer's "Iliad," and out-of-the-way words of the English language with which the jumper could not be familiar, and he repeated or echoed the sound of the word as it came to him in a quick, sharp voice; at the same time he jumped, or struck, or threw, or raised his shoulders, or made some other violent muscular motion.

Dr. WILLIAM A. HAMMOND, commenting on these cases, says:

"There is another analogous condition known by the Germans as Schießfreunthenheit, and to English and American neurologists as somnambulism, or sleep-walking. In one state it is a kind of stupor, when suddenly awakened, commits some incongruous act of violence, at times a murder. Sometimes this appears to be excited by a dream, in which the primum movens of the cause could be discovered. Thus, a sentry full asleep during his
watch, and, being suddenly aroused by the officer in command, attacked the latter with his sword, and would have killed him but for the interposition of the bystanders. The result of the medical examination was that the act was involuntary, being the result of a violent confusion of mind consequent upon the sudden awaking from a profound sleep. Other cases are cited by Wharton and Still in their work on medical jurisprudence, by Hoffmann, and by myself in "Sleep and its Derangements."

The following cases among others have occurred in my own experience: A gentleman was roasted one night by his wife, who heard the street-door bell ring. He got up, and, without paying attention to what she said, dragged the sheets off of the bed, tore them hurriedly into strips, and proceeded to tie the pieces together. She finally succeeded in bringing him to himself, when he said he had thought the house was on fire, and he was providing means for their escape. He did not recollect having had any dream of the kind, but was under the impression that the idea had occurred to him at the instant of awaking. A few years ago I had a gentleman under my charge who would attempt to execute any order given him while he was asleep by a person whispering into his ear. Thus, if told in this way to shout, he shouted as loud as he could; if ordered to get up, he at once jumped from the bed; if directed to repeat certain words, he said them, and so on. I am not able to give any certain explanation of the phenomena of "miryachit" or of the "jumpers," or of certain of those cases of sleep-drunkenness which seem to be of like character. But they all appear to be due to the fact that a motor impulse is excited by perceptions without the necessary concurrence of the volition of the individual to cause the discharge. They are, therefore, analogous to reflex actions, and especially to certain epileptic paroxysms due to reflex irritations. It would seem as though the nerve-cells were very much in the condition of a package of dynamite or nitroglycerin, in which a very slight impression is sufficient to effect a discharge of nerve-force.

NETHERLANDS, the, a constitutional monarchy in western Europe. The Constitution, proclaimed Nov. 3, 1848, vests the legislative authority in the States-General, composed of two chambers. The upper consists of 39 members, chosen by the provincial councils from among the highest class of tax-payers; the lower, consisting of 86 members, is elected by citizens paying from twenty to sixty guilders of direct taxes.

The Government.—The reigning King is William III, born Feb. 19, 1817, who succeeded his father, William II, March 17, 1849. The ministry is composed of the following members: Minister of Foreign Affairs, Dr. P. J. A. M. van der Does de Willebois; Minister of the Interior, Dr. J. Hoeksemkerk Az; Minister of Justice, Dr. Baron M. W. du Tour van Bellinshove; Minister of Finance, W. J. L. Grobbe; Minister of the Colonies, J. P. Sprenger van Eick; Minister of the Waterstaat, Commerce, and Industry, J. G. van den Bergh; Minister of War, Major-General A. W. P. Weitzel; Minister of Marine, W. F. van Erp-Tsalmam Kip.

Area and Population.—The area of the Netherlands is 12,648 square miles, or 32,999 square kilometres. The population in 1883 was 4,295,065, of which number 2,090,850 were males and 2,204,215 females. The number of marriages in 1888 was 25,619, of births 151,779, of deaths 99,383, excess of births 52,416. As returned in the census of 1879, the population was divided into 2,469,814 Protestants, 1,439,187 Catholics, 81,699 Jews, and 22,049 of other beliefs. The principal cities are Amsterdam, with 861,326 inhabitants; Rotterdam, with 166,000; and the Hague, with 181,417 on the 31st of December, 1888.

Commerce.—The total value of the special imports in 1882 was 837,680,000 guilders, as compared with 885,568,000 guilders in 1880; of the exports, 712,844,000, as compared with 647,975,000 guilders. Including the commerce with the Dutch colonies the imports amounted to 922,108,000, and the exports to 753,061,000 guilders. Of the imports, 290,713,000 guilders came from the German Zollverein, 276,065,000 from Great Britain, 198,692,000 from Belgium, 76,488,000 from Russia, 42,784,000 from the United States, and 53,108,000 from Java. Of the exports, 336,355,000 guilders went to the Zollverein, 155,688,000 to Great Britain, 112,854,000 to Belgium, 88,819,000 to the United States, and 88,467,000 to Java. The imports of articles of consumption in 1879 amounted to 292,900,000 guilders, exports 333,800,000; imports of raw materials 252,100,000, exports 141,600,000 guilders; imports of manufactured products 109,500,000, exports 80,400,000 guilders; imports of miscellaneous articles 161,300,000, exports 123,800,000 guilders; imports of precious metals 89,000,000, exports 8,100,000 guilders.

Navigation.—The total sailing tonnage with cargoes entered in 1888 at Dutch ports was 2,346,937 cubic metres, of which 797,600 were under the Dutch flag; in ballast 35,888 cubic metres, under the Dutch flag 19,202. The steam tonnage entered with cargoes was 8,750,949 cubic metres, of which 2,417,455 carried the Dutch flag; in ballast 153,508, of which 25,822 cubic metres were under the Dutch flag. The merchant navy on the 1st of January, 1888, counted 701 sailing-vessels, weighing 587,473 cubic metres, and 96 steamers, weighing 288,008.

Railroads, Posts, and Telegraphs.—The mileage of railroads open to traffic Jan. 1, 1888, was 2,001 kilometres, of which 1,063 belonged to the state.

The number of private letters forwarded in 1888 was 47,163,860 domestic, 14,283,835 international letters, and 30,383,883 post-cards, total 81,830,574; the total number of journals, 45,773,988. The receipts of the administration in 1888 were 4,924,389 guilders, expenditures 3,572,869 guilders.

The length of the state telegraph lines on Jan. 1, 1884, was 4,285 kilometres, the length of wires 15,714 kilometres; the number of dispatches in 1888 was 2,072,804 for the interior, and 1,274,483 foreign; the receipts 1,065,479 guilders, expenditures 1,546,397 ordinary, and 87,846 extraordinary.

Finance.—The budget for 1884 makes the total expenditures 148,590,729 guilders, of which 82,356,566 are on account of the public debt;
24,771,424 for the department of finance, including the estimated loss of 6,000,000 guilders in the redemption of silver coins called in under the act of April 27, 1884; 20,482,000 for the Ministry of War; 13,983,304 for the Ministry of the Interior; 81,819,023 for the Ministry of Commerce and Canals; and 11,682,915 for the Ministry of Marine. The total receipts are taken as 114,166,025 guilders, of which 89,550,000 proceed from the excise taxes on spirits and other articles; 25,928,123 from the land and personal taxes and patent dues; 24,450,000 from stamps, registration, and succession duties; 4,812,000 from customs and navigation dues; and the remainder from domains, posta, telegraphs, coast pilotage, railroads, etc. If the receipts fall below the expenses, the Government is empowered to issue treasury bills at the amount of 28,300,000 guilders, to cover the deficit provisionally.

The total amount of the public debt in 1884 was 1,004,922,250 guilders, including 10,060,000 guilders of paper money: 611,809,300 guilders bear interest at 2½ per cent., 90,519,050 at 3 per cent., 9,684,000 at 3½ per cent., and the rest at 4 per cent.

The Army and Navy.—The standing army in 1884 numbered on the lists 2,925 officers and 62,689 men. The active schutterijen, or militia, numbered 37,198 men; the sedentary, 77,103.

The navy in 1884 consisted of 23 ironclads, comprising 6 turret-ships with rams, 3 monitor rams of the first and 3 of the second class, 5 monitors of the second class, and 5 vessels for river-defense; 93 steamers, of which 28 were screw-corvettes, 12 paddle-steamers, 81 gun-boats, and 29 torpedo-boats; and 14 school-ships and 10 other vessels. The navy was manned with 6,921 men, not including 2,961 marines and 1,119 sailors in the East Indies.

The Colonies.—The colonial possessions of the Netherlands have an area of 658,136 square miles, and a population of about 29,000,000. Java and Madura, with an area of 131,758 square kilometres, contained in 1882 20,268,480 inhabitants, of which number 20,282,916 were natives. The native population of Sumatra, Borneo, Malacca, Biliton, Borneo, Celebes, the Moluccas, Papaua, Timor, Bali, and the other Dutch possessions in the South Seas, is estimated at about 8,400,000, their total area at 1,728,000 square kilometres. The number of Europeans in the Dutch East Indies in 1881 was 41,705, of Chinese 345,372, of Arabs 16,775, of Hindoos, etc., 9,514. Batavia, the capital, contained 92,497 inhabitants, Samarang 60,563, Soerabaya 119,592.

The colony of Surinam, or Dutch Guiana, has an extent of 119,921 square kilometres, and contained in 1883 a settled population of 53,855 souls. Curacao, or the Dutch Antilles, with an area of 1,180 square kilometres, had in the settlements 44,900 inhabitants.

The total receipts of the treasury in the East India colonies are put down in the budget of 1884 as 142,886,197 guilders, the expenses as 148,885,361 guilders, leaving a deficit of 3,999,164 guilders. This is a more favorable showing than has been made for a long time, the cost of the colonies to the mother-country usually amounting to 12,000,000 or 14,000,000 guilders a year. The increase in the income was due to an advance in the price of coffee, due to reports of a deficient crop in Brazil. The proceeds from the sale of coffee are estimated at 42,671,666 guilders, from the opium tax 21,307,500 guilders, from the land-tax 19,227,000 guilders, from customs 10,345,000 guilders, from railroads 5,316,000 guilders, from sales of tin 4,348,490 guilders, and from the salt duty 7,081,000 guilders. The budget for 1885 estimates the expenditure at 143,000,000 guilders, producing a deficit of 1,255,000 guilders, without reckoning the cost of new naval arms. An increase in the tariff and various economies were proposed, also certain taxes to provide 5,750,000 guilders for construction of railways.

The receipts of the colony of Surinam are estimated at 1,226,898, and the expenditures at 1,465,827 guilders. The receipts and disbursements in Curacao balance at 886,486 guilders.

The imports of merchandise on the account of the state in 1881 were in value 8,381,600 guilders, of specie 260,000, total 8,511,000 guilders; on account of private individuals 139,845,000 guilders of merchandise, and 10,345,000 guilders specie, total 150,190,000 guilders; total imports of merchandise 148,050,000 guilders, of specie 1,390,000 guilders, total 149,440,000 guilders; total exports of merchandise 127,787,000 guilders, of specie 1,389,000 guilders. The sales of coffee on Government account in 1881 were 28,247,000 guilders in value, of tin 8,822,000 guilders; the sales of coffee on private account 18,049,000, guilders; of sugar 53,845,000 guilders, of indigo 8,410,000 guilders. Other exports were skins of the value of 1,712,000 guilders, cloves and nutmegs 2,565,000 guilders, rice 1,110,000 guilders, tobacco 20,120,000 guilders, tea 1,542,000 guilders, pepper 7,326,731 guilders, gutta-percha 6,101,398 guilders, gum 5,419,423 guilders, pepper 3,925,707 guilders, and others 3,732,647 guilders. The tonnage entered at the East Indian ports in 1881 was 1,960,547, cleared 1,985,158. The total tonnage of the colonial merchant-ship was 188,266.

The length of railroad lines in operation at the beginning of 1884 was 707 kilometres. The receipts in 1883 of the line of the East Indian Railroad Company were 8,912,496 guilders, expenses 1,378,291 guilders; the receipts of the state lines 1,785,291 guilders, expenses 1,006,015 guilders. The number of private internal letters carried in the mails in 1883 was 2,909,130, the number of foreign letters 851,499. The length of telegraph lines belonging to the state in 1885 was 5,879 kilometres.
the length of wires 7,589 kilometres, the number of paid messages 869,165.

The natives in the coffee districts of Java are obliged to maintain a certain number of coffee-plants and to sell the produce to the Government at the price of fourteen guilders per peck of 133 pounds. The quantity delivered to the Government under this arrangement is from 800,000 to 1,000,000 pecks a year. Sumatra produces from 100,000, to 150,000 pecks of coffee, inferior in quality to the Java growths, which finds its principal market in the United States. Maccassar exports about 120,000 pecks a year of excellent coffee from the Celebes and the eastern islands of the archipelago. The Government crop from Java is sold at auction in Amsterdam and Rotterdam, except 100,000 pecks which are sold in four lots in Java. The private cultivators sell their crop in Samarang and Soerabaya. The tobacco-culture is carried on chiefly in Java and Sumatra. In 1880 6,805,000 kilogrammes were exported, in 1881 13,538,000, in 1882 16,538,000, and in 1883 over 17,000,000. The Sumatra tobacco, used for cigar-wrappers, brings four times the price of the Java product. Cocoanut-oil has been exported of late in large quantities. The tin on the island of Banca is shipped on Government account to Holland; that of Billiton is exploited by a mining company and sold at auction in Batavia. The center of the pepper-trade is Padjad in Sumatra. The tea-culture is in private hands; notwithstanding the pressure of taxation, Java tea is cheaper than the Chinese product. The cultivation of cinchona-bark has extended since it passed from Government control into the hands of individuals. Several companies have laid out large plantations. Sugar was exported in 1883 to the amount of over 4,000,000 pecks, chiefly to London. The principal imports are cotton cloths, petroleum, beer, wine, liquors, butter, flour, iron in various forms, glass and crockery, paper, etc. The imports of cotton fabrics in 1882 were in value 28,938,000 guilders, coming mainly from Holland and England. Petroleum is brought from the United States in sailing-vessels, which take as return-freight sugar to England through the Suez Canal. The chests in which petroleum is brought are filled with cocoanut-oil for export. The import trade is in the hands of a few large Dutch houses which sell to the numerous Chinese traders on the islands. In consequence of a petition to the Government in 1881 of the merchants of Batavia, who complained of fraudulent bankruptcies, the Chinese dealers have begun to keep their books in the Malayian instead of in the Chinese language.

The army of the Netherlands East Indies is recruited by voluntary enlistment of Europeans and natives. The effective strength on Jan. 1, 1883, was 1,832 officers and 29,030 soldiers. Of the rank and file 12,976 were Europeans, 11,112 Africans, and 15,841 natives. The civic guards and other named bodies outside of the regular army counted 3,870 Europeans and 5,451 natives.

The appointment in January, 1884, of Otto Van Rees as Governor-General of the East Indies, signified the adoption by the Heemskerk ministry of the colonial policy advocated by the Liberals. The policy to be followed was defined by the Minister of the Interior in the general discussion of the budget of 1884 as the maintenance of the system of coffee cultivation on Government account, and the accordance to the natives of the option to have their lands now possessed in common converted into individual property or retained under the tribal tenure.

The War in Aceh.—When Gen. Van Swieten captured the seat of the Sultan of Aceh, Jan. 24, 1874, it was believed that the enemy was subjected, and that Aceh, like the rest of Sumatra, would soon be transformed into a Netherlands possession. After the expenditure of hundreds of millions and the loss of thousands of lives in the intermittent war, the remnants of the Acehese are as far from submitting as ever, and seem to prefer annihilation to the loss of independence. The Dutch Government entered into the war as a precautionary measure to prevent the intervention of any foreign power in the Malaysian Archipelago. The Acehese had treated with indignity the flags of other nations as well as that of Holland. England, by the agreement of Nov. 2, 1871, withdrew the guarantee of independence to the Prince of Aceh which it required Holland to agree to in 1874. Negotiations were opened to induce the Sultan to acknowledge the sovereignty of Holland. Evading these, he applied for assistance to Italy and the United States. Fearing American intervention, the Dutch threatened war if he longer refused their terms, and sent the unfortunate expedition of 1873, followed in November of the same year by the second expedition under Gen. Van Swieten. The Dutch commander, after the capture of Kraton, the residence of the sultans, and the death of the young ruler of Aceh, proclaimed the annexation of the country, whereas the original demand was only for the suzerainty. He expected, by remaining in Kraton, to establish gradually a trade with the natives and win their friendship, and hence did not push his military advantage, from which course he was deterred, moreover, by the ravages of the cholera in his army. Leaving a detachment of 8,000, who were ordered to remain on the defensive, he withdrew the rest of the troops from Aceh. Gen. Pel, the commandant, was soon compelled by the enemy to extend his lines and undertake punitive expeditions against offending chiefs. He increased his force gradually to 8,000 men and gained important successes, when he died in 1876 and was succeeded by Gen. Wigga. The Dutch and the Acehese both ceased active operations for a time, but in 1878 the enemy, under
their accomplished Hindoo leader, Habib Ab-
doe'r Rahman, attacked the chain of posts and
menaced Kraton. Gen. Van der Heyden pursued
and destroyed this force and purchased the
submission of the leader, who had guided the
diplomatic and strategic affairs of the Acehene-
ese from the beginning, with an annual pension
of 80,000 guilders. In the spring of 1879
the Dutch commander resumed the campaign.
Instead of inclosing a district by a chain of out-
posts, he determined to occupy the important
strategic points, and guard only his lines of
communication. The men that had garrisoned
the line of posts were set free to form flying
columns to patrol the country, and prevent
hostile outbreaks. In 1879 he had a force of
10,400 men. In 1880, believing his purpose
accomplished, he reduced it to 6,000 men. The
Governor-General was not satisfied with the
pacification of the country secured by the mili-
tary occupation, but wished to affirm the exis-
tence of a state of peace, and thus diminish
the complaints in Holland at the cost of the
occupation. He resolved to replace the mili-
tary with a civil administration. As Gen. Van
der Heyden refused to countenance the change,
pressure was brought upon him that caused
him to resign the command. Civil officials
were installed and, in order to reduce military
expenses, the flying columns were withdrawn,
and the small posts along the routes of com-
munication called in. The Acehenese, who
had armed themselves with Beaumont rifles,
renewed their attacks and depredations, while
the military, restricted in their powers by the
official proclamation of a state of peace, were
restrained from quelling the hostile outbreak.
The situation soon became so unbearable that
the civil governor was superseded by one who
had been trained to military life. A more
energetic course of action was taken, and dur-
ing the year 1884 sanguinary conflicts with the
Acehenese guerrillas frequently took place.
The population of Netherlands India for 1883
gives the extent of the district of Aceh and its dependencies as 3,712 square
miles and the population as 474,500 natives,
8,510 Chinese, 479 Arabs, 1,129 of other Ori-
ental races, and 288 Europeans. Great Aceh,
the ancient seat of the sultans, which is the
proper object of the conflict, has an area of
only 100 square miles. Before the war it pos-
sessed a population of from 300,000 to 400,-
000, but in 1880 the number was already
reduced to about 50,000 souls. The territory
occupied by the Dutch had a length between
the farthest outposts from north to south of
twenty-three miles and an extreme breadth of
sixteen miles. The unsatisfactory results of
the efforts of the Dutch to subjugate the coun-
try are explained by the frequent changes of
commanders and systems, which allowed none
of the systems to be fairly tested, and by the
action against the vassal states before Aceh
itself was reduced to order. The losses in the
field were very small, but the effects of the
unheathful climate necessitated the constant
withdrawal of troops to fill the hospitals and
be replaced by fresh forces. Although re-
cruiting was extended on account of the war,
there were times when almost the whole fighting
force of the East Indian army was in
Aceh. The cost of the war has exceeded
800,000,000 guilders.

The Nisero Affair.—The English merchant-ship
Nisero, bound with a cargo of sugar from
Soerabaya to England, was stranded on the
coast of Aceh, Nov. 16, 1883. The crew,
twenty-five in number, succeeded in reaching
land in safety. They were plundered by the
Malays of the coast, and then delivered by the
Chief of Pangah, in whose territory they found
themselves, to his sovereign, the Rajah of Te-
non, who is himself a vassal of the Sultan of
Aceh. A Netherlands ship of war appeared
upon the scene, and its captain paid 80,000
guilders to the Rajah, who thereupon released
the captain, Wodhouse, with the Chinese
cook, who speaks Malay, on parole, to explain
his terms. The British ship of war Pegasus
was sent from Singapore with Consul Kennedy,
and further offers of money were made through
trusty agents. There were formal complaints
to the Netherlands Government, which had al-
ready offered a large sum for the release of the
captives. A Dutch naval force blockaded the
ports of Tenom, and an infantry force of 1,300
men destroyed the Rajah's capital and a num-
ber of villages, January 7. At their approach
the Rajah escaped with his captives two day's
journey up the country. An English officer
had an interview with the Rajah's adviser,
February 24. It was made apparent that the
Rajah's object was to embroil England and
Holland in order to secure better political con-
ditions for himself. His ports of Tenom and
Babun were formerly the centers of a flourish-
ing trade, and the Rajah enjoyed a lucrative
monopoly of the pepper and betel-nut trade.
His territorial possessions were the part of
Aceh that was annexed to the Nether-
lands. The Rajah made submission volunta-
arily to the Dutch authorities. Soon after, he
was accused of conniving in an attack on a
Dutch garrison. As a punishment Babun was
sacked and the ports of Tenom closed to trade.
In May, 1888, a final blow was struck at the
trade of Tenom, by a decree that confined gen-
eral trade to seven ports in Aceh—two only
on the west coast—and limited the coast-trade
to vessels of fifty-six tons. The Rajah pro-
ferred friendship for England, and expressed a
desire to embrace a British protectorate. The
conditions on which he offered to release the
crew of the Nisero were the restoration of
freedom of trade, an indemnity of $400,000
for the destruction of Babun and Tenom, the
banishment of certain Malay enemies of the
Rajah, and a quantity of arms and goods.
The English negotiators were favorably im-
pressed with the terms of the Rajah, which
would open the pepper ports to English trade.
NETHERLANDS, THE.

utch, on the other hand, were not dis- to allow the English to gain either a relia or a political footing on the island. Weening of the Acheenese ports to trade on the grounds that it would the rebels to supply themselves with nd ammunition. The Dutch authorities a ransom of $150,000 for the release of oners, but the Rajah spurned the sug- of mercenary motives. The British ement seemed disposed to take advan- the situation that the pirate chieflain ated, for the purpose of resuming po- power in Sumatra and promoting the and Singapore trade. Lord Granville, il 29, expressed the conviction that the sailors would not be released "unless ferences between the Netherlands and sheese be adjusted on an equitable Great Britain entered into the con- of 1824 and 1871, with the view of g freedom of trade and the maintenance c. England had refused to intervene on of the Rajah of Tenom, but now offered nd offices only if there be an agreement Government and the Malay chiefs, to or for the closing of thirteen miserable of lingering warfare in the interests of justice, and the facilities of commercial area. The answer of the Netherlands, 22, date May 9, declined mediation, plead- their mighty neighbor that if barba- dentates can secure British intervention r behalf, by piracy and kidnapping, such would increase to the general detriment e and commerce. The colonial authori- nd that they could not accomplish any a land expedition, because the Rajah the captives away into the interior, but gled to any kind of compunction by means blockade, which would hinder the free ent of commerce, but not less to the ce of the Netherlands than of other. The authorities of the Straits Settle- the opinion that no agreement was possible unless the English ement intervened to liberate the Acheen- e and protect the Rajah. In a dispatch 31, Lord Granville demanded the re- of the restrictions on commerce, which the general trade to particular ports, the coasting trade to vessels of small. The fear of the importation of mu- for the Acheenese rebels, he intimated, concern of British traders. At about int the Rajah, who was officially de- in the dispatches from the Straits Set- as "high-minded," "straightfor- and "of high character," and had addressed by the English negotiators in y and courteous language, grew impat- the delay of the expected interference aside the mask of friendship, and ed to put the captives to torture and if the Dutch attacked him, ending his ith a request that the English, whom he declared to be no match for the Dutch in negations or anything else, should write him no more, for he knew that their councils were at an end. This insulting communication de- the plans of those who wished to derive political and commercial advantages from the situation, and caused the English Government to confine its demands to considerations af- the fate of the captive crew, and aban- the role of protector of the Rajah of Ten- in particular, and Acheenese rebels in gen- eral. The next proposition of the English Government was accepted reluctantly, as pre- erable to the preceding propositions of English mediation and of a joint guarantee to the Rajah. In accordance with the agreement reached in July, the Rajah was notified that, if he did not release the prisoners, a joint English and Dutch expedition would compel their release, but in return for their voluntary liberation the Dutch Government would raise the blockade and pay him an indemnity of 100,000 guilders. Baffled in his political schemes, in which he probably acted as the tool of the central Acheenese, the Rajah accepted the offered terms and released the prisoners in September. Twenty only of the crew were left, the others having died in captivity from starva- tion and other privations.

The Succession to the Throne.—The death of the Prince of Orange left the royal line without male descendants. (See OBITUARIES, FOR- mon.) Under the family laws the duchy of Luxembourg goes, in the event of the death of King William III without male issue, to the deposed Duke of Nassau or his heirs, while the throne of Holland passes to the Princess Wilhelmina, the King's only surviv- ing child, born in 1880. The prospect of a long regency while the question of constitu- tional revision, which has been before the coun- try for a year or two, is still unsettled, impelled the Chambers, in December, to adopt a bill to modify the Constitution in such a manner as to remove the restriction that forbids a revision of the Constitution during a regency, leaving it in force, however, in respect to the clauses regulating the royal succession.

The Elections.—Elections to the Second Cham- ber took place in November, resulting in an accession of anti-Liberals, which rendered the formation of a majority difficult. This re-en- forcement of the ultra-Calvinist element com- pelled the abandonment for the present of the scheme of constitutional revision. The minis- try determined to seek to re-establish the financial equilibrium, present a bill lowering the parliamentary franchise, and then dissolve the Chambers, in the hope of securing a working majority.

Financial Policy.—In July a syndicate was in- trusted with the flotation of a new 4 per cent. loan of $60,000,000 guilders, to cover past defi- cits at about par. Among the measures pro- posed for the prevention of new deficits the ministry introduced a bill to reorganize the
state lottery so as to produce 601,400 guilders annually, instead of 478,000 guilders. On April 27 a monetary act was passed authorizing the Minister of Finance to melt down and sell 24-guilder pieces up to the amount of 25,000,000 guilders. This law was passed to prevent the depreciation of the Dutch currency. Under the existing circumstances every one may discharge his debts in either gold or silver coin, and every one can have gold coins, but not silver. The Minister of Foreign Affairs issued a circular to the Dutch diplomatic representatives in November, in which he said that the Government would not avail itself of the permission unless the gold reserve of the Bank of Holland fell below 5,000,000 guilders. The circular expresses the conviction of the Dutch Government that the remedy for the present inconvenient state of things lies in the adoption of bimetallism on a large scale.

NET-MAKING. The art of net-making by hand, essentially as it exists to-day, is prehistoric. The ancient lake-dwellers of Switzerland used needles, or more properly shuttles, such as are found in every fisherman’s kit, and fragments of ancient nets have been found made, apparently, precisely as fishermen make them now. The art was practiced in both continents, and was apparently discovered by races that, so far as we know, could have had no communication with one another.

Some of the different shapes of needles are here indicated. They are made of wood, bone, or metal, and the size is limited only by that of the required mesh. To charge the needle with thread, a turn is taken around the time A in the eye of the needle, whence it is passed down one side through notch B in the end, thence up the other side round the time, down through the notch again, and so on until the needle is full. In the double-eyed needle of course turns are taken alternately around the two times.

To secure uniformity of size in the meshes, sticks—variously known as “mesh-sticks,” “spools,” or “pins”—have been made of different forms, round, square, or pear-shaped in section, according to the taste of the maker. The usual length is eight to ten inches. Once around the mesh-stick makes a half-mesh. A stick two inches in circumference will make a mesh of four inches—one inch on each side.

The nomenclature of netting varies somewhat with localities. In England, to make a net is to “braid,” “brest,” or “breathe” it. “Over” is used instead of “wide,” in speaking of a net. “Accres,” “false meshes,” or “quarters” are meshes added to a row for the purpose of widening (Fig. 7). “Stole” or stolen meshes are taken up in order to narrow (Fig. 8). “Dead netting” is plain work without either accres or stole. In this country these terms are unknown. The parts of a seine are the head, foot, wings (end section), and “bag” (central section). A net is so many feet “deep.” Short ropes at the ends of the seines are brails.

The knot that forms the intersection of the meshes is the same in all cases. It is known, however, by various names, as “weaver’s knot,” “fisherman’s knot” or “bend,” “becket-hitch,” “sheet-bend,” “seine-knot.” A shows it before tightening, and B after. It may be made with two ends of line to fasten them together securely, or through a “hitch,” as the extreme end of a loop or mesh is termed by seamen. The method of making it through a mesh is that necessarily employed in netting, and in its most easily explained form is as follows: To begin a net, such as is suitable for a seine or a hammock, make a loop in the twine (B, Fig. 8). The size of
immaterial, but once around the meshes gives an even start. Through this take as indicated in Figs. 3, 4, and 5. d the twine as shown in Fig. 3, with the loop downward till its bight the corner of the stick (Fig. 4); e, turn of twine (C, Fig. 4) over the.

When the desired number has been completed, the third row is made by working back on the second row. That is to say, the first stitch of the third row is made through the last mesh of the second row, and so on, back and forth, adding the successive rows until the net has been made as long as required. In a small net, say seven meshes wide, the meshes by this process will be made in order as numbered, the first two rows being made together in a string as described.

This makes a net with its meshes in diagonal rows as seen in seines and fishing-nets generally, and in netted hammocks. Nets, whose meshes are at right angles with the sides, as in tennis-nets, are made with the same stitch, but the work is started differently. A corner mesh is first made; and in order to make it four stitches must be taken as follow:

other in the same way, and through her, until a long string of them is the net is to be sixty meshes wide, as must be made after this fashion. read out on a table, with the possibly meshes at the beginning removed, this will look like Fig. 6, forming in fact the rows of the net that is to be.

Make a large loop, which can be attached to some convenient point (A, Fig. 7). In the bight of this make two half meshes, the knots when finished lying one on top of the
other (marked 1 and 2 in the illustration). In the bight of No. 3 make No. 3, and in that of No. 1 make No. 4. This last is the first corner mesh. Next make No. 5 (also in the bight of No. 1), the two knots lying on top of one another, and Nos. 6, 7, etc., as shown. The widening process is repeated at the end of each row, until the net has reached any desired width. This done, it becomes necessary to "narrow" at one side, and this is effected by taking the last stitch of the row through two meshes, instead of taking two stitches through one mesh, as is done in widening. Fig. 8 shows the course of the needle in narrowing, and 6 shows the completed corner. In order to prevent mistakes, it is well to tie a bit of colored cord or other mark at the edge where the widening stitch is to be taken. The rows are now made uniformly back and forth, until the desired length is reached, when "narrowing" takes place at both edges, until the fourth and last corner is reached. It will be noted that there is an apparent contradiction of terms in the foregoing directions. The diagonal rows are made parallel with the edge of the net, while the square rows are made diagonally. The result, however, is as shown (Figs. 9 and 10).

There is a more rapid way of making the hand-stitch than that here described, but it is not practicable to illustrate it, though it is easily learned by example. The stitch is described, however, to produce more uniform work than the other.

A scoop, circular, or bag net, is begun in the same way as the square-meshed net described above. When a square of sufficient size has been made, say, six or eight inches, the net becomes continuous, going round and round until any desired size is reached. Widening or narrowing may be effected as necessary, as shown in Figs. 10 and 11. This is the regulation fisherman's scoop; it is possible to make a similar net by using a number of meshes together at the top of the set, and then netting round and round them, widening as the net grows. All this kind are made by hand, no machinery having been invented for doing the work.

The nets thus far described are made with the twine, whose length is limited only by the amount that the needle will hold. The square mesh is attached by a knot, as in Fig. 2. In the case of a hammock, when the mesh is uniform in one direction, the ordinary stitch may be taken with the end of the new thread, on top of the knot last made. The lower ends should not be cut off close until the firmness is proved. In case of a mistake, a break in the body of the net, the faulty mesh may be cut out and new ones made in its place, in a manner that will suggest itself to any one who has learned the regular stitch.

In a netted hammock the long cords or "guys" that support the ends are merely enlarged meshes. They are best made of a uniform size and length by winding the twice round and round the mesh-stick a sufficient number of times to insure the required length before taking the usual stitch. When making the rows, a number of meshes may be carried on the stick at once. In other words, it is not necessary to slip each mesh off from the stick as soon as it is made.

In pulling the knots tight, the fingers are soon cut or chafed by the thread, unless a Slave is worn. This may be omitted, however, if the pull is delivered with the hand grasping the needle and thread, and the needle pointing directly at the knot last made.

Machine-made nets differ from hand-made in that one thread or set of threads, carried as bobbins, forms the warp, while another set forms the woof. A net-making machine was patented in England as early as 1778, but net
NET-MAKING.

In thirty years has the trade been applied in this manner. The machines in the United States are those of fallen, R. Arnold, and Jouannin, a.

The last named, with certain improvements, is regarded with by the large manufacturers. Such may necessarily complicated, and no idea of their detailed working can be understood, however, that with two or sets of threads, machinery may be so that the regulation seems to be the only one that the requirements of the case. In the warp thread is, for distinctness, k, while the woof is merely outlined.

of open black loops being made by pins or hooks, the other series, with many ingenions and self-acting devices to pass over and through them.

The number of continuous threads tied to two, as in the illustration, but indefinitely multiplied and supplied with sills or spools on which the thread is thus, in the Jouannin machine, two weaves are used, marked a and b. Fig. a threads are drawn into simple

![Diagram](image)

r and through which the b threads by means of an ingenious arrange-<br>—one hook to each mesh—which b threads, pull them through the a them a twist, and pass them over ola. This forms the knot, which is tightly tightened, and a repetition of the reduces successive rows of meshes at rapidity. Nets of all kinds and up circular and scoop nets, are now machinery, and sold at a price which easily driven the hand-made nets out ade. Few American fishermen who a reach of a market now do more in their own nets, but something of a as sprang up of late years for handsmocks, tennis-nets, and the like, and steers have learned the stitch as a fancy-work affording gentle exercise reasable pastime. White and colored adorned by all dealers, in a great va-<br>untiful shades, and, in many of the variety-shops, needles and mesh-sticks are kept in stock. These last, however, are easily made by any one who can use the common wood-working tools.

NEVADA. State Government.—The following were the State officers during the year: Governor, Jewett W. Adams, Democrat; Lieutenant-Governor, C. E. Laughton; Secretary of State, J. M. Dormer; Treasurer, George Tully; Comptroller, J. F. Hallock; Attorney-General, W. H. Davenport; Superintendent of Public Instruction, C. S. Young; Surveyor-General, C. S. Preble. Judiciary, Supreme Court: Chief Justice, Thomas F. Hawley; Associate Justices, O. R. Leonard and C. H. Belknap.

Constitutional Amendments.—The Governor, in his message to the Legislature of 1886, says:

Your attention is called to the fact that five amendments were favorably passed upon by the last session, which will come before you for your consideration. If you adopt any of them, it will be necessary for you to provide the mode of submitting the same to a vote of the people. The first amendment changes the time of the assembling of the Legislature from the first Monday in January to the first Monday in February. The second amendment requires naturalization six months before the election; a residence of one year in the State, instead of six months, and a residence to ninety days in the county, instead of thirty, as necessary qualifications for an elector. The third amendment changes the mode of amending the Constitution by requiring the vote of but one instead of two sessions of the Legislature to submit the question to the people, and by making two thirds of each House, instead of a bare majority, necessary to submit to the people such amendment. The fourth and fifth amendments pertain to the mode of investing our school funds. Under our present Constitution, the school money derived from the sale of lands and other sources can be invested in United States and Nevada State bonds only. As the interest on an investment in United States bonds is only three per cent, per annum, it was thought by the last session of the Legislature best to extend the class of bonds in which school moneys could be invested. It seems, however, they could not agree upon any one plan, and therefore adopted two amendments for your consideration, one of which you will doubtless submit to the people and reject the other. One of these amendments directs that the school moneys shall be invested "in United States bonds or bonds of this State, or the bonds of such other State or States as may be selected by the boards authorized by law to make such investments." The other amendment provides that the school moneys may be invested "in United States bonds, the bonds of this State, or such other State bonds or other securities as may be authorized by law."

Consolidation of State and County Offices.—On this subject the Governor says:

I simply give expression to the general demand of popular sentiment throughout the State, when I recommend that our Constitution be so amended as to reduce the number of State officers, and thereby economize in State expenditures. Nor is there less need of the consolidations of county than of State offices. The whole amount of taxes levied for the support of the State government for the year 1888, including Orphans' Home, Deaf, Dumb, and Blind, State Prison, Insane Asylum, salaries of officers, and all incidental expenses, was, in round numbers, $349,000, while the amount levied for conducting the fourteen county governments for the same year was $814,000. Among the statutory measures that will most effectually economize county expenditures, is the consolidation of judicial districts.
Other Recommendations.—The Governor recommends a constitutional amendment by which nine jurors may find a verdict in criminal causes, as is now the case in civil suits in this State. He also recommends extending the term of county officers from two to four years, and greater uniformity in the laws relating to county government, saying: “Under the present laws, we find one county (Ormsby) governed by the general salary law that has been in force for four years, but now repealed except as to this county; two counties (Washoe and Esmeralda) acting under a special salary law; five counties (Storey, Eureka, Elko, Humboldt, and Lander) acting under the law usually known as the Foley Fee Bill, and the other six counties are governed by the old fee-bill act that was in force before the passage of the salary law.”

Agriculture.—Reviewing the operations of 1885, a San Francisco journal says:

It will surprise a great many to look over the figures that have been collated, and see the amount of acreage in cultivation, the great variety of produce in cereals and fruits, and the adaptability of a large portion of Nevada to cattle-ranges. Being mountainous, it is dotted here and there with valleys and plains, much of the soil of which is very fertile and will yield its yield much per acre as the average arable land of the country, which, in addition, is certain of being well watered by the mountain-streams. It is peculiarly well adapted to the growing of such fruits as are indigenous to the temperate zones, and the problem of their profitable production has already passed the experimental stage. The dairy interests are also being developed; so that the decadence of mining—if it should prove to be more than temporary—will be accompanied by a substantial growth of the agricultural and live-stock interests, which as they, particularly the former, are regarded as the chief source of the prosperity of a commonwealth, will no doubt result, in future years, in giving to Nevada a greater meed of solidity than she could ever hope to receive from her mining interests alone. Of the 100,000 acres of land devoted to agriculture in the State, the cultivation of barley requires about one third annually, only about 100,000 bushels of wheat being raised, while over 500,000 bushels of barley were produced during the last year. Oats, potatoes, hay, apples, peaches, pears, plums, cherries, apricots, grapes, strawberries, gooseberries, and other fruits, vegetables, and cereals occupied the remaining acreage, and good crops were in the more fertile regions where irrigation was available.

Grazing.—The State of Nevada, notwithstanding its sterility, is a fine grazing country. Sheep-walks and cattle-ranges are numerous, and it is estimated that there are not fewer than 1,000,000 head of cattle in the State, 100,000 head of horses, and 500,000 head of sheep and goats. The portion devoted to grazing does not exceed four of the area of the State, and, were it stocked to its full capacity, the income from this source would be near $10,000,000 annually. Its population is not above 50,000; the income of stock alone is not less than $50 for each person living in the State, and, if fully stocked, $200 per capita. The stockmen realize the advantages of this State as a beef-producing country, and are fast bringing it into use. One of the finest stock-ranges available is that section of the State lying between 38° and 39° north range 33° and 36° east, containing 15,000 acres. Following the meanderings of the Humboldt river, it extends about five miles along that stream, with not less than five miles average width. Much of it on the river will produce a crop of grass on irrigation, and, in fact, in such last, fine wheat has been grown on the “bench-land.” But the produce of market makes grain-raising less profitable than stock-raising.

Finances.—The report of the Comptroller for the year ending Dec. 31, 1884, shows property-tax, $248,078.11; tax on personal estate, $11,854.19; from miscellaneous sources, $31,917.94. The net amount of cash in the State Treasury, by the several cents the year footed up $394,983.77; receipts from all sources, $524,557.30; appropriations from different funds of the balance in the treasury, $861,195.87; amount expiring the fiscal year 1885, $571,831.82 assessed value of all the real and personal property in the State for the year was $1,172,861. During the year the gross value of the mines was $7,487,634.25. The State levy, as now fixed by law, on each $100 of taxable property cannot be reduced, in the opinion of the Comptroller. He says: “It will not be amiss to say that there is not a diminution of the assessment of property; the tax upon property can be increased, the rate of taxation proportionately reduced, and equal and exact justice as for gross injustice by a compliance with the law on the part of assessors. The present county is probably assessed at its cash value, but in other counties, it is evident that the tax is lower than the paid tax for the same period, as the average tax per $100 of property in the county is far below its value.”

The depression in property values 1884, as compared with 1883, is $1,116 in net proceeds of mines, $189,721.50 State for financial years,” says the Comptroller, “had less taxable values and a much lower rate of taxation than at present. The State of Nevada, instead of being bankrupt, man nor corporation a dollar, and its indebtedness is all to her irreducible funds, and the interest she pays all the support of her public schools; the debt of Nevada, over and above cash applicable to its payment, does not amount to six dollars per capita of its population.

Political.—A Republican State Congress meeting in Virginia City on April 20, delegates to the National Conventive party. It put forth a platform containing the following resolutions:

That the Republican party has at all times and still is, the friend and protector of law, and such consider the advent of the Chinese...
NEVADA.

New Brunswick. For the latest information, see the article in the "Annual Cyclopaedia" for 1866. That article was written after the adjournment of the Legislature, which has not since convened, and there are no new transactions or statistics for the current year.

New Hampshire. Statistics. — The State is between longitude 42° 41' and 45° and 11° N., and longitude 70° 40' and 72° 28' W. Length, 168 miles; width, 20 to 90 miles; area, land surfaces, 9,005 square miles; lakes and ponds, 220 square miles; rivers and smaller streams, 80 square miles; total, according to Census Bureau, 9,305 square miles. This territory includes all of Connecticut river along its western border, and half of Piscataqua river on the east. Population, in 1880, 94,991; increase from 1870, 26,091, or 9 per cent.; males, 170,526; females, 175,486; native-born, 900,997; foreign-born, 46,584 (increase of nearly 50 per cent.). Males of military age (eighteen to forty-four, both inclusive), 70,410; males of voting-age (twenty-one and over), 105,138. Number of dwellings in the State, 66,381; families, 80,296; minors, 180,837, or 17 to a family; persons to square mile, 38-39; dwellings, 79-99; families, 8-99; persons to a dwelling, 5-97; to a family, 4-92; acres to each person, 16-61; to a family, 71-79; number of farms in the State, 32,181; acres of improved land, 2,086,112; value of farms and buildings, $75,504,369; farm-implements, $3,092,344; live-stock, $6,618,584; value of all farm products, $18,474,360. Acreage and amount of farm products, 1880—barley, 3,460 acres, 77,877 bushels; buckwheat, 4,038 acres, 94,090 bushels; Indian corn, 86,533 acres, 2,171,985 bushels; oats, 29,246 acres, 1,017,620 bushels; rye, 3,137 acres, 34,939 bushels; wheat, 11,424 acres, 169,316 bushels; hay, 588,069 tons; hops, 28,955 pounds; orchard products, $72,921; potatoes, 3,986,626 bushels; wool, 1,069,599 pounds; milk, 5,793,128 gallons; butter, 7,947,773 pounds; cheese, 807,076 pounds. Number of horses reported, 45,778; working-oxen, 29,103; milch-cows, 90,664; other cattle, 112,689; sheep, 211,925; swine, 68,497.

Capital invested in manufactures, in 1880, $51,112,283; average number of males, above sixteen years old, employed, 29,586; females, above fifteen years, 16,164; children and youth, 3,201; total wages paid, $14,914,789; value of materials used, $48,562,462; value of products, $73,973,028. Specific cotton manufactories, 38; capital invested, $19,877,084; spindles run, 944,053; looms, 34,209; officers and operatives employed, 18,539; pounds of cotton consumed, 76,388,492, which cost $28,626,083; goods manufactured, 244,145,553 yards of cloth, and 68,881,540 pounds yarn and thread; wages of operatives, $4,290,960; value of materials, $10,146,904; value of products, $37,983,409. Iron and steel manufacturing, 7,978 tons; capital invested, $450,000; hands employed, 290; wages, $127,690; value of mate-
rialis used, $523,583; value of products, $807,846. Fisheries—persons engaged, 914; capital invested, $208,465; value of products, $176,684. Quarries, 29; capital invested, $28,800; product, 1,880,000 cubic feet; value, $345,066. Gold, 533 ounces produced; value, $11,000. Silver, 12,375 ounces; value, $18,000. Paper, 5,480 tons; value, $1,781,170.

Persons engaged in all vocations, all ages, 142,468: in agriculture, 44,490; professional and personal services, 28,206; trade and transportation, 11,785; manufactures, mechanical, and mining industries, 35,027. Assessed value of real estate, $122,735,124; personal, $42,092,057; total, $164,827,181. Taxation—State, 1860, $395,372; county, $483,973; city, town, and school, $1,918,590; total, $2,697,440.

Number of insane in the State, 1,066; blind, 412; persons ten years old and upward, 286,188; unable to read, 11,989; unable to write, 14,302. Foreign-born persons, ten years old and upward, 42,783; unable to write, 11,483; or above 37 years, 2. Native white persons, ten years old and upward, 242,811; unable to write, 3,710, or 1.1 per cent.

State Government.—Biennial elections are held in November of even years; biennial legislative sessions are held in June of odd years. The close of 1884 Samuel W. Hule (Republican) was Governor; Al B. Thompson, Secretary; Isaac W. Hammond, Deputy-Secretary; Solomon A. Carter, Treasurer; Parsons B. Congwell, Printer; Oliver Phillips, Insurance Commissioner; William H. Kimball, Librarian; James W. Patterson, Superintendent Public Instruction; Augustus D. Ayling, Adjutant-General; Irving A. Watson, Secretary of Board of Health; James O. Adams, Secretary of Board of Agriculture; John M. Hill, Secretary of Board of Equalization of Taxes: Orrin C. Moore, Edwin B. S. Sanborn, Edward J. Tenney, Railroad Commissioners; Buel C. Carter and George E. Gage, Bank Commissioners; Charles C. Jones, Principal of Normal School; Charles P. Bartlett, Superintendent of Asylum for Insane; John C. Ray, Superintendent of Insane School; Frank S. Dodge, Warden State Prison; Supreme Court: Charles Doe, Chief-Justice; Isaac W. Smith, William H. H. Allen, Levi W. Clark, Isaac N. Blodgett, Alonzo P. Carpenter, and George A. Bingham, Associate; Mason W. Tappan, Attorney-General; William S. Laid, Law Reporter. Henry W. Blair at Ashford and Austin F. Pike, Senators in Congress; Maria A. Haynes and Ossian Ray, Representatives. Governor—elect, June, 1886, to June, 1888, Moody Currier. In June a Senator is to be chosen for the term expiring March 4, 1888.

Finances.—During the fiscal year ending June 30, 1864, the State receipts from all sources amounted to $1,000,977,88; and the disbursements for all purposes to $1,016,277,64; leaving in the treasury, June, 1, an available cash surplus of $189,082,88; such surplus, June 1, 1885, having been $204,829,49.

Careful estimates, prepared by the State Secretary, show six preceding years of annual legislative sessions, to have cost the State $484,868; six years of biennial sessions, $386,676—a saving of $90,891. Few members are chosen for more than a term of two years. The State debt, June 1, 1884, was $131,609.20. As to a portion of its principal amounting to $460,000, falling due Sept. 1, 1884, the Governor, in his message to the Legislature in 1885, observed that unless large sums should be appropriated for extraordinary expenses in the intervening time, the interest would be paid at maturity with the surplus revenue. It has been so paid.

Railroads. — Following are the corporate names of the railroads operating in New Hampshire, the length and value of each road, and the tax assessment on it for 1884:

<table>
<thead>
<tr>
<th>NAME OF RAILROADS</th>
<th>MILES OF ROAD TO STATE</th>
<th>VALUE OF ROAD AND EQUIPMENT</th>
<th>AMOUNT OF TAX ASSESSED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>14</td>
<td>$423,000</td>
<td>$4,319.84</td>
</tr>
<tr>
<td>Boston &amp; Maine</td>
<td>376</td>
<td>12,060,000</td>
<td>39,384.88</td>
</tr>
<tr>
<td>Nashua</td>
<td>259</td>
<td>915,000</td>
<td>29,410.15</td>
</tr>
<tr>
<td>Concord, and Montreal</td>
<td>124</td>
<td>5,200,000</td>
<td>16,043.71</td>
</tr>
<tr>
<td>Fitchburg</td>
<td>972</td>
<td>25,000,000</td>
<td>81,963.15</td>
</tr>
<tr>
<td>Nashua &amp; Lowell</td>
<td>252</td>
<td>406,000</td>
<td>1,329.15</td>
</tr>
<tr>
<td>Wilton</td>
<td>29</td>
<td>500,000</td>
<td>1,572.00</td>
</tr>
<tr>
<td>Cheshire</td>
<td>429</td>
<td>1,200,000</td>
<td>3,987.60</td>
</tr>
<tr>
<td>Grand Trunk</td>
<td>85</td>
<td>750,000</td>
<td>2,487.33</td>
</tr>
<tr>
<td>Northerns</td>
<td>629</td>
<td>9,000,000</td>
<td>28,882.19</td>
</tr>
<tr>
<td>Manchester &amp; Lawrence</td>
<td>845</td>
<td>9,200,000</td>
<td>30,968.78</td>
</tr>
<tr>
<td>Concord &amp; Claremont</td>
<td>71</td>
<td>900,000</td>
<td>2,868.34</td>
</tr>
<tr>
<td>Sullivan County</td>
<td>85</td>
<td>500,000</td>
<td>1,619.36</td>
</tr>
<tr>
<td>Worcester &amp; Nashua</td>
<td>268</td>
<td>180,000</td>
<td>5,974.64</td>
</tr>
<tr>
<td>Mount Washington</td>
<td>5</td>
<td>180,000</td>
<td>5,974.64</td>
</tr>
<tr>
<td>Suncook Valley</td>
<td>108</td>
<td>120,000</td>
<td>3,867.24</td>
</tr>
<tr>
<td>Portland &amp; Rochester</td>
<td>36</td>
<td>120,000</td>
<td>3,867.24</td>
</tr>
<tr>
<td>Merrimack</td>
<td>50</td>
<td>100,000</td>
<td>3,230.57</td>
</tr>
<tr>
<td>Portland &amp; Ogdensburg</td>
<td>50</td>
<td>100,000</td>
<td>3,230.57</td>
</tr>
<tr>
<td>Wollborough</td>
<td>10</td>
<td>50,000</td>
<td>1,572.16</td>
</tr>
<tr>
<td>West Amherst</td>
<td>2</td>
<td>50,000</td>
<td>1,572.16</td>
</tr>
</tbody>
</table>

Miles: 1,277,723; Value: $14,711,000; Tax: $599,798.85
NEW HAMPSHIRE.

567

A amount of the tax assessed on
the State for 1884 is $30,734.98
1883, when it was $170,069.85. The
amount paid by insurance companies to
the insured, $10,488.77. Great expenditures
have been made, in the cities and large towns,
in securing a water-supply, organizing fire
departments, and furnishing every appliance
for the speedy extinguishment of fires. In sup-
port of these statements the chief-engineer of
Concord reports, for 1884, the whole loss by
fire as only $1,660.05. The city underwriters
admit the annual amount of insurance premium
paid to be not less than $70,000. For
forty years, since an abundant hydrant serv-
ices has been furnished, the average insurance
recovered has been but $19,316.49. Excess
of premiums paid over that received, $50,000.
The annual assessment of the one per cent. tax
on premiums collected in this State, during
1884, amounted to $8,194.28.

Education.—The summary of schools for 1884
is as follows: Towns having organized schools,
395; different public schools, 2,999; graded
schools, 491; town and district high-schools,
23; average length of schools in the year, 20
weeks; scholars—boys attending schools two
weeks or more, 82,764; girls, 51,900; scholars
under six years of age, 4,905; between six and
sixteen, 53,945; over sixteen, 5,183; average
attendance of all scholars, 43,758; average at-
tendance to each school, 164; whole number
of school-children reported to commissioner,
73,789. Number of children in the State of
school age, from five to seventeen, both included,
given by census of 1880—boys, 86,752; girls, 80-
548. Teachers—males, 449; females, 3,077.
Average monthly wages of male teachers, in-
cluding board, $58.41; female teachers, $23.14.
School-houses, 2,322; estimated value of land,
buildings, and furniture, $2,930,927; value of
school apparatus, $49,075; school revenue from
all sources, $350,085; total expenditures, $394-
195, an increase of $18,288 last year. Teach-
ers' institutes have been organized and held in
each of the ten counties, which have been at-
tended by about 700 teachers. The Legislature
of 1883 amended the school laws, pro-
viding that physiology and hygiene, including
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effect March 1, 1884. This is believed to be a
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and instilling habits of temperance among the
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opposition to the law, public sentiment in and
outside of the Legislature pushing it forward to

<table>
<thead>
<tr>
<th># of LINE</th>
<th>Valuation</th>
<th>Amount of Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Telephone Co.</td>
<td>$1,000</td>
<td>$95.59</td>
</tr>
<tr>
<td>2 Telegraph Co.</td>
<td>$800</td>
<td>$57.26</td>
</tr>
<tr>
<td>3 Water</td>
<td>$4,000</td>
<td>$40.47</td>
</tr>
<tr>
<td>4 Gas</td>
<td>$500</td>
<td>$4.59</td>
</tr>
<tr>
<td>5 Town, and Connect.</td>
<td>$250</td>
<td>$2.60</td>
</tr>
<tr>
<td>6 Total</td>
<td>$210,700</td>
<td>$2,604.40</td>
</tr>
</tbody>
</table>

—The savings-banks in opera-
tion, numbered sixty-seven. The
bered 117,837; increase in the
heir deposits amounted to $42-
crease, $966,781.85; surplus,
and a half million dollars; guar-
19,000. In the matter of sav-
last Legislature enacted some
geas, the better to provide for
deposits, the principal one
munioners. Their number
two, and their compensation,
iously paid by the banks, is
ble by the State, at the rate of
lay, while in active service, be-
ance of mileage at ten cents a
law imposes on the commis-
ating and responsible service
the total fire-risks in force in the
amounted to $83,156,000. This
clude the large risks taken on
manufacturing establishments
Manufacturers' Mutuals, that the
State Commissioner. Life-
5. The present system of in-
ision was established in 1870, and
advantageously to the State's
last report of the commissioner.
were twenty-two home fire-
anes, and fifty-nine fire-insur-
s from other States and coun-
ity to insure property in the State.
There were also twenty-two
companies, one accident, one life
and two fidelity or guaran-
companies authorized to operate
he commissioner says: "With-
ve or fifteen years the drift of
business has undergone great
when I assumed the duties of
it, it was understood that fire-
anes secured their profits in
ly in the rural districts. Farm
risks were then in demand. The great bulk of
losses occurred in the cities and compact towns,
and the farmers complained of paying an un-
due proportion of the losses. Now this is
actually reversed." The cities have escaped
heavy losses to an unusual degree, reducing
the amount paid by insurance companies to
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opposition to the law, public sentiment in and
outside of the Legislature pushing it forward to
a new building for female patients was finished and occupied. It has spacious apartments, affords accommodations for 50 patients, and is one of the best designed buildings in the country. About 300 persons are cared for by the several counties, which have enlarged and improved facilities for keeping their insane poor. New Hampshire keeps, as its beneficiaries, in institutions of other States, indigent persons of both sexes and both classes, namely, 30 deaf and dumb at the American Asylum, Hartford, and 3 at the Clarke Institute, Northampton, Mass.; 2 at the Horace Mann School, Boston; 10 at the Perkins Institution for the Blind, South Boston; and 3 at the Massachusetts School for the Feeble-minded. She pays $175 per capita for the education of her deaf-mutes.

Industrial School.—The twenty-sixth annual report of the State Industrial School for the Correction of Wayward Youth gives the number admitted since its organization as 1,164; number the past year, 142. Most of the inmates learn to read and write quite well, and solve simple problems in arithmetic correctly. The boys are placed at some kind of employment—some in the bakery and cook-room, some at farming, teaming, gardening, shoemaking, printing, and seating chairs, and the girls are taught needlework. New Jersey.

STATE CHARITIES.—At the Asylum for Insane 841 patients were admitted during the year; 18 were discharged as recovered; 41 were improved, and 308 remained at date of report. New Jersey.

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STATE PRISON.—The whole number of convicts is 140. Good order and good health among them have marked the year. No escapes have been made in fourteen years. Earnings reported June, 1894, $16,907.36; disbursements, $19,172.57; deficit, $2,965.21. By the failure of the labor contractor, the inmates were idle two months, or the prison would have been self-supporting. A new tenement-house, stable, woodshed, and front fence have recently been built.

BOARD OF HEALTH.—The third annual report, 1894, gives a synopsis of experience resulting from a close and constant labor in this field. A valuable sanitary work is being accomplished, which is manifest in all sections of the State. Sanitary laws were passed in 1893—to regulate the sale and inspection of milk; drainage of land; teaching physiology and hygiene in the common schools; penalty in certain nuisances; relating to sidewalks; coating in the public streets; section of births, marriages, and deeds, providing for the support of children. These aid the board in inculcating care of careful living as will in health and longevity to the people. Tension has been given to the pure drinking-water from pollute to the inspection of public and private schools. Imperfect returns made by, to March 31, 1888, give births in the State as 6,150; marriage and couples; deaths, 5,421.

Liquor.—By the census of shown that of the persons in the to eighty-four years old, both in were—males, 1,840; females, 1, five to eighty-nine years—males, 4,75; ninety to ninety-four years—males, 192; ninety-five to ninety-nine years—males, 10; females, 48; over eighty years and upward—males, 4; female eighties and upward, 4,694. Shows that one person in every and passes years. Of white males, the average is one of native white females, one in two comparison, the average in Vermont 81.4 of the population; Maine, Connecticut, one in 110.1; Mass. in 181.8; Rhode Island, one in York, one in 161.5; Pennsylvania, New Jersey, one in 208.9.

By the census of 1890, the total given was 6,141; total deaths, 2,769; females, 2,815; total number of births in deaths, 557.

NEW JERSEY. STATE GOVERNMENT.—

New Jersey legislative sessions.

The legislative sessions.

A civil-rights bill; giving electric cars power to erect poles, etc., on also to lay pipes underground; concerning town and certain officers thereof, powers; requiring election officers of pri
to take oath that they have carried out to bribery, etc.; to authorize the burial of any honorably discharged soldier, who shall hereafter die without sufficient to defray funeral expenses; xation of the health of female employees manufacturing, mechanical, and mechanical.
acting that every person or corporation em- make any manufacturing, mercantile establish- the limits of incorporated cities, towns, villages, in cases where the local or municipal authorities or officers fail to provide for the construction of buildings able to be used as a safe condition for public ; to provide for drainage and sewage in circumstances in which there is a need; to promote, while in cases of tele- phones, or electric-light wires attached to ; to impose a tax of $20,000,000, from expedi- ing $12,000,000, from extending the of the United States during the late war, to prevent the establishment of new cities and towns in New Jersey; to provide for the impos- ition of taxes on certain corporations, and for the protection of dairymen, fruit dealers, and for the encouragement of free libraries; to abolish and prohibit the employment of convict and inmates of prisons, penitentiaries, and all public reformatory institu- The State Board of Assessors have imposed upon the railroad and canal companies a tax of $777,629.76 for State purposes, of which $255,529.44 is upon the franchises of the companies. They have also imposed taxes for local purposes amounting to $388,028.50. The amount due to the State for the taxes of 1883, under the provisions of the act of 1875, will be about $740,000. The amount cannot be accurately stated at this time, because of a dispute as to the valuation of some roads, and the litigation with the New Jersey Central Railroad Company. The act should be amended so as to secure a fair tax on all express companies, whether corporate or not, doing business in this State. It should be also amended with reference to taxing palace or parlor car companies. The assessors have determined that under the wording of the act the tax is confined to business done exclusively within the limits of the State; this yields merely a nominal tax. It should be amended so as to compel them to pay a minimum amount of at least a dollar a ton as a mileage proportion of their entire business, so that the State should receive its fair proportion of tax on their gross receipts of these companies. The law with reference to the taxation of oil or pipeline companies is evaded or does not reach the largest oil company which it was intended to reach. This company returns that its business is only the manufacture of petroleum products. Its capital stock is $5,000,000. The company which transports the oil for its use only pays the State about $1,400. The amount assessed against miscellaneous corporations under the act will be about $300,000. Of this amount $180,000 will probably be collectible. The act needs amendments so as to secure a tax of enforcing the collection of the taxes levied thereon, and for a forfeiture of the charter or a prohibition of doing business in this State before the taxes remain unpaid for a certain period. When the State attempts to secure a uniform rule with reference to the taxation of railroad and canal companies, it is met with the claim upon the part of certain corporations that they have irrepealable contracts on the subject of taxation, which relieve them from the burdens imposed upon other corporations. But the Governor thinks that a remedy exists in the fact that most of the companies have charters that are repealable, and give the State the right to purchase the lines on payment of their cost. The following statement shows the aggregate amount of money received and disbursed by the Treasurer during the fiscal year:

<table>
<thead>
<tr>
<th>FUND</th>
<th>Disbursements</th>
<th>Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>State fund</td>
<td>$1,190,490 79</td>
<td>$1,953,805 90</td>
</tr>
<tr>
<td>School fund</td>
<td>1,287,071 90</td>
<td>2,067,404 96</td>
</tr>
<tr>
<td>Agricultural College fund</td>
<td>12,789 56</td>
<td>19,600 00</td>
</tr>
<tr>
<td>Balance at end of year, 1893</td>
<td>22,405 75</td>
<td>22,405 75</td>
</tr>
<tr>
<td>Total</td>
<td>$3,492,791 77</td>
<td>$3,492,791 77</td>
</tr>
</tbody>
</table>

In addition to the income of the school fund the Treasurer holds leases for lands under water, given by the Riparian Commission, amounting to $1,434,819.47, on which amount 7 per cent. is due, payable semi-annually. The Agricultural College fund, amounting to $116,000, is all invested in bonds of the State; the interest, $6,960, has been received and disbursed for the maintenance of Rutgers Scientific School.
The war account indebtedness has been reduced $109,977, being the amount of bonds redeemed Jan. 1, 1884, leaving the balance of war bonds outstanding $1,596,800, of which amount, $100,000 falls due Jan. 1, 1886.

The State fund holds securities to the amount of $1,127,497.11; and the school fund to the amount of $3,001,182.50.

The report of the Commissioners of the Sinking Fund shows that the assets of the fund amount to $988,027.57; of which $332,348.09 represent the cost of real estate that the commissioners have been compelled to take because of non-payment of interest and principal of mortgages.

The proper income of the school fund from all sources is about $350,000. Of this income $100,000 is annually appropriated for the support of schools. This leaves about $250,000 per annum, which is added to the principal of the school fund, but adds little to its income, because of the difficulty of investing in any security now allowed by law, that will yield even 2 per cent. interest.

Schools.—During the last fiscal year there was expended for public schools the sum of $2,418,876.10, being an increase of more than $85,000 over the amount expended by the State and the localities for educational purposes during the preceding year. The school property is valued at $5,650,077. The number of pupils in attendance during the year was 218,785, an increase of 4,937 over the preceding year. The school census of children between five and eighteen years of age is 856,061, being an increase of 6,819 over the preceding year. The number of male teachers is 927, and female teachers 9,560. There has been a steady decrease in the number of male teachers and a steady increase in the number of female teachers during the past ten years. In 1884 the district and city tax for building schools was $4,857.10, and for $493.00 to perfect the disposal of the seven cents paid the asylum.

The average attendance in the Normal School during the year ending June, 1884, was 165, and in the Model School 845. The number of pupils graduated from the Normal School was 327. Nearly five thirds of those at the Normal School are not graduated.

The amount expended by the State during the year for the maintenance of this institution, in addition to that paid by pupils for boarding, is $15,000. There was also expended $5,000 for additions to and improvements in the boarding halls.

School for Deaf-Mutes.—The act of April 14, 1894, provided that any indigent deaf-mute, of suitable capacity, who should be a legal resident of the State, and not less than eight nor more than twenty-one years of age, should be admitted to the benefits of this institution. Three years is provided as the term of instruction, but it may be increased to eight years by the trustees. The building, repairs, and alterations have been completed out of the fund realized from the sale of the Stevens battery under the act of March 5, 1888. The number of pupils in the institution at the close of the year was 110, being 62 males and 48 females. Expense during the year was $27,550.58.

Blind and Feeble-minded.—There were 4 blind and 40 blind pupils supported institutions of other States during the year. The amount paid for the feeble-minded was $16,489.89, and for the blind $11,538.13.

Reform School for Boys.—The number of inmates in this school, Nov. 1, 1884, was 69, being 55 fewer than the number in the college, Nov. 1, 1888. The average number of the year was 923. The State paid the entire maintenance of the institution, $40,969.25.

The institution received from the farm produce, the labor of the boys, and miscellaneous sources $17,149.20. The total of liabilities incurred for maintenance of the year was $46,239.67, and there was paid an overdraft at the date of the last report in 1888 amounting to $1.

Industrial School for Girls.—There were 27 inmates in this institution at the close of the year. The cost of maintenance was $5,927. The trustees ask for legislation that would increase the number of inmates to 40, that be the limit of accommodation in this institution.

Morristown Insane Asylum.—The number of patients in this asylum at the close of the year was 745, of whom 156 are private patients. The expense of maintenance was $135,947. The balance in the hands of the managers at the close of the year was $10,287.81. During the year the managers purchased 33 acres of land for $4,827.30, to perfect the disposal of waste water and sewage of the asylum.

Trenton Insane Asylum.—The number of patients in this asylum at the close of the year was 663, of whom 97 are private patients. The expense of maintenance was $187,401.86. The balance in the hands of the managers at the close of the year was $23,246.07. The managers report that the institution is overcrowded.

National Guard.—The National Guard of State consists of 279 officers and 3,054 men organized into fifty companies of infantry, two Gatling-gun companies. The entire force is thoroughly armed and equipped, and of which 60 are non-residents of this State.

Home for Disabled Soldiers.—The number of inmates of this institution at the close of the year was 248, and the average number of boarders per day 283. In addition to the regular appropriation of $35,000, the State ap
$19,000, making $37,000 paid to the during the year.

ruin. At the close of the fiscal year were 843 convicts in the State Prison, of 370 were employed on the convicts. One of the convicts, in the manufacture of buttons, and 30 men, failed in July. Owing to his failure, the business, the convicts have employed no more men than they were by the terms of their contracts, with the failure of the button a convict, has caused a falling off in the 1, 1,815.8; and the earnings amounted 1,577.87. This is $3,805.06 more than prevailing year. In addition to those on the contracts, 52 convicts have in the erection of a wall sur-prison-gounds. More shops are and also additional cell-room.

legislature, at its last session, abolished convicts labor in the prison, and such hereafter to be utilized under chapter 55, 1884. This act provides for the use of convicts upon goods used under State control, and for thus employed the Legislature has the "piece-price plan" or the "public-account system." After the 8th of June, the expiration of the contracts now, all the inmates of the institution must one of the three plans. That only a small number can be used on goods to be used in institutions under the same control; nearly all the convicts employed on the "piece-price plan" the "public-account system." Thees of the prison are unanimous in their that the "piece-price plan" is preferred to the "public-account system." and Corrective.—An act was passed 8, 1883, to create a Council of State and Correction, to consist of six persons appointed by the Governor and con-ree forces in the State, so that the returns made to the Coon-ng in the State or to counties, towns.

Commission.—The Riparian Commissions in fee in 1884 amounting to $20,015.99. The board reports that the rentals received on leases previously, including $35,000 on the Morris, amount to $44,173.39.

$11,000, paying $37,000 paid to the during the year.

$11,000, paying $37,000 paid to the during the year.

The interest on bonds, given for riparian grants, and the rentals on leases, from April 1, 1884, to Nov. 1, 1884, amount to $298,526.85.

Oyster-Lands.—On this subject the Governor says, in his message to the Legislature of 1885:

The State of Connecticut received in 1884 over $25,000 from its oyster-lands; Maryland over $50,000, and Rhode Island over $11,000. In New Jersey, although the oyster-beds are almost exclusively upon lands owned by the State, it derives no income whatever therefrom, although in the majority of instances an acre of oyster-land is far more valuable in its product than an acre of land upon the adjacent shore.

There are in this State over 100,000 acres of oyster-land, or land that can be used for oyster-planting. Over 720,000,000 oysters are obtained from the waters of this State. At one point alone, in Cumberland county, at Port Norris, the great market for the Mau-ricer river Cove and Delaware Bay oysters, over 250,000 oysters are hauled yearly, and in the boats, plant, and appurtenances connected with the business at this point nearly $200,000 is invested, and over 3,000 men employed. The flourishing condition of this industry at this point appears to arise, not only from the land under water in this vicinity being particularly adapted to oyster-culture, but also because protection is afforded under the laws of the State by an association which gives a certain degree of confidence and protection to those using these beds. The result of an entire want of protection is clearly seen in Barnegat Bay. More than half of this immense bay is available for oyster-planting. Yet its waters have been almost entirely cleared of oysters by parties coming from outside of the State with vessels, and taking away the entire product so rapidly that the business is practically destroyed in these waters.

Child-Labor.—The duties of the Inspector of Factories and Workshops, and the provisions in reference to the labor of women and children in factories and other places, are prescribed in the acts of March 5, 1883, and April 17, 1884. These acts prohibit the employment of boys under the age of twelve and of girls under the age of fourteen years in factories, workshops, or establishments where the manufacture of goods is carried on. They also prescribe the hours of labor, and require attendance at schools during certain periods. The inspector reports that there are over 8,000 factories in the State, and over 15,000 children employed. The condition of the children engaged in these factories, as presented by the Inspector, is most deplorable. He says that over three fourths of them have absolutely no education whatever, and that a very small percentage of the remaining fourth have the merest rudimentary education. Among the most important of his recommendations are those for compulsory education, reduction of hours of labor of children and women, improvement of the sanitary condition of factories, providing of fire-escapes, and separate dressing-rooms for men and women.

Civil Rights.—The Legislature, at its last session, passed two important acts bearing upon the rights of colored citizens of the State. The first of these was passed after the Governor
had communicated by message the fact that burial had been refused the bodies of the dead on account of color. A supplement to the Crimes Act was passed, which made such a refusal a misdemeanor. The Legislature also passed an act to protect all citizens in their civil and legal rights, so that no distinction should be made on account of race, color, or previous condition of servitude. This act makes it a misdemeanor to deny to any citizen, on account of race or color, the rights provided for in that act, and also makes it a misdemeanor in any officer or person charged with the duty of selecting or summoning jurors to exclude any citizen on account of color.

**Legislation for Cities.**—The Governor urges upon the Legislature the adoption of a constitutional amendment that will prohibit any city from creating any debt, under any legislative power, that shall exceed a certain percentage of the ratables.

One of the most important acts affecting cities was the act providing for raising revenue to carry on certain public duties in bankrupt cities, which duties they had failed or refused to perform under their charters. This act has been decided to be constitutional and has enabled the city of Elizabeth to continue its schools, protect its property from fire, preserve the public health, support the poor, maintain a police force, and keep its streets in safe condition for public use. The city authorities and creditors have not yet been able to reach a satisfactory adjustment of their difficulties.

**Political.**—Besides Presidential Electors and Congressmen, only members of Assembly and a third of the Senators were chosen at the election of 1884. The vote for Presidential Electors was as follows: Republican, 123,866; Democratic, 127,778; Greenback, 3,956; Prohibition, 6,183. Four Republican (First, Second, Fifth, and Sixth Districts) and three Democratic Congressmen (Third, Fourth, and Seventh Districts) were elected. The Legislature of 1883 consists of 11 Republicans and 10 Democrats in the Senate, and 36 Republicans and 24 Democrats in the House.

**NEW MEXICO.** The following are the Territorial officers: Governor, Lionel A. Sheldon; Secretary, W. G. Ritch; Chief-Justice of the Supreme Court, Samuel B. Axtell; Associate Judges, Joseph Bell, Warren Bristol; Attorney-General, William Breeden; Auditor, Trinidad Alarid; Treasurer, A. Ortiz y Salaza.

**Legislative Session.**—An act of Congress, approved Feb. 14, 1884, provided that "the legislative proceedings, records, and laws of said Territory shall be printed in the English language; that the members elected to the Territorial Legislature of New Mexico in November, 1883, and all vacancies legally filled since that time, if any, are hereby declared to be the legal members of the Legislature hereby authorized, subject to all valid contests; the said Territorial Legislature shall convene on the third Monday in February, 1884, and shall not con-
NEW MEXICO.

It is believed that the yield in much greater than ever before.

There can not be fewer than

head of cattle in the Territory, and as

These are probably decreases.

The great and continuous fall

caused considerable loss in northern

the Territory, and there is an irre-

conflict between cattle and sheep

which may, at not a very distant

e the sheep business to the wall.

do not thrive on pastures occupied

, and that sheep are destructive to

well-known facts.

The assessment returns show an

increase in taxable property to the extent of

0, and assessments do not by any

brack all the taxable property. The

in three years has been $16,000,000.

exempt railroad property, except

Atlantic and Pacific, from taxation

as after the completion of the re-

roads. On March 1, 1886, at least

0 of the property will be taxed

the next year $4,000,000 more.

Legislative Assembly at the last ses-

sion directed the construction of a penitentiary,

use of the bonds of the Territory for

sion to an amount not exceeding

payable ten years from date, with in-

per cent. per annum, payable semi-

On the 1st day of July last $75,000

bonds were issued, and the board of

has directed that the remaining

shall be issued on the first day of

The law also imposes an annual

e half mill on the dollar on the taxa-

erty of the Territory, to pay the in-

the bonds as it becomes due, and to

ink tax to pay the principal.

Legislature also authorized the construc-

Capitol building, and the issue of

that purpose to the amount of

paid from date, at 7 per cent. per annum, pay-

ally, and imposed a tax sufficient to

interest for fifteen years, and thereafter

tax to pay the principal of the bonds.

one third of a mill will be ample,

for the next few years, to pay the

nd thereafter a smaller tax. The law

that $100,000 of the bonds shall be

year and $100,000 next.

The Legislature also passed a

which is an improvement on any

ory has ever had. It imposes greater

upon improper expenditure of the

dues, and severe penalties for abus-

c of duty on the part of the offi-

cers is also an increase of tax of one

he dollar for school purposes.

Convicts are now kept in the Kan-

sata, where 65 were in confinement

the year. First expense for main-

transportation for the years 1889 and

Irrigation.—A large part of the lands of the

Territory are useless without irrigation, and

are not supplied with streams. The Governor

asks Congress to appropriate a liberal sum to

sink wells and build reservoirs.

Election.—The vote for delegate to Congress,

on November 4, resulted as follows: Demo-

cratic, 12,271; Republican, 9,680; bolting Re-

publican, 5,192.

NEW ORLEANS EXPOSITION. The idea of a

general exposition of natural resources, indus-

tries, and arts in the southern part of the United

States was first broached in 1880. It was be-

lieved that such a display would much to

bring to the attention of the world the capa-

bilities of the Southern States, and, by a com-

parison of their condition with that of the rest

of the country and of other countries, incite

their own people to more energetic efforts to

develop their resources. It was also regarded

as a means of bringing them into closer com-

mercial relations with the rest of the country,

and consequently into more harmonious politi-

cal and social relations. The quickening of

trade with other countries, especially those of

the Western Continent to the south of the

United States, was also one of the anticipated

effects. The exhibitions at Atlanta, Ga., and

Louisville, Ky., were too strictly local in their

character and limited in scope to serve the

desired purpose, and a great World's Fair in

the South continued to be a subject of discus-

sion and tentative effort. In October, 1882,

the National Cotton-Planters' Association at

its annual meeting adopted a resolution that

the Exposition so much talked of should be

held in New Orleans, opening in 1884, as a

celebration of the centenary of the cotton indus-

try of the country. The first record of

cotton as a factor in the foreign trade of the

United States appeared in the shipment in

1784 of six bags, amounting to about one bale,

from Charleston, S. C. This idea of a celebra-

tion of the cotton centenary was adopted, and

it was determined to make an exhibition of the

culture and manufacture of cotton, and the ma-

achinery used in its treatment, a conspicuous

feature of the proposed World's Fair. The

subject was brought before the Congress of

the United States at the session following the

action of the Planters' Association, and an act

was approved Feb. 10, 1883, incorporating the

World's Industrial and Cotton Centennial Ex-

position, giving it the sanction and encourage-

ment of the national Government, providing

for the appointment by the President of a

commissioner and alternate commissioner for

each State in the Union, authorizing the ap-

pointment of foreign representatives, providing

for the free admission of foreign exhibits, and

otherwise affording the legal encouragement

and privileges required. The definite location

of the Exposition was subsequently determined

upon. It was proposed at first to locate it in

the city that would make the highest bid to-

ward carrying out the scheme successfully, but
as that did not promise well, it was decided that New Orleans was the most appropriate place, and that it should be located there provided a guarantee were furnished for the necessary financial support. This was promised, and the Exhibition Company was organized under the act of Congress.

The next step was to raise funds, and the people of New Orleans, with the aid of certain railroad and other corporations, subscribed to the stock of the company to the amount of $500,000. The city government contributed $100,000, to be devoted to the erection of a Horticultural Hall, which was to remain and become the property of the city after the close of the Exhibition. The State of Louisiana appropriated $100,000, and contributions were made by other States to the funds of the organization.

An appeal was made to Congress for a loan of $1,000,000, which was granted. The total of funds assured before active operations were begun was $1,609,000, which was somewhat increased afterward. Notice was given to foreign governments, through American ministers and consuls, that the Exposition would be held at New Orleans, opening on the 1st of December, 1854, and closing May 31, 1855, and efforts were made to secure a representation of the arts and industries of foreign nations. The President appointed commissioners for the several States, and in most of them legislative aid was given to promote a creditable display of their products. The officers appointed to carry out the work of preparing the buildings and collecting exhibits were the following:

E. A. Burke, director-general and chief executive officer; F. C. Morehead, commissioner-general; G. M. Torgerson, supervising architect; F. N. Ogden, chief superintendent; S. H. Gilman, consulting engineer; Parker Earle, chief of department of horticulture; George B. Loring, chief of department of agriculture; B. K. Bruce, chief of department of colored exhibits; Samuel Moore, chief of department of installation; Charles L. Fitch, chief of department of transportation; B. T. Walske, chief of department of information and accommodation; Thomas Donaldson, chief of department of ores, minerals, and woods; John Eaton, chief of department of education; William H. Judson, chief of department of printing and publishing; C. W. Dalney, Jr., chief of department of Government and State exhibits; Mrs. Julia Ward Howe, chief of department of women's work.

Commissioners to visit various parts of the United States and several foreign countries, to enlist public interest and promote preparations for representation at the exposition, were appointed by the Board of Managers. A number of foreign governments took action and appointed representatives to take charge of the interests of their people in connection with the matter. The general classification and grouping of exhibits was determined upon as follows: 1, agriculture; 2, horticulture; 3, pisciculture; 4, ores and manufactured products; 5, vehicles and implements; 6, furniture and accessories; 7, textile fabrics, clothing and accessories; 8, the industrial arts; 9, alimentary products; 10, education and instruction; 11, works of art; 12, natural history.

The site selected for the Exposition was an unimproved tract of ground of 240 acres, known as the Upper City Park, lying about 44 miles above Cairo on the river-front. It was part of a larger area formerly used for some years as a sump
ded for the disposal of sewage, and consisted of a series of living trees and a variety of Spanish moss.

It was laid out by the city engineer in grass-plots, and adorned with the shrubs and flowers of temperate and tropical climates, and ornamented with fountains, bridges, and electric light.

Main Building was placed near the center of the inclosure, fronting to the east, and southern end toward the river. This structure, covering thirty-three acres, and was designed for exhibition purposes. It was 1,376 feet in length and 905 feet in width, wholly of wood in a series of trussed divided only by rows of tall pillars covered by a continuous roof, constructed of glass. No partitions or courts broke the continuity of the vast space. In the center of the building was a music hall, capable of seating 11,000 persons, with a stage accommodating 600 musicians, backed by a large organ especially constructed for the Exposition. The Music Hall was separated from the surrounding space only by rows of pillars, surmounted by open Gothic arches, and there was an unbroken view over the whole interior, which was surrounded by spacious galleries twenty-three feet high, reached by elevators and convenient stairways. The exterior of the building was simple, broken only by numerous windows and its square towers that surmounted the entrance at the middle and end of the main front of the building. The center of the eastern front was a high bell-tower, containing a set of chimes, from the top of which a fine view of the surrounding country could be obtained. Over this entrance was an allegorical group in bronze, representing the aboriginal and modern life of the country, and in a niche on either side a statue, one representing Columbus and the other Washington. About one third of the width of the building at the rear was occupied by machinery, and at the southern end of this an extension 120 feet wide was carried out a distance of 570 feet, to be devoted to mills and factories in operation. At right angles with this extension and stretching to the river-front was a long building devoted to saw-mills.

The second building in size was known as the Government Building, and was designed for the exhibits of the United States Government and of the several States. Its general style and mode of construction were similar to those of the Main Building. It was 883 feet long by 565 feet wide. It was situated to the
NEW ORLEANS EXPOSITION.

...ger structure, in such a position on side, in which the main end was nearly in line with the he former. The exterior walls th, carried up here and there ers, of which those at the mid f the sides were of imposing terior space was unbroken by surrounded by a continuous wide. The third building inhorticultural Hall, which was iron and glass, as it was inermament feature of the park feet long. The width of the e structure was 100 feet, but a carried it out to 194 feet. Over his rose a glass-roofed tower, mmediately under which was a The Art Building was placed f the Main Building. It was corrugated iron and glass, the nitted entirely from the roof. It g and 100 wide, with a massive A rotunda, 50 feet square, a statuary display, occupied he building, from which ex eries, 100 feet long and 50 feet 3,980 by 780 feet to the northe Building was devoted to the rns. There were four separate orses and two for cattle on this 56 feet long and 72 feet wide, dded rows. There were accommod for 1,000 horses and 500 bis the area occupied by this hibition were open spaces for o stock, and a half-mile track nting to $135,000 were offered days in this department. ling was erected in the south of the grounds by the Mexican serve as a headquarters for a cavairy and infantry, accom d, and for the offices of its rep t was in the general style of a da, 288 feet by 192, inclosing ard, 115 feet by 184, with an designed in part for a display rns, and birds. The Mexican o provided a separate octagonal he Main Building for its display he building was of ornamental set in diameter, each face of the 3 feet long, and was surmount umes 80 feet high. The general rish. Minor structures for res public accommodation and for exhibitions were distributed in tween the larger buildings, ply for the grounds and build sheel from the river by two ex Worthington pumps, with a 00,000 gallons a day. There of pipe for its distribution, in feet in the Main Building alone, 1,66 fire-hydrants. The pressure was supplied by a stand-pipe, 100 feet high and 42 inches in diameter. Above this stand-pipe
NEW ORLEANS EXPOSITION.

was an electric light of 100,000 candle-power, and five others of 50,000 candle-power, on towers 125 feet high, illuminating the grounds at night. Fifty additional Jenny arc lamps were distributed at various points. The Main Building was lighted by the Louisiana Electric Light Company with 800 arc lamps of 2,000 candle-power each. The Brush Electric Illuminating Company furnished the out-door lights and the 800 arc lights in the Government Building. The Edison Company furnished the light for the Art Building, Music Hall, and the offices and smaller spaces of all the buildings, with 4,800 incandescent lamps. An interesting feature of the ornamentation of the grounds was a garden of semi-tropical plants near the river-front to the south of the principal buildings. It included groves of orange, banana, lemon, mosquit, and magnuey, and spaces devoted to the flora of Louisiana, Florida, California, Mexico, and Central America. In front of the Mexican quarters was a separate garden of plants characteristic of that country, including many forms of the cactus, in the midst of which was a large fountain.

After the Exposition organization was formed and the plans were laid, the liberal responses from foreign governments, the several States, and intending private exhibitors, caused a gradual enlargement of many of the proposed features of the Exhibition, and, as little more than a year was allowed for making the actual preparations, it was not ready for opening on the day originally fixed. It was therefore postponed until December 16. Even then the arrangements were far from complete, and a considerable portion of the exhibits were not in place. On the opening day the streets of New Orleans were gayly decorated. A military parade preceded the start of the official party for the Exhibition grounds, and some of the companies attended it as an escort. This party included the Governor of the State, the mayor of the city, a number of representatives of other States and countries, members of the United States Cabinet, and those officially connected with the Exposition. It proceeded to the grounds by way of the river, and the ceremonies took place in the Music Hall, in the center of the Main Building. They consisted of an opening prayer by the Rev. T. DeWitt Talmage, of Brooklyn, N. Y.; an address by Director-General Burke, turning over the buildings to the Board of Management; a response by the President of the Board, Mr. Edmund Richardson; a telegraphic communication to the President of the United States, informing him of the readiness of the Exposition; his reply, declaring it formally opened; the starting of the engines in the machinery section on this announcement; congratulatory addresses by the mayor of New Orleans and the Governor of Louisiana; a poem by Mrs. Mary Ashley Townsend; music by the Mexican band and Cuirier's band from Cincinnati; and the receipt of dispatches of congratulation from various quarters. The President of the United States had been unable to accept the invitation to be present and formally open the Exhibition, and, on account of the shortness of the session then begun, it was impracticable for Congress to be represented. The Government was, however, directly represented in the presence of Secretary of the Interior H. M. Teller and Postmaster-General Frank Hatton, in addition to official representatives on behalf of the Government's share in the Exhibition. It was also arranged that the President should open the Exposition by an electric communication. He awaited the signal in the East Room of the White House at Washington, in the midst of a distinguished company, including committees of the two houses of Congress. Each step in the proceedings at New Orleans was announced by telegraph, and the address of the President of the Board of Managers, presenting the Exposition to the President of the United States, was transmitted verbally. Mr. Arthur read his response before the company, and it was immediately transmitted to New Orleans. The President then touched an electric key, which gave the signal for starting the machinery in the Main Building.

The Main Building was devoted to general exhibits, foreign displays, and the machinery department. The area covered by it was 1,665,030 square feet, and, including the galleries, it had a floor-space of nearly 2,500,000 square feet. It compared with the area covered by other great exhibitions as follows:

<table>
<thead>
<tr>
<th>Exhibition</th>
<th>Area (sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crystal Palace, London (1851)</td>
<td>1,090,000</td>
</tr>
<tr>
<td>Paris Exhibition (1855)</td>
<td>445,000</td>
</tr>
<tr>
<td>Paris Exhibition (1867)</td>
<td>416,000</td>
</tr>
<tr>
<td>Vienna Exhibition (1873)</td>
<td>490,000</td>
</tr>
<tr>
<td>Philadelphia Main Building (1876)</td>
<td>313,000</td>
</tr>
<tr>
<td>Atlanta Exhibition (1893)</td>
<td>375,000</td>
</tr>
<tr>
<td>Louisville Exhibition (1893)</td>
<td>375,000</td>
</tr>
<tr>
<td>New Orleans World's Exposition, Main Building alone</td>
<td>1,665,030</td>
</tr>
</tbody>
</table>

The area was divided by aisles having an aggregate length of over six miles, and illuminated at night by 800 arc and 15,000 incandescent electric lights. The space was laid in rectangles designated by the pillars marking their limits. Along the main front of the building, on its eastern side, in projections of the wall, were arranged the various offices connected with the management and administration of the enterprise. Next to these, and separated from them by the first longitudinal aisle, was a space 24 feet wide extending the whole length of the building, devoted to raw and manufactured products, ores, minerals, and woods. Inside, and parallel to this, was a division 46 feet wide for textile fabrics, clothing, etc. Another space of equal width was devoted to alimentary products; and next to this a space 24 feet wide contained educational and literary exhibits. Across the southern end to the machinery section, the general exhibits of merchandise and the products of industry and
NEW ORLEANS EXPOSITION.

akill were contained, and the corresponding space at the northern end was occupied by a large and varied display of agricultural machinery and implements used in all the processes from the breaking of the soil to the final preparation of the products for use. The central area on both sides of the Music Hall was assigned to the foreign displays. The countries represented here were Mexico, Honduras, Guatemala, United States of Colombia, by twenty batteries of boilers, and transmitted through a double-riveted steel pipe 30 inches in diameter and 700 feet long. The main engine-room occupied a space 300 feet long and 60 feet wide across the middle of the machinery section. The aggregate power afforded by the boilers was 5,200 horse, and by the 24 separate engines 4,500 horse. The largest engine was a Harris-Corliss of 850 horse-power, the band-wheel of which was 24 feet in diam-

**THE GROUND PLAN.—SCALE 1,360 FEET TO THE INCH.**

A. Main Building.
B. United States and State exhibits.
C. Horticultural Hall.
D. Mexican Building.
E. Art Gallery.
F. Factory and mills.
G. Live-stock stables, etc.
H. Restaurant and refreshments.
I. Grand Fountain, eighty feet high.
J. Live-stock Arena.
K. Saw-mills and wood-working machinery.
L. Wharf, Mississippi river.

Venezuela, Nicaragua, Costa Rica, San Salvador, Jamaica, Belize, Brazil, Denmark, Sweden, Norway, Great Britain, France, Portugal, Spain, Italy, Austria, Hungary, Russia, Belgium, Germany, Japan, Siam, China, Turkey, and Asia Minor. By far the largest of these collections of exhibits was that of Mexico, covering an area of 160,000 square feet. The general classification in these sections included minerals, woods, natural products, raw materials, manufactured articles, and works of skill and design. The representations of the Central American countries were more complete than ever before made at a world’s fair, but those of the West Indies and South America, with the exception of Jamaica, Brazil, and Venezuela, were not extensive. The galleries extending along the eastern front and across the ends of the building to the machinery department were devoted to a variety of special exhibits of manufacturers and others. Among the general exhibits of the Main Building many of the manufacturing and trading establishments of the United States were represented.

The machinery section, occupying 300 feet of the width of the Main Building, contained with the extension 471,800 square feet of area. The boiler-house and repair-shop were placed outside of the building, and separated from it by a broad roadway. The steam was supplied
mills, in which the rough logs were reduced to every form of manufactured lumber.

The display of the United States Government occupied a broad section across the entire width of the Government Building. An appropriation of $300,000 was made by Congress for this feature of the Exhibition. The officers of administration occupied the extreme eastern end of this section, and the exhibits were arranged thence across the building in the following order: Department of the Interior, with an area of 29,670 square feet; the Smithsonian Institution, with an area of 19,985 square feet; the Agricultural Department, 10,780 feet; War Department, 7,014 feet; Naval Department, 6,815 feet; Treasury Department, 2,030 feet; Department of Justice, 986 feet; Post-Office Department, 5,876 feet; and State Department, 8,300 feet. Among the exhibits of the Interior Department were contributions from the Land-Office, consisting largely of maps, charts, pictorial and statistical representations, and a large collection of ores and minerals from the public lands. The Patent-Office contributed over 5,000 models, and many pictorial representations of inventions and mechanical designs. The Bureau of Education exhibited models of school architecture and furniture, apparatus, charts, text-books, and other appliances and illustrations of various methods of teaching, including those of institutions for the deaf and dumb and the blind. A large and interesting display was made of the Bureau of Ethnology, illustrating especially the antiquities of the Indian country. The Smithsonian Institution made a full display of its scientific publications; the Fish Commission exhibited models of many species of fish, apparatus for artificial hatching, boats and other appliances for catching fish, and many photographs illustrative of the fishing industry; and a large collection of specimens, including stuffed and mounted animals and birds, was furnished by the National Museum. The Geological Survey presented relief maps, and an interesting collection of specimens. A series of photographic transparencies illustrated features of geology and ethnology in the Rocky Mountain and Pacific coast regions, and a series of panoramic views of the canons of the Colorado was presented. The space occupied by the Department of Agriculture contained systematically arranged collections of products of the soil, pictorial representations in botany, entomology, horticulture, arboriculture, etc., together with charts and statistics in great variety. The chief feature of the War Department exhibit represented the work of the medical staff and the hospital service. The Navy Department made a display of models, ordnance, torpedoes, surveying, and other instruments, charts, equipment for Arctic exploration, etc., together with an astronomical clock connected by electricity with the Naval Observatory at Washington. The Treasury Department included in its exhibit illustrations of the Light-house and Life-Saving Service, and specimens of the work of the Bureau of Printing and Engraving and of the Mint. The most prominent feature of the State Department display was a globe fifty feet in diameter of different colored glass, showing the geographical and political divisions of the earth, with the area, population, principal productions, and industries and commercial interests graphically delineated. Grouped about this were specimens of the products and manufactures and charts illustrating the trade of various countries.

This section also contained a collection of portraits of public men connected with the history of the Government. The Post-Office Department constructed a model post-office with all the appliances of the mail service, in which business was actually carried on during the Exposition. The mail-cars, pouches, and other post-office agencies were fully shown.

The separate State exhibits were grouped upon the floor of the Government Building on either side of that of the national Government, being supplemented by special displays of several railroad companies. The Exposition managers set aside the sum of $5,000 for each State and country to promote their special displays, and in many cases appropriations were made by the State governments for the purpose. These means were supplemented by private effort, and the result was a remarkable display of the resources, products, and varied interests of the several States. The Southern States and the Northwestern States and Territories, and those of the Pacific slope, were represented with special fullness and variety.

The State exhibits differed according to the contributions made by their citizens, the efforts of their governments, and the taste and judgment of those having them in charge. The prevailing plan included specimens of the minerals—in some cases of the soil as well—building and ornamental stone, woods and wild products, grains and fruits, manufactured products, works of skill and art, and the appliances of education and useful cultivation. New Hampshire and Florida presented models in relief of the surface and topographical peculiarities of the States. Kentucky displayed a series of photographic representations of scenery, buildings, cattle, etc. Colorado and some other Western States and Territories presented scenic displays on a large scale, and in many cases picturesque structures were formed of some of the leading products of nature and industry. Several States included in the exhibits collections of the animals, birds, fishes, and fossils found within their borders. In the sections of Dakota and Montana there were illustrations of camp-life and of hunting, mining, etc. Ores and mineral specimens were especially prominent in the displays of Colorado, Nevada, Arizona, New Mexico, and California. Coal and iron were conspicuous features of the displays of Kentucky, Tennessee, and Alabama; cotton, of
NEW ORLEANS EXPOSITION.

sec of Mississippi, Georgia, and South Carolina; tobacco, of Virginia; sugar and rice, of Louisiana; fruits, of Florida. The Northeastern State exhibits were characterized by a variety of manufactured articles. The displays of the railroad companies were made chiefly of the minerals and agricultural products of the sections which their lines traversed.

The Horticultural Hall was devoted to displays of fruits and plants from the States of a Union and from foreign countries, Mexico, Central America, and the West Indies being all represented. A hot-house, 250 feet by 20, occupied the southeastern part of the building, and contained a profusion of tropical plants. The corresponding spaces at the sides of the rest of the building were devoted to a great variety of growing plants from temperate and semi-tropical regions, while fifty feet of the sixth of the building through the middle of whole length was taken up with tables on which ripe fruits and vegetables were displayed. Premiums amounting to $32,000 were offered for the finest displays and best varieties of fruits and plants.

The Agricultural Exhibition was under the direction of Dr. George B. Loring, the United States Commissioner of Agriculture, and the mediate superintendence of the Hon. George Johnson, of Kansas. It included several divisions in which premiums were offered, these comprised displays of fat stock; horses, mules, and donkeys; dogs; poultry, and pets; cattle; dairy products; sheep and goats; wine; farm and garden products; farm machinery and utensils; machinery for producing of agricultural products; humane inventions, and buildings. The Dairy Exhibit occupied 60,000 square feet, of which 10,000 was refrigerated. Over 10,000 packages of butter and 8,000 of cheese were displayed. Among other special exhibits were those instructive that involved the manufacture of the fiber, and the process of distilling and harvesting rice and sugar, and repairing the products for the market.

There was a special exhibition of women's work, for which $50,000 were set apart by the exposition Management. It was under the charge of Mrs. Julia Ward Howe, of Boston, as Chief Commissioner, and an efficient staff of assistants from the various States. The space assigned to it was the west gallery of the Government Building, where it occupied 10 feet in length and the whole width of the gallery, of 40 feet. A separate section was assigned to each State; but in a few cases, including those of Texas and Wisconsin, the displays of woman's work were included in the state sections on the main floor. The exhibition included many works of art and design, eddwork in variety, useful inventions, literature, etc. The funds were increased by private subscription and in other ways, and a display was considered the most varied and complete ever made of the products of feminine skill, ingenuity, and industry.

There was also a department for the special exhibition of the work of the colored race, under the charge of the Hon. Blanche K. Bruce, of Mississippi, as Chief Commissioner, with a special commissioner from each State. For this also $50,000 was set apart by the management. It occupied the gallery at the north end of the Government Building.

Aside from the educational features of the State exhibits there was a collective exhibition of educational apparatus, methods, etc., which occupied the east and south galleries of the Government Building.

It was several weeks after the opening before all the departments of the Exposition were in a completed state, and the attendance during this period did not fulfill the expectations of the managers. The receipts did not fully cover the expenses of administration, and there was a considerable deficit in consequence of the fact that the expenses of preparation had largely exceeded the estimates.

NEW YORK (STATE). The session of the Legislature, which began on the first day of January, came to a close on the 10th of May. Dennis McCarthy, of Syracuse, was made President of the Senate, to appoint the committees and preside in the absence of the Lieutenant-Governor. Titus Shepard, of Herkimer county, was chosen Speaker of the Assembly. The Senate was composed of 18 Republicans and 13 Democrats, and the Assembly of 76 Republicans and 62 Democrats.

Action of the Legislature.—The most important work of the session, and that which occupied the largest share of attention, related to the administration of municipal affairs in the city of New York. Mr. Frederick S. Gibbs and Mr. Theodore Roosevelt, of that city, as chairmen respectively of the Senate and Assembly Committees on the Affairs of Cities, were largely instrumental in shaping and directing legislation on this subject. Two investigations were ordered relating to the matter, which ran through nearly the whole time of the session. The Senate Committee on Cities undertook an inquiry into the working of the Department of Public Works of the city of New York; and a special committee of the Assembly, with Mr. Roosevelt at its head, made an investigation extending, so far as time allowed, to all departments of the city government. The investigation of the Senate committee resulted in no practical action. Three separate reports were made at the very end of the session by different members of the committee, involving considerable disagreement as to the facts found. An incident of this investigation was the arraignment before the bar of the Senate of a witness who, under the advice of counsel, refused to answer questions propounded to him by the committee. He was declared in contempt, and committed to jail in Albany. The matter was brought before the Supreme Court
in that district, and the power of the Senate to commit for contempt was sustained. The Assembly special committee made a searching investigation, and submitted a report on the 14th of March. Absence were discovered in the offices of the county clerk, register, surrogate, and sheriff in the collection and retention of unlawful and extravagant fees. Several bills were submitted for the reform of these abuses. Two of these affected the county clerk’s office. One provided for a salary of $15,000 a year for that official after the expiration of the term of the existing incumbent, and required all fees to be strictly accounted for, and turned into the treasury of the city. The other required estimates to be submitted to the Board of Appointment for the expenses of the office, for the employment of clerks, etc., and allowances to be made by the board as in the case of other municipal departments. One bill was submitted affecting the register’s office. It provided for a salary of $13,000 a year, and required all fees to be accounted for, and the appointment and compensation of clerks and subordinates was made subject to the approval of the Board of Estimate and Appointment. Another bill was intended to prevent the exaction in the surrogate’s office of fees not authorized by law, and the employment thereof and salaries not legally connected with the office; and took from the Board of Aldermen all control over the employment and compensation of subordinates. The latter was provided for as in other cases, the surrogate submitting estimates for the expenses of his office to the Board of Estimate and Appointment. It was not deemed expedient to supersede the fee system in the sheriff’s office, but the power to make allowances for service in conveying and caring for prisoners, in which extravagant overcharges had been discovered, was taken from the Board of Aldermen, and lodged in the Board of Estimate and Appointment. A bill was submitted abolishing imprisonment for debt, except in certain specified cases, and another repealing the act that permitted the transfer of prisoners from the city prison to the charge of the sheriff in the county jail. The special committee continued its investigation by the permission of the Assembly, and made a supplementary report on the Police Department on the 16th of May, too late in the season for any practical action. Much evidence of abuse in the appointment of members to the force, and of inefficiency, especially in the suppression of gambling, was found, and the committee recommended the substitution of a single police commissioner for the existing four-headed commission. In closing the report the committee said:

In hearing this, our last report, we feel obliged to say that, judging from information received by us, there are several other departments in the city government (notably the Board of Excise, the Comptroller’s office, and the Department of Docks) which stand in need of much thoroughgoing. And as a result of our observations of the general workings of municipal politics, we would urge that several changes be made in the charter of the city; in especial, that the municipal election be held in the spring, that the mayor’s term be made to last for three years, that all departments be made single-headed, and that all appointees of the mayor go out of office with him.

Acts affecting Municipal Administration.—Legislation for the reform of the municipal administration of the city of New York had been initiated before the report of the Assembly committee was submitted. Mr. Roosevelt had introduced a bill abolishing the power of the Board of Aldermen to confirm the appointments of the mayor, leaving the latter untrammeled in his choice of heads of departments and other officers, of whom the appointment was by law placed in his hands. This was to go into effect with the year 1885. A public meeting was held in New York, and a committee of fifty-three citizens was appointed to promote this and other measures of municipal reform. The bill passed the Assembly February 20 by a vote of 70 to 51, twelve of the affirmative votes being cast by Democrats, and seventeen of the negative votes by Republicans. It passed the Senate March 5 by a vote of 24 to 7, five of the affirmative and all the negative votes being cast by Democrats. In signing the bill, on the 17th of March, the Governor filed a memorandum answering the objections that had been urged against it, and giving his unqualified approval of the principle involved.

The power of removal was in no way modified, and a bill giving to the Mayor of Brooklyn the power to remove his own appointees at pleasure was defeated. A bill was introduced in the Senate by Mr. Gibbs, providing that the terms of such officers as were to be appointed by the Mayor of New York before the close of his term of office, should end on the 1st of February, 1885, so that their successors might be selected by the newly elected mayor, under the law freeing him from the necessity of securing the approval of the Board of Aldermen. In the Assembly an amendment was adopted, providing that such successors should go out of office with the mayor appointing them, but neglecting to make permanent provision for the tenure of those holding the office to be affected, while retaining in force the general provisions of existing law on the subject. This act as amended passed both houses near the end of the session, but, when considered by the Governor after the adjournment, failed to receive his approval. In giving his objections he said:

One of these defects is that it actually makes no provision in the tenure of office act for the appoint-ment of any officer or head of departments after the immediate successors of those in office. The bill, as it stands now, fixes and regulates the terms of office of only such officers as shall be appointed during the remainder of the term of the present mayor. Under the next mayor can only appoint successors to such officers as shall be appointed by the present mayor during the remainder of his term. The present mayor could defeat the evident intention of the bill by altering the present incumbent to take over till the expiration of his term. I say could, I do not suppose...
NEW YORK (STATE).

he would. Further, in fixing the terms of the appointees of the next mayor, the bill provides in the same section for two limitations to such terms, that is four years from the first day of May, 1888, as provided for by the present law, and one year and eleven months from Feb. 1, 1888. From the last limitation the word "officers" has been omitted, though embraced in the others.

A bill providing for three park commissioners for New York instead of four was vetoed by the Governor at the same time on account of "defective and careless drafting," which, he said, made it "a jumble of contradictions." Bills making the comptroller of the city elective for a term of three years, and providing for the election of a President of the Board of Aldermen by the people, were passed with little opposition, and received the approval of the Governor. The bills reported by the special committee of the Assembly received the support of the Citizens’ Committees of Fifty-three, and a public meeting was held in New York to promote their passage. Those affecting the offices of county clerk, register, surrogate, and sheriff became laws before the end of the session. An effort was made to transfer the Bureau of Elections of the city from the charge of the Police Commissioners to that of a commission made up of the chief judges of the four city courts. This excited considerable political opposition on the Republican side, and was defeated in the Assembly two days before adjournment by a vote of 58 to 68—89 of the negative votes being cast by Republicans and 24 by Democrats.

A number of other measures affecting the city of New York occupied a large share of time during the session. One, increasing the salaries of policemen of the three grades from $800, $900, and $1,000 a year to $1,000, $1,100, and $1,200, respectively, became a law. The same act provided that the pay of the city should be devoted to the police pension fund. The fees of Sandy Hook pilots were reduced about 25 per cent. An effort to place the Health Officer of the Port on a salary, and to prohibit the introduction of surface patients of the Quarantine Commission from the fees, was defeated. A bill was passed and approved requiring all wires of telegraph, telephone, and electric light companies to be placed underground after Nov. 1, 1886, and forbidding the erection of any more poles or wires in the streets, in cities of 500,000 inhabitants and more. An important act amending the building laws and limiting the height of buildings in New York city was defeated. A bill authorizing the acquisition of lands for new parks in New York city above the Harlem river, in accordance with the recommendations of the commission of 1883, was passed. A bill providing that municipal elections be held in the spring, that the mayor’s term be three years, that all departments be single-headed, and that their heads hold office only during the term of the mayor appointing them, failed. The constitutional amendment providing for general legislation only for the government of cities which was proposed in 1882 was defeated at this session, while that limiting the power of cities of 100,-000 inhabitants to incur indebtedness was approved and submitted to the people.

A bill amending the civil-service act of 1888 to make its application obligatory in all cities of 50,000 inhabitants and over was introduced in the Assembly by Mr. Clinton, of Erie county, and passed after various efforts to modify or defeat it. Attempts to exclude police officers and firemen from its operation were defeated; but an amendment was adopted giving a preference in appointments to honorably discharged soldiers and sailors. The bill as finally passed applied the methods of the law to all cities in the State without regard to population.

Street Railroad Act.—There was a long contention over a general street surface railroad bill, owing to the efforts of rival interests to secure or defeat its passage. The constitutional amendment of 1875 prohibited the passage of special acts authorizing the construction of street railways, and no general act had been passed, owing to the efforts of special interests to secure advantages. This year the draft of an act had been submitted by the Railroad Commissioners, but a company in New York city had proceeded under the rapid transit act to lay out lines of surface road to be operated by cable traction, and had secured the favorable action of a commission. It came to the Legislature to secure an extension of time for the commission acting in its behalf, an amendment of the law favorable to its project, and the defeat of the general surface railroad bill. Representatives of actual and projected lines of street railroads became interested in defeating the cable scheme, and securing the passage of the general act, and out of this rivalry a sharp contest arose in the lobbies and chambers of the Legislature. The result was the defeat of the cable scheme, and the passage of the general surface railroad bill, with an amendment prohibiting the construction of surface roads under authority of the rapid transit act. The principal feature of the act was the requirement of the consent of the local authorities and of a majority in interest of the property-owners along the line of any proposed road, or, failing the latter, the favorable decision of a commission appointed by the Supreme Court to determine whether the projected road ought to be constructed, before any company could build or operate a surface railroad in any city. The use of the tracks of one company by another for the distance of 1,000 feet without the consent of the former was provided for, and the way was left open for the adoption of other motive power than horses, with the consent of property-owners and local authorities. All companies acting under the law were required to pay into the treasury of the city in which their roads were operated 5 per cent. of their gross receipts for each five years, and 5 per cent. thereafter, and to keep the pave-
ments between and adjacent to their tracks in repair. The opposition to the bill was carried before the Governor, but he approved it, and gave in a memorandum filed with him reasons for not regarding the objections as valid.

A company having an old franchise for an underground railroad in Broadway, New York, secured the passage of a bill through both houses so modifying and enlarging its privileges as to permit the excavation of nearly the entire street-way, and the construction of a railroad on the arcade plan with separate tracks for through and way travel and underground sidewalks, etc. This was vetoed, on the ground that it was opposed by property-owners, whose rights were not sufficiently guarded.

Protection of Adirondack Forests.—The question of protecting the Adirondack region from the destruction of the forests was strongly urged upon the attention of the Legislature and a bill was introduced at the instance of the New York Chamber of Commerce providing for a commission to ascertain the proper boundaries for a State reservation, and to acquire the land included therein. This met with strong opposition from the northern counties, and, after a number of substitutes had been considered, a bill was finally passed providing for the appointment of a commission to investigate the subject and report on the necessity of legislation. This commission was appointed by the Comptroller, and consisted of Prof. C. S. Sargent, of Harvard University; D. Willis James, of New York; William A. Poucher, of Oswego; and Edward M. Shepard, of Brooklyn. Their investigation was made during the summer and autumn, and their report was submitted to the Legislature of 1886.

Prison Labor.—The subject of contract labor in the prisons and penitentiaries of the State occupied much attention. The question of its abolition had been submitted to the people at the election of 1885, and was favored by a large majority of the voting population. At the beginning of the session a bill was introduced in the Assembly by Mr. Howe, of New York, at the instance of the State Prison Association, providing for the appointment of a commission to inquire into the working of the various systems of employing convicts, and make a report with recommendation, not later than the 1st of March. This was passed, and Theodore W. Dwight, George B. Sloan, Walter N. Thayer, Norman N. Allen, and Darius A. Ogden were appointed on the commission; but there had been so much delay in the passage of the measure that in the time allowed they could only make a preliminary report, and ask for an extension of time. Meanwhile, a bill was passed, against the advice of the Superintendent of Prisons, prohibiting the making of any new contracts or the renewal of those existing. On the 1st of March a bill reached its final passage extending the time of the commission, and still leaving the scope of its inquiry such as to include the contract system. This was vetoed by the Governor, on the ground that the commission had then ceased to exist, and because the abolition of the contract system was not recognized as the object of inquiry limited to providing a substitute for it. Another bill was brought in, reviving the same commission and allowing it until the 15th of January, 1886, to complete its investigation, but this failed to pass, and the matter was left with the contract system practically abolished, nothing provided to take its place, and no agency set at work to prepare a substitute, or guide future legislation.

Miscellaneous Legislation.—Among the other bills passed during the session was one prohibiting the manufacture and sale of oleomargarine and other imitations of butter, and providing for a commission to see that its provisions were enforced. Under this Josiah K. Brown, of Oneida county, was appointed Dairy Commissioner. A new bill prohibiting the manufacture of cigaures in tenement-houses, intended to avoid the defects on account of which a former set for the same purpose had been declared unconstitutional, was passed. The sum of $1,000,000 was appropriated to continue the work on the new Capitol. An effort was made to secure the adoption of the codification of the civil law of the State known as the Field Civil Code, but without success. Various efforts to change the excise regulations of the State, including a constitutional amendment prohibiting the manufacture and sale of intoxicating liquors, were defeated. A bill prohibiting members of the Legislature and others employed in the public service from receiving and using free passes on railroads was defeated, and one providing that not more than twelve hours' work a day should be exacted from conductors and drivers on street-cars was vetoed by the Governor on the ground that there was nothing in it to prevent a reduction of wages corresponding to the reduction of the hours of labor, and it could be of no practical benefit to workingmen on street cars.

Investigations.—A special committee of the Assembly made an investigation into the management of the Western House of Refuge, at Rochester, during the session, and submitted an unfavorable report. It said that many charges that had been made were unfounded, but the dormitories were dreary, cramped, and unfurnished fastnesses, fit only for felons, the hospital accommodations totally inadequate, the educational provisions far from satisfactory, in their administration, the methods of discipline very faulty, excessive and cruel punishments being inflicted by irresponsible overseers and unjust assistant superintendents, and the system radically defective and in need of thorough revision. Recommendations for improvement were made, but no legislative action was taken. The Governor, in vetoing certain items of appropriation for increasing the means and facilities of this institution, said:

The institution for which these appropriations were intended has within a few months been investigated.
the State was specially interesting, owing to the fact that two of its prominent citizens, President Chester A. Arthur and Gov. Grover Cleveland, were regarded as possible candidates of the two political parties for the office of President of the United States. Each had zealous supporters and vigorous opponents in his own party. The President was opposed largely by men who had formerly been hostile to Senator Conkling and Gen. Grant, and who were in favor of the nomination of James G. Blaine, and was also regarded with disfavor by some of the independent elements of the party and the more ardent advocates of civil-service reform. The opposition to Gov. Cleveland came chiefly from the Tammany organization in the city of New York, to which his course as Governor had not been satisfactory.

The Republican State Committee met in New York on the 4th of March and issued a call for the party convention to be held at Utica on the 23d of April. It was announced that four delegates at large and four alternates to the National Convention were to be chosen, and also district delegates and alternates in case such representatives should not have been selected in the districts before the meeting of the State Convention. The option of choosing the district delegates in district conventions not less than fifteen days prior to the State Convention was announced. There was some controversy over the question of holding district conventions, but they were in every case held, leaving to the State Convention only the choice of delegates at large. After the meeting of the committee, the question was also raised as to the propriety of nominating two candidates for judges of the Court of Appeals, the only State officers to be elected this year, at the same convention that was called to choose delegates to the National Convention. This was not authoritatively settled until the convention met, when it was decided to make the nomination of the two incumbents of the bench, whose terms were to expire, Charles H. Andrews, Republican, and Charles A. Rapallo, Democrat, were nominated without opposition. The friends of Arthur and Blaine were very nearly equally divided in the convention, and the balance of power was held by seventy-six representatives of the Independent element, who favored the nomination of Senator George F. Edmunds, of Vermont, for President. These men, by skillful management and a combination with the Arthur men, secured the choice of Andrew D. White, Theodore Roosevelt, John J. Gilbert, and Edwin Parkard, as delegates at large to the National Convention at Chicago. These men were not identified with either the Blaine or the Arthur faction, and with the exception of the first were known to favor the nomination of Edmunds. The platform adopted before, among other things, that the Republican party of the State expressed—

Its satisfaction with the honest, frugal, and intelli-

THE APPROVAL OF THAT POLICY OF PROTECTING HOME INDUSTRY FROM FOREIGN COMPETITION WHICH HAS, THROUGH A CENTURY OF NATIONAL BEING, ENERGIZED IMMIGRATION, REVITALIZED THE FISCAL AND MANUFACTURING INTEREST, AND ASSURED UNPARALLELED PROGRESS AND PROSPERITY, ALL VariATIONS FROM WHICH POLICY HAVE BEEN THE OCCASION OF BUSINESS CONCERN, AND DISASTER; AND WHICH, THEREFORE, IS ALIKE JUSTIFIED IN INTELLIGENCE AND BY EXPERIENCE.

ITS PURPOSE THAT EQUAL CIVIL RIGHTS SHALL BE MAINTAINED UNDER THE GUARANTEE OF THE CONSTITUTION EVERYWHERE IN THE LAND, AND THAT THE FRANCHISE SHALL BE RESPECTED SO THAT EVERY VOTER SHALL HAVE A FREE BALLOT WHICH SHALL BE HONESTLY COUNTED.

ITS RECOGNITION OF THE NATIONAL OBLIGATION IMPOSED BY THE ENFRANCHISEMENT OF AN UNEDUCATED RACE, ITS APPRECIATION OF THE EXTRAORDINARY BURDENS THAT HAVE ACCRUED UPON CERTAIN COMMONWEALTHS, AND ITS CORDIAL APPROVAL OF LEGISLATION WITHIN JUST CONSTITUTIONAL LIMITS WHICH SHALL EXTEND FEDERAL AID TO THE VARIOUS STATES IN THE WORK OF EDUCATION.

ITS WISH FOR THE REMOVAL OF ALL UNJUST RESTRICTIONS UPON AMERICAN SHIPPING INTERESTS, THE DEVELOPMENT OF OUR MARITIME INDUSTRIES, AND, AS INCIDENTAL THERETO, THE ESTABLISHMENT OF OUR NAVY ON A FLOATING IN KEEPING WITH MODERN NOCITIES AND OUR DIGNITY AS A NATION.


ITS PROTESTATION AGAINST THAT POLICY IN CONGRESS WHICH DERIVES ITS WEAKNESS AND IMBECILITY FROM THE DEMOCRATIC MAJORITY OF THE HOUSE OF REPRESENTATIVES, HAS DISTURBED THE SMOOTH AND SATISFACTORY COURSE OF BUSINESS AND MORTARY AFFAIRS THAT HAS BEEN ESTABLISHED UNDER REPUBLICAN SUSPICION, AND THAT BY IMPEACHING AND INRISIBLE ASSAULTS UPON WISELY MATURED AND ADVANTAGEOUS LEGISLATION HAS BROUGHT THE BUSINESS AND THE INDUSTRIES OF THE COUNTRY TO THE VERGE OF UNCERTAINTY AND DISTRUST.

A RESOLUTION WAS ALSO ADOPTED REQUESTING THE NATIONAL CONVENTION TO PROVIDE THAT, "IN FUTURE NATIONAL CONVENTIONS, REPRESENTATIVES SHALL BE PROPORTIONATE TO THE NUMBER OF REPUBLICAN VOTERS OF THE STATE AND CONGRESSIONAL DISTRICTS RESPECTIVELY." CANDIDATES FOR PRESIDENTIAL ELECTORATE WERE NAMED FOR ALL THE DISTRICTS, AND MEMBERS OF THE STATE COMMITTEE TO CONDUCT THE CANVAS WERE CHOSEN, THE DELEGATES FROM EACH DISTRICT DESIGNATING ONE MEMBER.

THE MEETING OF THE DEMOCRATIC STATE COMMITTEE TO ISSUE A CALL FOR THE CONVENTION WAS HELD AT ALBANY ON THE 21ST OF MAY, AND SARATOGA WAS SELECTED AS THE PLACE, AND JUNE 18 AS THE TIME, FOR THE STATE CONVENTION. "ALL DEMOCRATIC ELECTORS OF THE STATE, AND SUCH CITIZENS AS WILL, IRRESPECTIVE OF PAST DIFFERENCES, UNITE WITH THEM IN AN EFFORT TO SECURE A PURSE, ECONOMICAL, AND CONSTITUTIONAL ADMINISTRATION OF THE FEDERAL GOVERNMENT," WERE INVITED TO JOIN IN CHOOSING THREE DELEGATES FROM EACH ASSEMBLY DISTRICT. THE ADHERENTS OF GOV. CLEVELAND WERE ACTIVE IN OBTAINING DELEGATES TO THE STATE CONVENTION, AND THEIR EFFORTS WERE ENCOURAGED BY THE NOMINATION OF MR. BLAINE BY THE REPUBLICAN NATIONAL CONVENTION IN JUNE, AS THOSE REPUBLICANS IRRESPONSIBLE TO HIS CANDIDACY WERE UNDERSTOOD TO REGARD MR. CLEVELAND FAVORABLY. THE OPPONENTS OF THE GOVERNOR WERE NOT UNITED IN BEHALF OF ANY OTHER CANDIDATE.

WHEN THE CONVENTION MET, A MAJORITY OF THE DELEGATES WERE FAVORABLE TO CLEVELAND, BUT THEIR STRENGTH WAS NOT SUFFICIENT, OR THE OPPOSITION WAS KNOWN TO BE TOO DETERMINED, TO JUSTIFY AN EFFORT TO PLEDGE THE DELEGATES TO THE NATIONAL CONVENTION TO HIS SUPPORT. THE DEMOCRATS OF THE TAMPANNA ORGANIZATION IN NEW YORK DEMANDED THAT, INSTEAD OF THE TWENTY-FOUR REPRESENTATIVES ALLOWED TO THEM IN PREVIOUS CONVENTIONS, THEY SHOULD HAVE A NUMBER EQUAL TO THAT ACCORDED TO THE RIVAL ORGANIZATION KNOWN AS THE COUNTY DEMOCRACY. THEIR DEMAND WAS GRANTED WITHOUT OPPOSITION. THE RESOLUTIONS ADOPTED INCLUDED INSTRUCTIONS TO THE DELEGATES TO THE NATIONAL CONVENTION TO ACT AND VOTE AS A UNIT, AND NO OPPOSITION WAS MADE TO THIS. THE RESOLUTIONS ADOPTED WERE AS FOLLOWS:

THAT THE DEMOCRACY OF THE STATE OF NEW YORK ASSEMBLED TO APPOINT ITS DELEGATES TO THE NATIONAL CONVENTION OF THE PARTY, COMMITTED TO THOSE DELEGATES IN ASSOCIATION WITH THE REPRESENTATIVES OF THE PARTY FROM THE OTHER STATES, THE GENERAL DECLARATION OF DEMOCRATIC PRINCIPLES UPON NATIONAL ISSUES, AT THE SAME TIME RECOGNIZING THAT NO ISSUE CAN BE MORE IMPORTANT THAN THE ELECTION OF THE PRESIDENT OF THE UNITED STATES, WHOSE CHARACTER AND PUBLIC REPUTATION SHALL GIVE TO THE WHOLE PEOPLE ASSURANCE OF AN HONEST, IMPARIAL, AND EFFICIENT ADMINISTRATION OF THE LAWS WITHOUT SUSPICION OF PERSONAL ENDS OR PRIVATE INTERESTS.

THAT AS A DECLARATION CONCERNING MATTERS OF STATE GOVERNMENT, THIS CONVENTION ADOPTS AND AFFIRMS THE RESOLUTION OF THE CONVENTIONS OF THE PARTY IN 1874, 1876, AND 1880, TO WHICH THE PEOPLE OF THE STATE HAVE GIVEN HEARTY APPROVAL; THAT IT RECOGNIZES THE DUTY OF THE LEGISLATURE TO RESPECT THE POPULAR VOTE IN 1853 FOR THE ABOLITION OF THE CONTRACT SYSTEM OF LABOR IN THE PRISONS, AND THAT IT HEARDLY COMMENDS ANVY THE EFFECTIVE AND UPRIGHT ADMINISTRATION OF GOVERNOR CLEVELAND.

THAT THE DELEGATES TO THE DEMOCRATIC NATIONAL CONVENTION TO BE APPOINTED ARE HEREBY INSTRUCTED TO ENSURE THAT CONVENTION AS A UNIT, AND TO ACT AND VOTE AS A UNIT IN ACCORDANCE WITH THE WILL OF THE MAJORITY OF THE MEMBERS THEREOF, EVERY DELEGATE OR ALTERNATE OCCUPYING THE PLACE OF A DELEGATE TO BE BOUND BY THE RULE, AND IN CASE OF THE ABSENCE OF BOTH DELEGATE AND ALTERNATE FROM ANY ASSEMBLY TO BE FILLED BY THE VOTE OF THE MAJORITY OF THE DELEGATION.

NEW YORK (STATE).

Withdrawn from the editorial charge of the Rochester newspaper which he had long con
nected, after the nomination had been made at Chicago, though he subsequently gave his ad
mission to the national ticket.

A convention of the National Greenback
Labor party was held in the city of New York
on the 30th of August, and nominated an elec
toral ticket in the interest of Gen. B. F. But
ner's candidacy for President. A Prohibition
ticket was also put in the field, pledged to the
support of John P. St. John.

Result of the Election.—The Independent revolt
against the candidacy of Mr. Blaine had con
siderable strength in the State, especially in
the cities of New York and Brooklyn, where
committees engaged in an active canvass
against him. Mr. Cleaveland received the for
cmal support of the Independent Republicans
so far as they were organized. While the
Tammany organization in New York city made
no secret of its dissatisfaction with Cleve
land's nomination, it gave a formal pledge of
its support to the national ticket. It re
fused, however, to unite with the other fac
tions in any political demonstration, and made
its own nominations for local offices. The
canvas was very warmly contested, and the
result of the election was so close as to cause
sensations for some days last it should not be
deliberately established by the returns. There
were charges on both sides of an intent to falsify
the result, and the count was very closely
watched. No grounds for any specific allega
tion of fraud at the election or irregularity in
the counties, beyond those clerical errors for
which the correction of which the law provided,
were discovered. The State Board of Canvassers met
at Albany on the 19th of November, and on the
21st the result of the vote for Presidential Elec
tors was officially declared. The highest vote for a
Democratic elector was 568,164, for a Repub
lican elector, 562,006; difference, 1,149. The
lowest vote for a Democratic elector was 568,
048, for a Republican elector, 561,071; differ
ence, 1,077. The difference between the high
est Democratic and lowest Republican vote
was 1,188, and the difference between the
votes for the candidates at the head of the re
spective tickets 1,047. The highest vote for
any candidate on the Prohibition ticket was
35,006, lowest, 34,948; for the name at the
head, 24,998; highest for the People's party
ticket, 17,004; lowest, 16,751; head, 16,953.
The total vote was 1,171,988. The total vote
for Judges of the Court of Appeals was 1,007,
798 and 1,067,816, respectively, for the two
places to be filled. Andrews received 1,069,
864, and Rapallo 1,068,414. Candidates of the
Prohibition and People's parties were voted for;
the highest vote for the former being
25,150, and for the latter, 6,870. Of the thirty
two representatives in Congress, Republicans
were chosen in seventeen and Democrats in sev
enteen districts. In the Eleventh and Twenty
ighth Districts there were no Republican can
didates. The State Senate remained unchanged
as elected in 1888—Republicans, 19; Democrats,
15. Of the Assemblymen chosen, 78 were Re
publican and 53 Democratic. The constituon
al amendment restricting the power of cities of
100,000 inhabitants and more to incur indebted
ness and levy taxes was ratified by a vote of
499,961 to 9,161, the total vote being 508,944,
and the majority in its favor 489,978. The fol
lowing is the amendment:

No county containing a city of over one hundred
thousand inhabitants, or any such city, shall be al
lowed to become indebted for any purpose or in any
manner to an amount which, including existing in
debtedness, shall exceed ten per centum of the as
sessed valuation of the real estate of such county or
city subject to taxation, as it appeared by the assess
ment-rolls of said county or city on the last assess
ment for State or county taxes prior to the incurring
of such indebtedness; and all indebtedness in excess
of such limitation, except such as may now exist,
shall be absolutely void, except as herein otherwise
provided. No such county or such city, whose pres
ent indebtedness exceeds ten per centum of the as
sessed valuation of its real estate, subject to taxation,
shall be allowed to become indebted in any further
amount until such indebtedness shall be reduced
within such limit. This section shall not be con
strued to prevent the issuance of certificates of indebted
ness, or revenue bonds issued in anticipation of the
collection of taxes, for amounts actually contained or
to be contained in the taxes for the year when such
certificates or revenue bonds are issued and payable
out of such taxes. Nor shall this section be construed
to prevent the issue of bonds to provide for the sup
ply of water, but the term of the bonds issued to pro
vide for the supply of water shall not exceed twenty
years, and a sinking fund shall be created on the
issuing of the said bonds for their redemption by
raising annually a sum which will produce an amount
equal to the sum of the principal and interest of said
bonds at their maturity. The amount hereby raised to be
made available by the counties or cities in which any
county containing a city of over one hundred thou
sand inhabitants, or any such city of this State, in ad
dition to providing for the principal and interest of
the existing debt, shall not, in the aggregate, exceed
in any one year two per centum of the assessed valua
tion of the real and personal estate of such county
or city, to be ascertained as prescribed in this section
in respect to county or city debt.

State Debt and Finances.—Aside from the fund
supply annuities for the Indians, the prin
cipal of which is $129,694.87, the only debt of the
State is that incurred on account of the can
als. The following statement shows its con
dition for the fiscal year ending Septem
ber 30:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate debt Sept. 30, 1888</td>
<td>$8,545,180</td>
</tr>
<tr>
<td>Aggregate debt Sept. 30, 1884</td>
<td>$8,565,180</td>
</tr>
<tr>
<td>Decrease of aggregate debt during year</td>
<td>$2,000</td>
</tr>
<tr>
<td>Aggregate sinking fund Sept. 30, 1888</td>
<td>$2,495,528</td>
</tr>
<tr>
<td>Aggregate sinking fund Sept. 30, 1884</td>
<td>$2,483,848</td>
</tr>
<tr>
<td>Increase of sinking fund during year</td>
<td>$1,295,979</td>
</tr>
<tr>
<td>Net debt Sept. 30, 1888</td>
<td>$8,563,846</td>
</tr>
<tr>
<td>Net debt Sept. 30, 1884</td>
<td>$4,504,829</td>
</tr>
<tr>
<td>Decrease of net debt during year</td>
<td>$3,759,017</td>
</tr>
</tbody>
</table>

The receipts and disbursements of the treas
ury on account of the several State funds for
the year were as follow:
NEW YORK (STATE).

RECEIPTS.

<table>
<thead>
<tr>
<th>Fund/Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General fund</td>
<td>$4,288,668</td>
</tr>
<tr>
<td>Common-school fund</td>
<td>815,464</td>
</tr>
<tr>
<td>Collected from spec'd fund</td>
<td>19,297</td>
</tr>
<tr>
<td>Elmont Female College educational fund</td>
<td>7,708</td>
</tr>
<tr>
<td>Literature fund</td>
<td>22,159</td>
</tr>
<tr>
<td>Military-record fund</td>
<td>2,950</td>
</tr>
<tr>
<td>United States deposit fund</td>
<td>842,047</td>
</tr>
<tr>
<td>Recreational fund</td>
<td>8,194,418</td>
</tr>
<tr>
<td>Canal fund</td>
<td>3,076,006</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$13,744,460</strong></td>
</tr>
</tbody>
</table>

DISBURSEMENTS.

<table>
<thead>
<tr>
<th>Fund/Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>General fund</td>
<td>$8,259,693</td>
</tr>
<tr>
<td>Common-school fund</td>
<td>533,719</td>
</tr>
<tr>
<td>Free-school fund</td>
<td>8,084,049</td>
</tr>
<tr>
<td>Literature fund</td>
<td>45,699</td>
</tr>
<tr>
<td>United States deposit fund</td>
<td>80,814</td>
</tr>
<tr>
<td>Collected from spec'd fund</td>
<td>20,078</td>
</tr>
<tr>
<td>Elmont Female College educational fund</td>
<td>1,250</td>
</tr>
<tr>
<td>Canal fund</td>
<td>2,903,942</td>
</tr>
<tr>
<td>Bounty-debt sinking fund</td>
<td>8,055</td>
</tr>
<tr>
<td><strong>Total payments</strong></td>
<td><strong>$14,928,209</strong></td>
</tr>
</tbody>
</table>

The rate of taxation for the year 1884-'85 was 2.575 mills, the total assessed value of property $3,014,591,372, from which the income will be $7,785,312.70, to be devoted as follows:

- **School purposes**
  - Common-school fund: $3,150,290
  - General purposes: $8,805,641

The receipts of the year from the tax on corporation amounted to $1,603,612.76. The trust funds of the State, on the 30th of September, were as follows:

<table>
<thead>
<tr>
<th>Fund/Type</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common-school fund</td>
<td>$8,528,061</td>
</tr>
<tr>
<td>Literature fund</td>
<td>211,959</td>
</tr>
<tr>
<td>United States deposit fund (for educational purposes)</td>
<td>4,014,209</td>
</tr>
<tr>
<td>College land-serp fund</td>
<td>478,497</td>
</tr>
<tr>
<td>Military-record fund</td>
<td>80,134</td>
</tr>
<tr>
<td>Bounty-debt sinking fund</td>
<td>5,042</td>
</tr>
<tr>
<td>Mariners' fund</td>
<td>10,000</td>
</tr>
</tbody>
</table>

The expenditures of the year for educational purposes from State funds and appropriations amounted to $3,529,855.56, of which $5,009,165.86 was the proceeds of the common-school tax of 1985 mills. The expenditures for charitable institutions were:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Support</th>
<th>Buildings, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaf and dumb</td>
<td>$199,687</td>
<td>11</td>
</tr>
<tr>
<td>Blind</td>
<td>6,162</td>
<td>12,217</td>
</tr>
<tr>
<td>Insane</td>
<td>61,318</td>
<td>28,937</td>
</tr>
<tr>
<td>Idiots</td>
<td>6,500</td>
<td>10,000</td>
</tr>
<tr>
<td>Juvenile delinquents and House of Refuge</td>
<td>189,833</td>
<td>11,854</td>
</tr>
<tr>
<td>State Reformatory</td>
<td>80,000</td>
<td>14,000</td>
</tr>
<tr>
<td>State Soldiers' and Sailors' Home</td>
<td>80,000</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$896,186 48</strong></td>
<td><strong>$117,998 50</strong></td>
</tr>
</tbody>
</table>

The number of patients in the Insane Asylums was 3,999, distributed as follows: Utica, 607; Willard, 1,893; Poughkeepsie, 591; Middletown, 282; Buffalo, 847; Binghamton, 580.

**State Prisons.**—The cost of maintaining the three State Prisons for the year ending Sept. 30 was: Auburn, $118,248; Clinton, $108,849, including $4,096.07 damages for breach of contract; Sing Sing, $177,866.59. Cost for construction and repairs: Auburn, $4,375; Clinton, $14,035.50; Sing Sing, $14,060, entire cost of prison administration, in $3,927.95 for salary and expenses of superintend, $7,500 for agent for discharge victs, and $12,904.24 for transportation victs, was $444,240.11. The receipts from convict labor were: Auburn, $115,408.00; Clinton, $46,899.74; Sing Sing, $258,129.56; total, $400,487.39. The population of convicts at the close of the fiscal year was:

- Auburn, 733; Clinton, 571; Sing Sing, 559; total, 2,846.

There were in the penitentiaries of the State 690 State convicts and in the State Reformatory at Elmsford.

The annual report of the Superintendent of Prisons shows that since 1877 the cost and maintenance of these institutions has been reduced from $225,783.44 to $390,561, a deficit of $317,411.06 changed to a surplus of $10,657.97. He credits this to the system of management and the adoption of the contract method of employing convicts during the same period, while the population of the State advanced from 4,704,895 in 1846 to 7,876. The number of recommitments was largely diminished. The abolition of the contract system on the expiration of the contract has compelled a resort to the employment of prisoners on State account only until other provision shall be made by the Legislature.

**Canals.**—The expenditures of the year for the canals were $3,985,980.16, including $500,310 for interest on the canals, $9,000 for redemption of debt, and $1,470,000 on account of the sinking fund and payments for maintenance and ordinary repairs were $706,567.88; for collecting statistics $472.87; for new work and damages, $65,738; miscellaneous, $38,083.38. The tonnage canals during the season of navigation from May 6 to Dec. 1, aggregated 5,009,406 tons, 654,860 tons more than on the record of the previous year. Canal freight included 1,678,434 tons of forest products, 1,264,287 of agricultural products, 335,006 of manufactured goods, and other articles. The average charge per mile was 27 cents, against 38 cents in 1883.

**Railroads.**—The principal event of the year was the opening of the New York Shore & Buffalo line, and the placing of 14,000 cars on the line in the hands of a receiver on a claim of default in payment of interest on its bonds. The first appointment of receivers, however, was made in Orange county, was vacated, and the receivership was transferred to New York city, and the receivers appointed there under the New York law, and the proceedings taken in the Orange county court, in which it was further decided that the principal business of the corporation is to be taken care of in the county in which its principal business is transacted. The general railroad statistics of the year are condensed and are as follows:
NEW YORK (STATE).

ser of tons of freight carried one

9,092,545,571

rate of '89 per cent.

$0.00

prices per ton per mile .

$0.00

prices per mile per mile

$0.00

price of passengers carried one

1,729,654,690

rate of '89 per cent.

1,729,654,690

$128,304,164

rate of 5-16 per cent.

2.09

rate of passenger per mile

1.66

rate of passenger per mile

0.20

interest

17,042,289

rate of net earnings to cost of road

2.38

rate of road built in New York State .

7,937,129

rate of stock and debt Sept. 80 .

$1,966,299,134

rate of road equipment, as claimed in

1,160,703,484

railroad Commission, in discussing the

of legislation affecting railroad charges, said the following general conditions:

should be entire publicity of railroad rates,

be same be either special or general.

should not, as a general rule, charge more

one terminal and an intermediate point, for a

quantity of freight, than is charged be-

in the same manner, and a similar point, even

more distant point there be railroad or

petition, unless railroads can affirmatively

sufficiently in such a manner, that such

satisfy the higher charge for the shorter dis-

of contract or any kind of discrimination

open to citizens to refrain

the canals of the State in preference

is against the sound public policy, and

be permitted.

no form of rate-fixing legislation

at present recommended. Such legis-

advisable in this State until it is estab-

proper modifications in rates and cor-

wrong can not be obtained under

with the amendments as are hereafter

The total amount expended for com-

$8,663,119 in cities, and

$1,113,824,911.

lic expenditure for educational pur-

in the following statement:

common-school teachers

$7,953,729

teachers

39,097

assistant teachers

179,649

auxiliary

48,433

stores, furniture, repairs, etc

2,168,316

incidental to the support of com-

1,492,729

academies

40,999

in academies

10,149

admissions

18,688

admissions

40,418

college

1,005

staff

8,619

office of Public Instruction

9,259

College of the University

111,611

total for 1883

$12,217,821

$4,975

the whole number of pupils in the

1,009,087. In nor-

orals, colleges, academies, and private

there were 179,188. The number of

from the eight normal schools was

800. In reply to an inquiry from a Board of

the right of teach-

enforce the attendance of all pupils at

religious exercises at the opening of school-

sessions, the State Superintendent, in May, de-

clared that it was impracticable to have reli-

igious instruction in which all "classes and

sects could harmonize," and the only alter-

native "to preserve the benefits of constitu-

tional guarantees, in letter and spirit, and to

secure to all absolute equality of right in mat-

ters of religious predilection, must be, however

reluctantly the conclusion is arrived at, to ex-

clude religious instruction and exercises from

the public schools during school-hours." This

he declared to be the policy sanctioned by law

and practice in the State.

Banks.—There were, on Oct. 1, 89 banks of

discount and deposit, organized under State

laws, of which the total resources were $1,117-

446,275. There had been an increase during the

year preceding of $889,000 in capital, $177,-

480 in surplus, and $469,004 in undivided

profits, but deposits had fallen off $4,304,629, and

loans and discounts $3,977,662. The aggregate

resources of trust, loan, mortgage, and guaran-

tee companies, on the 1st of July, were $151,-

629,464, a decrease of $8,508,800 for the year.

Insurance.—The latest annual report of the

Insurance Department covers the calendar year

1883. It shows that the assets of the several

New York life-insurance companies were

$351,973,410; income, $54,362,752; expendi-

tures, $42,412,180; number of policies in force,

341,379; full amount of risks, $977,070,669.

Seventeen other companies doing business in

the State had $219,882,510 of assets, $37,610-

011 income, $29,381,468 expenditures, 864,362

policies in force, and $784,609,840 of risks.

There were 135 co-operative societies, with

$674,486,28 cash, and $1,789,544.55 other assets,

and $1,149,606.95 of liabilities.

Immigration.—The number of immigrants ar-

riving at the port of New York during the

calendar year was 885,929, of whom 895,950

were aliens. Of the latter, 141,923 came from

Germany, 39,966 from Ireland, 82,086 from

England, 16,729 from Sweden, 9,948 from Nor-

way, 14,976 from Italy, 12,462 from Russia,

1,237 from Switzerland, 7,100 from Denmark,

7,098 from Bohemia, 8,092 from the Nether-

lands, 6,872 from Scotland, 8,731 from Austria,

1,778 from Wales, 8,898 from France, 15,797

from Hungary, 248 from Luxemburg, 1,971

from Belgium, 962 from Spain, 72 from Tur-

key, and 8,104 from other countries. The av-

eved destination of 111,472 of these was the

State of New York. The total receipts of the

Emigration Commission from the U. S.

Treasury, rentals, boarding-house permits, and

other sources, were $187,906.26; expenditures,

$181,418.48. The Information Bureau at Cast-

tle Garden directed 23,018 immigrants to their

friends, and forwarded 486 children to their

destination. The licensed boarding-house

keepers lodged 41,483 immigrants. The num-

number of persons cared for at Ward's Island was 3,886, of whom 3,284 were received during the year; 1,144 immigrants unable to take care of themselves were sent back to the countries from which they came, including 83 insane, 4 blind, 5 deaf and dumb, 21 crippled, 73 aged, 876 sick and destitute, and 103 others.

Miscellaneous Statistics.—Payments on account of construction and furnishing of the new Capitol during the fiscal year amounted to $1,805,825.30, making the total cost to Sept. 30, 1887, $448,996.96. The commission appointed to select lands for a State Park at Niagara Falls completed that duty during the year, and obtained an appraisal of the property taken. The value set upon it by the Board of Appraisal was $1,400,000. The Legislature of 1885 was asked to appropriate the money to pay for the lands and complete the project of establishing the park, to be free to public enjoyment. The operations of the State Survey for the year were confined chiefly to mathematical computations upon the results of fieldwork previously obtained, the cost for the fiscal year being $13,451.15, making the entire expenditure since 1877, $115,422.37. The work has been chiefly confined to triangulation, and for the completion of that $22,000 a year for five years is asked for by the commissioners. They also recommend the beginning of a close topographical survey and the construction of county maps, estimating the expense at about $40,000 a year for a period of thirteen years.

The New Year.—On the 6th of January, 1885, after the meeting of the Legislature, Governor Cleveland submitted to that body his resignation of the office of Governor, which thereupon devolved upon the Lieutenant-Governor, David B. Hill. Even before the meeting of the Legislature, an active canvass began for the election of a United States Senator to succeed Elbridge G. Lapham, whose term was to expire March 4, 1885, or rather for the Republican nomination for the office. The result was the formal presentation of the name of William M. Evarts by the Republican caucus, and his election to the Senate.

NEW YORK (CITY). The Finances.—The assessed value of real estate in the city for 1884 was $1,119,761,697, against $1,079,180,669 in 1888, an increase of $40,580,928. The valuation of personal property, as returned by the assessors, was $218,588,748, an increase over the previous year of $21,604,313, making the total assessment $1,338,398,435, against $1,276,677,164 in 1888. The rate of taxation was 2½ per cent. The total appropriations allowed by the Board of Estimate and Apportionment for the expenses of the year 1885 were $33,984,905, the estimates submitted to it from the various departments having been $34,888,217, and the appropriations for 1884, $34,046,165. The practice of the Board of Estimate and Apportionment, of transferring unexpended balances in one department or bureau of the city government to another, was declared illegal by the Supreme Court in September, in a suit brought to restrain the board from making such transfers. The controversy over the unpaid wages of the elevated railroad companies was settled by Judge Pratt, in October, in a suit brought for a review of the assessments. It was held that, in assessing the structures as real estate, their cost must be ascertained and an allowance made for deterioration, must then be assessed at no higher rate than with actual value, than other real estate. To ascertain the amount of personal property was held that the actual value must be fixed and the assessment on or deducted therefrom. It was decided, however, that the stock of the Manhattan Railroad, which represented no actual invested capital, could not be assessed, though it had a marked market value. The amount of unpaid interest on $1,868,767.48, then the basis of the assessment. It was reduced by Judd, for a settlement, to $919,098.19, and on that basis the assessment was made, the taxes for 1885 included, and raising the amount to $538,51. The gross debt of the city of January, 1885, was $126,671,181. The amount in the sinking fund was $735,48, making the net debt $92,482. The question arose, after the adoption of the constitution, as to the constitutional amendment restricting the amount of debt to be incurred by the city to $100,000 inhabitants and more to 10 per cent of the assessed value of real estate. It was then agreed that the sinking fund could be deducted in putting the amount of outstanding indebtedness to the Corporation Counsel that it could not be deducted, inasmuch as the Sinking Fund Commissioners were trustees for creditors holding securities for specified classes of bonds not yet due, and that no new bond could be issued until the gross debt was brought within the constitutional limit.

Charges against the sheriff for taking the investigation into the affairs of the city and county of New York by a committee of the Assembly, under the claim that the sheriff's office was indicted for receiving illegal fees, and another for obtaining a signature by false pretenses. The sheriff was brought to trial on the 17th of April, but was acquitted for insufficiency of evidence, and the other cases were abandoned. Application had previously been made to the Governor of the State for the removal of the sheriff on specific
The case had not ceased of at the end of the year. The department was made by the grand jury against the Department of Public Works, and was made payable in its administration, of legal requirements in the acts, but no indictments were entered for the rendition of abuses. In June, the special Court of Oyer and Terminer, formed for the purpose of investigation of the affairs of which made the above-mentioned, submitted a more document, criticizing the looseness in the Department of Taxes; and in the Comptroller's office, measures of reform, local political contests was in arrear from general politica:al Convention, the Tammany was avowing its support of the, refused to unite with other any political demonstration, a separate ticket for city and its candidate for mayor be-rant. A citizens' committee of Mayor William R. Grace as a candidate, and secured his acceptance of Democracy and Irving the Democratic party, and a was arranged for the support of both to Tammany Hall and republican organization, which inations of its own, Mr. Fred-eing the candidate for mayor, were given to the chief executive by the legislation of the year 1875, the law and the contest, and the eagerness to elect the mayor led to a com-mend. The total vote for mayor, 14,500 votes, 401 blank ballots, 300, Gibb, 44,866; and Crittenden 501. The other candidates, on the County Democracy ticket, a less emphatic vote. These v., Comptroller; A. L. Sanger, Board of Aldermen; Randolph District Attorney. Three Judges of Common Pleas were elected, if candidates were nominated, of the Prohibitionists, who re-ceived Tammany candidates, and Democracy candidate. Daly's, Larremore's, 77,379; and Albe third Tammany candidate, and the Republican candidate. The total vote receiving 78,808. The presidential Electors were: Cleve-Haine, 90,095; Butler, 9,499; St. John, 1,081. There were 882 defective and 1,477 blank ballots. For Judges of the Court of Appeals the vote was: Andrews, Republican, 318,724; Rapallo, Democrat, 218,908; these having been nominated by both parties; Rice and Cowen, People's party, 1,465 and 1,561 respectively; and Farrington and Willard, Prohibition, 598 and 599. The vote on the constitutional amendment, restricting the power of cities to incur indebtedness, was 109,761 for, and 1,778 against it. The number of voters registered was 240,948, against 182,351 in 1888, and 217,029 in 1880.

Considerable excitement was caused after the election by the course of Mayor Franklin Edson in making appointments to offices before the expiration of his term. There had previously been a dispute as to the time of the expiration of the terms of two members of the Board of Police Commissioners. The law of 1875 had fixed the time for the expiration of the terms of the commissioners then in office, and had provided that thereafter the term should be six years. The "consolidated act" of 1883 had declared that a person unappointed after the beginning of a term should only hold for the rest of that term, and until a successor was appointed and qualified. Mr. Joel B. Erbhardt had been appointed for the remnant of a term expiring May 1, 1877, but had, in fact, held over until May 20, 1879, when Stephen B. French was appointed. Mr. DeWitt C. Wheel-er had in like manner been appointed for the remnant of a term expiring May 1, 1878, but had held over until May 23, 1890, when Joel W. Mason was appointed. It was contended, on the one hand, that Messrs. French and Mason were entitled to full terms, beginning with the date of their appointment, and on the other that they could hold only for unexpired terms beginning with May 1, 1877 and 1878, respectively. The former view had been held by the Counsel to the Corporation, and acted upon by the mayor, until, on the 24th of November, the latter announced his decision that the terms had expired in May, 1888, and May, 1884, and that the commissioners were holding over, and submitted new appointments to the Board of Aldermen, which were promptly confirmed. Mr. French was reappointed, but, in place of Mr. Mason, Mr. John McClave was named. Mr. Mason disputed the right of Mr. McClave to the office to which he had been appointed, and applied to the Attorney-General of the State for leave to bring a suit for a writ of quo warranto to test the question. This was denied by Attorney-General Dennis O'Brien, who, after a full discussion of the provisions of the law, which he declared to be "indefinite, uncertain, and almost chaotic," concluded:

It is my opinion, therefore, that the Legislature meant what it said when it declared that the term of office should be six years; that when a commissioner holds over, after the expiration of his term, he "en-
croached upon and for a no longer period. Believing, as I do, that this is a fair and reasonable construction of the statute, and that such would be the interpretation which, in the end, the courts would likely put upon it, I can not very well affirm that Mr. Mc
Clave has usurped, intruded into, or unlawfully holds the office of Police Commissioner; nor can it be said under these circumstances, with any great degree of confidence, that a litigation in behalf of the State to oust him from the office would be successful. Those general conclusions are reached without any reference to the consolidation act of 1882. Certainly, there is nothing in that act to assist the contention of Mr. Mas
son. But, on the other hand, if that statute applies at all to the present case, inference might very well be drawn from it which operates against his theory of consolidation. It is difficult, I think, to escape the conclusion that the litigation proposed by this application must be unsuccessful in the end, and consequently it would be unwise and detrimental to the best interests of the Police Department of the city of New York. The application is therefore denied.

This decision was announced on the 19th of December, but in January, 1885, it was reversed on a second application, accompanied by an assurance from the new mayor that there were several offices affected by the question in dispute upon which he should feel obliged to act, and that it was important to have the question judicially settled.

The terms of office of the Commissioner of Public Works and of the Corporation Counsel expired on the 10th of December, and the mayor was required by law to submit the appointment of their successors to the Board of Aldermen within ten days thereafter. As the mayor's term expired with the year, as did also the power of the Board of Aldermen to confirm appointments, there was a strong desire in some quarters to defeat the appointments, which was aided by the political division of the aldermen almost equally between the two factions of the Democracy and the Republicans. The appointments first made by the mayor in fact failed of confirmation. On the 29th of December, Judge George P. Andrews, of the Supreme Court, granted a temporary injunction in an old suit of what was known as the "Wolf Board of Aldermen," in which the validity of the election of the existing board was contested, restraining the board for the time being from taking any action whatever. The order to show cause why the injunction should not be made permanent was made returnable before Judge Lawrence, of the same court, who, on the 30th of December, dismissed the writ and dissolved the injunction. An application was then made to Judge Miles Beach, of the Court of Common Pleas, sitting at the time by assignment on the bench of the Superior Court, for an injunction, in an action begun by several citizens, to restrain the mayor and aldermen "from appointing, nominating, or confirming the nomination of any person to the office of Commissioner of Public Works, or of Corporation Counsel," on the ground that the defendants were in the perpetration of an illegal act by filling the offices named in pursuance and as a part of a corrupt scheme, whereby such offices are to be filled in consideration of payments and promises of payments of money or of appointment. A temporary injunction was granted by Judge Beach on the 80th of December. An application was immediately made to Judge H. Trux, of the Superior Court, to set aside the injunction, and he heard argument but rendered no decision until the 1st of January, 1885, when he decided that Judge Beach had jurisdiction to act in the case, and granted the injunction on insufficient proof in the mean time Mayor Edison had, on December, notwithstanding the nomination to the Board of Aldermen of a Squire for Commissioner of Public Works, William Dorshheimer for Corporation Counsel. The former was confirmed, and the latter rejected. The mayor then declared the term of office expired at midnight of January 1, rather than on the first Monday in January, as it was provided by the statute, to avoid a vacancy in the offices, and with the power to make appointments under the new law, took it into effect January 1. Between midnight of January 1, he named E. T. Wood to the Corporation in place of E. H. Lacombe, who was holding over and refused to give up his office. Mr. Wood subsequently applied to the Attorney-General for leave to bring a writ of quo warranto to test the title of Mr. Lacombe to the office. This was granted, but when the case came before the general term of the Supreme Court it was dismissed, the Court unanimous deciding that Mayor Edison's term did not expire at midnight December 31; that if it had expired it could have been over until his successor be qualified; that there was no vacancy for the President of the Board of Aldermen to fill, but if there had been he would have had no power to make appointments without confirmation by the Board of Aldermen; that the Board of Aldermen, in the proceedings taken against Mr. Edison for contempt of court in disregarding the injunction of Judge Beach, and a decision was rendered by Judge Freedman in January, 1888, at which Mr. Edison was sentenced to four years of imprisonment in the county jail for five days and a fine of $250. A stay of proceedings was obtained, and an appeal was brought.

The New Aqueduct.—The plans for the new Croton Aqueduct were adopted by the Commissioners early in the year, and proceedings were begun for acquiring the necessary lands and rights. Bids were invited for contracts for the construction of that portion of the aqueduct above the Harlem river in ten sections. The awards were made in December, the entire work being taken by two contractors, O'Brien & Clark, of New York, and Brown, Board
ago, at an aggregate price of
be excavation is required to be
neter, and the finished con-
ast, and for the greater part of
ust be a rock-tunnel, in some
nderground. The entire length
tracts is 148,692 feet. Work
in ten days after the approval
ors' bonds, and be completed
ree months. The bonds re-
ount equal to 10 per cent. of
section as estimated by the
mission, and amounted in the
,426,500. The contracts were
the end of the year, but no
made for the portion of the
the Harlem river. The cost
ork, exclusive of the proposed
am, was estimated by the Com-
ible Works at $10,684,506.

—Before the passage of the
Railroad Bill (see New York
ission appointed under the law
as the Rapid Transit Act,
favor of a number of lines,
surface and partly elevated,
to the cable system. They in-
nine different routes, mostly
seventy miles of track. The
he roads was given to the
e Railway Company, but be-
lings were completed the Sur-
 became a law, one section of
construction of the surface
ity of the Rapid Transit Act.
validity of the action of the
and the company into dispute,
was not settled at the end of
commissioners had been ap-
 the Courts to decide
posed rapid-transit lines on
should be constructed. An-
 arose under the Surface
sequence of the efforts of
ce the companies to secure a
way, below Union Square,
been kept free from rail-
 the property - owners refused
and a commission was ap-
on the question of the expe-
itting the construction of a
 thoroughfare. In the mean-
 was made to the Board of
nent. After an injunction
 prevent this, and had been
 ground that discretion was
 the "local authorities," con-
 idersmen subject to the veto
 ayor, the consent of the board
one of the applying companies.
royed by the mayor, and again
nding his objections; but as
 took place at a meeting of
 not given to all the members,
 by the courts. Later, in
application, accompanied by
 terms and conditions more favorable to
the city, was made by the company and accepted
by the aldermen, who again gave their formal
consent. Again they encountered the mayor's
veto, and the matter was still in doubt and
dispute at the end of the year. Mr. Grace, the
new mayor, in referring to the matter in his
first message, said:

No franchise for any such purpose should be awarded
except upon such conditions as will secure to the city
the largest possible revenue. The proper means to
attain this end I conceive to be the undeviating ad-
herence to the plan of putting all such franchises up
at public bidding at a sufficient upset price, and the
insistence, as a condition of awarding the franchises, that
there shall be prompt annual payments into the city
treasury of a fair percentage upon the gross receipts
of the person or corporation enjoying the same.

I shall give my approval to no grant of any such fran-
chise which is not awarded under some such condi-
tions.

NEW ZEALAND. (See page 60.)
N I C A R A G U A , a republic in Central America.
Area, 51,600 square miles; population in 1888,
275,815. The President is Dr. Adan Cárdenas,
elected in 1888. His Cabinet is as follows:
Finance, War, and Navy, Col. J. Edilondo;
Justice and Public Worship, Dr. F. Delgadillo;
Foreign Affairs, Señor F. Castillo; Interior,
Señor J. Chamorro.

The northern coast of Nicaragua is the site of
the Mosquito Kingdom, over which, although
it is an integral portion of the republic, the
Government exercises but a nominal control.
By treaty with the British Cabinet, Nicaragua
acknowledged the Mosquito King as sovereign
of this strip of land, and agreed to pay him a
subsidy of $7,000 per annum. When the King
died, English missionaries elected an illegiti-
mate son of the King to succeed him. Since
that epoch the Nicaraguan Government has
ceded to pay the stipulated subsidy, although
it has till recently figured in each appropra-
tion. Nicaragua took formal possession of the
Mosquito coast on Dec. 31, 1883.

NATIONAL INDEBTEDNESS.—In 1877 the Govern-
ment of Nicaragua passed a law amalgamating
its different liabilities, chiefly created during
and subsequent to the filibuster war of 1855—
'57, and represented by bonds of different de-
scriptions, into a consolidated bonded debt, and
provision was made for their payment by re-
ceiving the bonds at the custom-houses in part
payment of import duties—50 per cent. to be
paid in cash, and 50 per cent. in bonds. In
1877 this consolidated debt amounted to $1,-
469,147; and on June 18, 1884, there had been
canceled $1,818,151, still leaving in circula-
tion, $150,996; adding thereto seven years' in-
terest at 5 per cent. per annum, $69,451, there
remained unredeemed, $300,447. But on Nov.
8, 1884, there had been canceled $111,947, re-
ducing the indebtedness to $88,500.

FINANCES.—The income in 1883 was $1,989,-
659, and the outlay $1,712,994. There were
on hand in the national treasury on Jan. 1,
1884, in cash, $256,575, being $74,215 in excess of
the available balance the preceding January.
All sources of revenue had increased in 1883, except the amount collected from import duties and the tobacco-tax. The former fell off because the low prices of coffee, etc., caused decreased importation, and the latter on account of a short tobacco-crop. On the other hand, the liquor-tax yielded $145,255 in 1888, against $171,068 in 1889—an increase under this head of $74,318. The tobacco-tax usually nets the Government $300,000 per annum, yet the Minister of Finance recommends that it be abolished, for, in his belief, the suppression of the monopoly would give a great impulse to tobacco-culture, and thus greatly redound to the prosperity of agriculture in the country.

Public Works.—While devoting, in 1881, $347,729 to canceling its debt, the republic spent in the same year $397,910 on public works—such as roads, railways, etc. In 1882 the respective amounts disbursed for these two items were $329,310 and $286,008, and in 1883 $367,895 and 412,786.

Railroads.—The future railroad system of Nicaragua, to be called the National Railroad, will extend from Corinto Harbor to Pueblo Nuevo (La Paz), thence a branch line to Momotombo, then to Managua, the capital, and Granada, making a total distance of 135 miles, and forming a right angle through the most fertile part of the country. That section is finished which connects Corinto, on the Pacific, with Momotombo on Lake Managua—a beautiful sheet of water of about 560 square miles. On reaching Momotombo, passengers and goods are forwarded to Managua by steamers, which make connections every day both ways. The railroad line is 58 miles long, and was completed Jan. 1, 1884. The first section of it, to Leon, has been in operation for two years. The road is well equipped and well maintained; best Bessemer rails, forty pounds per yard in weight, three feet six inches gauge, on mahogany, lignum-vitae, ceojoche, guachipilin, laurel negro, rock, or cypress sleepers. Sand ballast has been used throughout.

The traffic consists of freight mostly, which is dye-woods, coffee, India-rubber, and hides. As much as 400 tons of dye-woods are daily transported to Corinto for shipment. The net proceeds of the road in 1883 were 44 per cent. of the invested capital; cost of building and equipment, operating and maintenance expenses, 56 per cent. of gross earnings.

The line that will connect Managua with Granada is under construction and the grading is completed. Its length is thirty-two miles, ten miles of which are laid.

Commerce.—The import into Nicaragua varies little from $5,500,000 annually, nor the export from $4,000,000.

<table>
<thead>
<tr>
<th>Wood Shipsments From Corinto, 1883</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,084 tons of fustic, at $10 a ton</td>
</tr>
<tr>
<td>409 tons of Brasil-wood, at $24 a ton</td>
</tr>
<tr>
<td>740,000 feet of cedar, at 40¢ per ft.</td>
</tr>
<tr>
<td>1,000,000 feet of mahogany, at 40¢ per ft.</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Other products exported are India-rubber, about 14,000 quintals annually (one quintal = 1014 pounds American); coffee, 7,000,000 lb.; indigo, skins, and gold and silver bullion.

The tonnage entering the ports of the public amounted to 260,000 tons; out of 195 arrivals, 156 were steamers.

The Interoceanic Canal.—The "Official Gazette" of Nicaragua, speaking of the Government decree abolishing the contract with the Provisional Company of New York, known as the "Menocal contract," for the construction of the Nicaraguan Canal, says that the company bound itself within two years from the date of the acceptance of the contract (April 24, 1888) to conclude definite plans for the work, and form the company destined to accomplish it, and that non-compliance with this obligation implied the rescission of the contract. As the plans had not been drawn up, nor the construction company formed by May 28, 1889, the contract should have been null and void on that date; but the company applied for an extension of time, and by the law of Feb. 14, 1889, a further term of two years was granted. The extension of two years elapsed on September 30 last; consequently the concession to the New York company has become null and void, and the republic has acquired the right to negotiate with other companies. This the Government has already officially declared.

On Dec. 1, 1884, the President of the United States informed Congress, in his message, of the conclusion of a treaty with the Nicaragua Government.

**North Carolina.**

*State Government.*—The following were the State officers during the year: Governor, Thomas J. Jarvis, Democrat; Secretary of State, William L. Sander; Treasurer, John M. Worth; Auditor, William P. Roberts; Attorney-General, Thomas S. Kenan; Superintendent of Public Instruction, John C. Scarbrough; Jailer, William H. Smith; Associate Justices, Thomas S. Ada and Augustus S. Merrimon.

**Finances.**—The entire expenditures for the fiscal year ending Nov. 30, 1884, were $364,641.76; but this amount embraces several items that are not chargeable to the expenses of the State government proper, because the funds from which they are defrayed are not used by general taxation. These items amount to $314,894.11. Deducting these, we have for the usual and ordinary expenses of the State government proper, $570,947.67.

On the financial situation for the coming years, the Governor, in his message to the Legislature of 1885, says:

The Treasurer and the Auditor substantially agree in their estimates of the expenses of the State govern-
the fiscal years ending Nov. 20, 1885, and 1886. Their estimate is about $500,000 a
$1,180,000 for the two years. The Tobacco on hand, on Nov. 20, 1884, $926,086.96.
The condition of our docket, with aged
The number of children in the State between
ages of six and twenty-one is:

<table>
<thead>
<tr>
<th>Race</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>485,081</td>
</tr>
<tr>
<td>Female</td>
<td>351,513</td>
</tr>
<tr>
<td>Total</td>
<td>836,604</td>
</tr>
</tbody>
</table>

The number of children attending public schools at any time from Nov. 20, 1885, to Dec. 1, 1884, was:

<table>
<thead>
<tr>
<th>Race</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>148,259</td>
</tr>
<tr>
<td>Female</td>
<td>154,015</td>
</tr>
<tr>
<td>Total</td>
<td>302,274</td>
</tr>
</tbody>
</table>

The number of teachers that were attending normal schools was:

<table>
<thead>
<tr>
<th>Race</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>828</td>
</tr>
<tr>
<td>Female</td>
<td>880</td>
</tr>
<tr>
<td>Total</td>
<td>1,708</td>
</tr>
</tbody>
</table>

The average salary of teachers, 1884.

<table>
<thead>
<tr>
<th>Race</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>$34.15</td>
</tr>
<tr>
<td>Female</td>
<td>$33.75</td>
</tr>
<tr>
<td>Total</td>
<td>$34.00</td>
</tr>
</tbody>
</table>

There are colored normal schools at Salisbury, Frankfort, Newbern, Plymouth, and Fayetteville, and white normal schools at Franklin, Newton, Wilson, Elizabeth City, and in connection with the State University.

The colored people—The Governor says: "In 1879 the colored people of this State organized a State Industrial Association for the encouragement of thrift and industry among the colored people, especially in agricultural and mechanical pursuits. This Association has held a State fair each fall since its organization. These fairs have been very creditable to the Association, have been a means of improvement among the colored people, and are therefore beneficial to the State. I cheerfully bear testimony to the fact that the colored people of this State, with rare exceptions, have been orderly, law-abiding citizens during my term of office. I have been received by them with the greatest deference and respect, and have had the cordial support of the better element of them in the administration of the law."
Assessment and Taxation.—In the Auditor's report, the table showing the aggregate gross amount of State and county taxes from the various subjects of taxation is one of the most interesting. Some of its items are as follow:

From land, $349,571.26; town lots, $67,325.95; horses, $19,241.54; mules, $13,938.69; cattle, $11,523.24; farming utensils, etc., $298,327.48; money on hand or on deposit, $11,340.97; solvent credits, $41,173.80; other personal property, $39,780.50; dealers in liquors, $24,327.80; merchants and other dealers, $44,290.50; deeds in trust and mortgage deeds, $10,675.20. The gross amount of State taxes is $568,908.51.

The taxes levied for school purposes are as follow: On liquor licenses, $39,882.47; on 194,732 white polls, $153,327.52; on 62,142 colored polls, $68,780.25. On the taxable property in the State (including bank stock), $386,535.33. Total school-tax, $548,586.87. The county taxes aggregate $484,441.89.

The number of acres of land is shown to be 28,285,040, valued at $101,406,687; value of town lots, $10,590,030; value of real estate property, $124,135,377; number of horses 161,725, value $10,559,075; number of mules 91,350, value $5,127,725; number of cattle 825,535, value $5,209,229; number of hogs 1,829,930, value $2,139,360; number of sheep 626,840, value $397,879; value of farming utensils, etc., $19,372,880; money on hand or on deposit, $5,199,728; solvent credits, $16,927,371; stock in incorporated companies, $2,085,844; other personal property, $14,006,827; railroad franchises, $1,973,347; aggregate value of personal property, $77,087,346; aggregate value of all property, $301,293,738.

Political.—The Republican State Convention met on May 1, chose delegates to the National Convention of the party, and nominated candidates for Presidential Electors and State officers. The platform complimented President Arthur; favored the Blair educational bill; declared that a well-regulated tariff system, discriminating in favor of American industries, should be maintained, and all internal taxes abolished; and favored the repeal of the system of county government existing.

Congressman Tyrre York, Liberal, was nominated for Governor. The other nominations, divided between Liberals and Republicans, were: Lieutenant-Governor, William T. Farcloth; Secretary, William G. Candler; Treasurer, George W. Stanton; Auditor, Francis W. Lawson; Attorney-General, Charles A. Cook; Superintendent of Public Instruction, F. D. Winston; Supreme Court Judge, D. L. Russell.

The Democratic State Convention met in Raleigh on June 25, and took similar action. The platform calls for the abolition of the whole internal revenue system, and the reduction of the surplus in the national treasury; declares that the duties on foreign importations should be levied for the production of public revenue, and the discriminatory adjustment should be such as would prevent highest rates on luxuries and the necessary requisites of life, and continue.

And whereas, There is now more than $10,000,000 in the treasury of the United States, provided always, that it shall be disbursed by State agents, as directed by objectionable features in the Constitution.

Resolved, That in the absence of the Constitutional provisions, the right of the legislature to pass laws under the Constitution.

Resolved, That in the absence of the Constitutional provisions, the right of the legislature to pass laws under the Constitution.

The following is the ticket: 1 Alfred Moore Scales; 7 Lieutenant Charles Manly Stedman; Secretary William L. Saunders; Auditor, Roberts; Treasurer, Donald W. intendent of Public Instruction; Attorney-General, T. F. Davids; Justice Supreme Court, A. S. Me.

At the election, on November 29th, the vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful. The error is reported as follows: Dem. 249; Republican, 128,810. The vote for the ticket was successful.
OBELISK.

Bruges Bay tells us, in his story of Egypt, page 88, that obelisks from the fourth and fifth dynasties (8700 B.C.) to Domitian, A.D. 182. Pliny says: "Anchises entered into a kind of rivalry for the Egyptian obelisks, which were esteemed as obelisks, and consecrated in Divine of the Sun." How the Americanropolis acquired the venerable Egyptian monument that graces Central Park, forms an interesting chapter. At the opening of the Suez Canal in 1869, Khedive Ismail ceded to Mr. W.H. Hurlburt, editor of the New York "World," that America might have of the Egyptian obelisks, Mr. Hurlburt dened it to Mr. Louis Sterne, who told him perhaps his friend John Dixon could obtain for America the monolith standing at andria. Mr. Dixon said he would try, that he would transfer the obelisk to New York for £15,000. Mr. Hurlburt approached W. H. Vanderbilt, who promised the sum of £15,000 without hesitation. Mr. Hurlburt graphed Mr. Vanderbilt's promise to Mr. Dixon, who replied that he expected the United States Government to obtain the grant from the sive. On Oct. 19, 1877, Mr. Evarts, Secretary of State, wrote to Consul-General Farm for a grant to the Egyptian government, and Mr. Furnan obtained the obelisk for New York city, May 18, 1879. The result was transmitted to Mr. Hurlburt, who informed Mr. Dixon thereo, asking him whether he was ready to transfer the obelisk to New York city. Dixon raised his price to £20,000. Mr. Hurlburt then advertised for bids. Among those submitted appeared that of Commander George H. Gorringe, United States Navy, which was accepted Aug. 6, 1879, the agreement including the removal, transfer, and erection of the obelisk. A contract was entered into with Mr. Vanderbilt, and Commander Gorringe had the monolith shipped from Alexandria in New York city for a sum of $75,000, to be paid by Mr. Vanderbilt. Commander Gorringe had the obelisk erected on a pedestal, 20 feet high, with a base and a column, and the obelisk was set in a horizontal position, amid a crowd of astonished spectators, Dec. 6, 1879.

The work was considerably delayed, because in the foundation and steps to the pedestal were found stones and implements of ancient gods and goddesses, signs and symbols, and it was decided to take them up carefully, carry them to New York, and erect them on the syenite monolith and pedestal exactly as they stood at Alexandria. This plan has been faithfully carried out in New York, every stone being in the same position that it occupied at Alexandria.

In a sort of quadrilateral chamber, within and under the steps of the obelisk, Commander Gorringe found six differently shaped stones of syenite, of black marble, and of white limestone. Some of these stones were rough, some half worked, some partly finished and polished, and some ornamented. On one of them was imbedded a trowel. Commander Gorringe, being a mason, showed them to Ill. Bro. S. A. Zola, 33, S. G. Com., who, in a detailed report, with diagrams and drawings, considered them as indicating "the three symbolic degrees: the apprentice being represented by the rough parts, the fellow-crafts by the worked portions, and the masters by the finished and ornamented..."
as she belonged to the Egyptian Government, delicate negotiations had to be entered upon to obtain her at a moderate price; hence he offered £5,000, which was declined, but he was soon notified that he might have her for £6,100, which was paid, and the transfer of the ship made, Dec. 8, 1879.

The Dessouk was refitted by Lieut. Schroeder, and the ship, pedastal, and steps were transferred to the wharf and embankment, all of which was accomplished June 12, 1880, when the steamer, with her famous cargo of 1,400 tons, sailed from Alexandria, and arrived at the quarantine station, Staten Island, July 20. From July 20 to 50 the vessel was open to visitors, and one of those days there were 17,011. The Park Commissioners and Mr. Vanderbilt decided that Graywacke Knoll, now the Metropolitan Museum in Central Park, was the most suitable spot for the obelisk. From August 1 to 3 the foundation-stones and steps of the monolith and Italian pedestal (forty-three tons) were disembarked at the foot of Fifty-first Street and North River, whence they were transported to Graywacke Knoll. Suitable memorials were collected and he sceptically incased, and the Masonic fraternity was invited to lay the corner-stone.

It took some time to adjust the iron tracks and cannon-balls at which the monolith was disembarked at Staten Island from the hold of the Dessouk, Sept. 14, 1881. Next the rise and fall of tide was utilized to float it up the North River and land it at the foot of Ninety-sixth Street, whence it was moved, by steam-power, on trucks with rollers, along Tenth Avenue and across Eighty-sixth Street to Central Park. Oct. 9, 1881, about 9,000 Freemasons paraded up Fifth Avenue, with bands of music, and Grand Master Jonce B. Anson, laid the stone.

By Jan. 22, 1881, the pedestal was ready for erection on its identical Egyptian foundation: steps and brass screws, constructed exactly as they were at Alexandria. Even the coldest weather did not prevent an assembly of at least 20,000 spectators. Commander Gorringe gave the signal for turning and lowering, and within five minutes it exchanged its horizontal for a vertical position. The exercises usual on such occasions—prayer, singing, parts of the stone, and in which the presence of the trowel is emblematic of the master.”

The position and arrangement of these stones, pointing east, south, and west, are Masonic.

While busily moving the monolith, pedestal, and steps to the wharf, Commander Gorringe heard of the steamer Dessouk, exactly suit-
The following is a list of all the known monolith obelisks in the world, that have a history, or are otherwise interesting to the general reader. The Washington Monument is an immense obelisk, but it is not a monolith:

<table>
<thead>
<tr>
<th>Name</th>
<th>Place and Country</th>
<th>Height, Including Pedestal, in feet</th>
<th>Weight of shaft, in pounds</th>
<th>When and by whom erected, moved, or transported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thothmes III</td>
<td>United States</td>
<td>90</td>
<td>448,000</td>
<td>Erected by Thothmes III (18th dynasty, 1551–1525 B.C.), at Helopolis (On, Gen. xii, 63, 70); thence moved to Alexandria, 23 B.C.; presented by the Khedive Ismail to New York city, 1879; transferred by Commander Henry H. Gorgens from Alexandria to New York, 1899, and erected on Greywaits Knoll, Central Park, Jan. 22, 1861. At Helopolis and Alexandria it was the mast of the obelisk now on Victoria Embankment, London, England. Three columns of hieroglyphs. The middle column of hieroglyphs was engraved under Thothmes III, and the side columns under Ramess II (19th dynasty, 1839–1550 B.C.). Total expense for removal and erection $100,000, paid by Mr. William H. Vanderbilt, 1861.</td>
</tr>
<tr>
<td>Thothmes III</td>
<td>England</td>
<td>65</td>
<td>419,000</td>
<td>Erected by Thothmes III (18th dynasty, 1551–1525 B.C.), at Helopolis (On, Gen. xii, 63, 70); thence moved to Alexandria under Augustus, 23 B.C.; presented to England by Mehemet Ali, 1819. Through the liberality of Erazame Wilson, F. R. S., it was transported by John Dixon, C. E., to London, and erected on Victoria Embankment, 1819, in Egypt it was the mast of the New York obelisk. Three columns of hieroglyphs. Expenses of removal and erection about $70,000.</td>
</tr>
<tr>
<td>Thothmes III</td>
<td>Berlin, Germany</td>
<td>3</td>
<td>200</td>
<td>Discovered by Lepsius in an Egyptian tomb, A. D. 1848; dating from the fourth and fifth dynasties (3500–2600 B.C.). It indicates that tapering columns were used as funeral monuments, before they were dedicated to the gods, heroes, and kings.</td>
</tr>
<tr>
<td>Thothmes III</td>
<td>Rome, Italy</td>
<td>60</td>
<td>102,000</td>
<td>Discovered by Lepsius, it dates from about 2714 B.C., transferred to Rome under Claudius, A.D. 41–45. Was found in three pieces, unassembled, and erected by Fontana, in the place it now occupies, under Sixtus V., A.D. 1587. It had been considered the mast of Monte Cavallo. No hieroglyphs.</td>
</tr>
<tr>
<td>Thothmes III</td>
<td>Rome, Italy</td>
<td>90</td>
<td>95,000</td>
<td>Considered the twin of Santa Maria Maggiore, and sharing its fate. Was found among ruins, in two pieces, and was erected by Antinori when it now stands, under Pius VII, A.D. 1796.</td>
</tr>
<tr>
<td>Pharaohs</td>
<td>Egypt</td>
<td>67</td>
<td>271,000</td>
<td>Mariette Belay tells us, that Pharaoh Useraser (2771–2920 B.C.) erected it at Helopolis (On, Gen. xii, 63, 70); 3064 a. c. Rameses, 3791 a. c.; Brugesch, 3925 a. c.; Lepsius, 3900 a. c.; and Wilkinson, 3950 a. c. According to Mariette's data, it has stood in its original spot five millennia.</td>
</tr>
<tr>
<td>Pharaohs</td>
<td>Egypt</td>
<td>63</td>
<td>130,000</td>
<td>Ascribed to Pharaoh Useraser (19th dynasty, 2724–2686 B.C.), Syene shaft lying prostrate in two pieces. Difference in shape, two sides being wider than the other two; top round. Some Egyptologists ascribe it to Thothmes I (18th dynasty, 1546–1525 B.C.). It has hieroglyphs.</td>
</tr>
<tr>
<td>Thothmes I</td>
<td>Karnak, Egypt</td>
<td>93</td>
<td>846,000</td>
<td>Ascribed to Thothmes I (18th dynasty, 1546–1525 B.C.). It stands in its original place at Karnak. Hieroglyphs. Queen Hatsheps, daughter of Thothmes I, raised it at Karnak, about 1600 B.C. She was married, for her minor brother, Thothmes III. It stands in the spot where it was erected. Hieroglyphs.</td>
</tr>
<tr>
<td>Thothmes III</td>
<td>Karnak, Egypt</td>
<td>123</td>
<td>740,000</td>
<td>Ascribed to Thothmes III (18th dynasty, 1525–1505 B.C.). Twins are standing in the Temple of Karnak; Rawlinson styles them Boa and Jachin. Hieroglyphs. Thothmes III (18th dynasty, 1516–1505 B.C.) ordered it, and his successor Thothmes IV finished and erected it at Thebes, where Constantine had it transferred to Alexandria, intending it as an ornament for Constantinople; but his son Constantinople had it carried to Rome, about A. D. 857. It was found in three pieces, in rubbish sixteen feet deep, Pope Sixtus V had it erected where it now stands, by Fontana, 1587. It is considered the largest obelisk ever quarried at Syene.</td>
</tr>
<tr>
<td>Thothmes III</td>
<td>Rome, Italy</td>
<td>100</td>
<td>84,000</td>
<td>Ascribed to Thothmes III (18th dynasty, 1516–1505 B.C.). Twins are standing in the Temple of Karnak; Rawlinson styles them Boa and Jachin. Hieroglyphs. Thothmes III (18th dynasty, 1516–1505 B.C.) ordered it, and his successor Thothmes IV finished and erected it at Thebes, where Constantine had it transferred to Alexandria, intending it as an ornament for Constantinople; but his son Constantinople had it carried to Rome, about A. D. 857. It was found in three pieces, in rubbish sixteen feet deep, Pope Sixtus V had it erected where it now stands, by Fontana, 1587. It is considered the largest obelisk ever quarried at Syene.</td>
</tr>
<tr>
<td>Thothmes III</td>
<td>Constantinople, Turkey</td>
<td>55</td>
<td>299,000</td>
<td>Ascribed to Amenophis II, Greek Memnon (18th dynasty, 1553–1500 B.C.); discovered in Egypt, transferred to Albright Castle, England, by Lord Frideswide, 1565; has a column of hieroglyphs on one side.</td>
</tr>
<tr>
<td>Thothmes III</td>
<td>England</td>
<td>7</td>
<td>600</td>
<td>Ascribed to Amenophis II, Greek Memnon (18th dynasty, 1553–1500 B.C.); discovered in Egypt, transferred to Albright Castle, England, by Lord Frideswide, 1565; has a column of hieroglyphs on one side.</td>
</tr>
<tr>
<td>NAMES</td>
<td>Place and country</td>
<td>Height, including pedestal, in feet</td>
<td>Height of shaft, in feet</td>
<td>Weight of shaft, in pounds</td>
</tr>
<tr>
<td>-------</td>
<td>------------------</td>
<td>-----------------------------------</td>
<td>------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>14. Piazza del Popolo</td>
<td>Rome, Italy</td>
<td>116</td>
<td>78</td>
<td>590,000</td>
</tr>
<tr>
<td>15. Luxor</td>
<td>Luxor, Egypt</td>
<td>83</td>
<td>560,000</td>
<td></td>
</tr>
<tr>
<td>16. Trinità del Monté</td>
<td>Rome, Italy</td>
<td>100</td>
<td>43</td>
<td>90,000</td>
</tr>
<tr>
<td>17. Pantheon</td>
<td>Rome, Italy</td>
<td>65</td>
<td>90</td>
<td>18,300</td>
</tr>
<tr>
<td>18. Paris</td>
<td>France</td>
<td>29</td>
<td>75</td>
<td>490,000</td>
</tr>
<tr>
<td>19. Villa Mattei</td>
<td>Rome, Italy</td>
<td>8</td>
<td>6,000</td>
<td>Lepusia is sacred to it at Rome, 138-131 B.C. Parker thinks it was erected at Rome under Augustus, A.D. 138-131. It formerly at the Capitol, whence it was transferred to the site of the Rose. It is a fragment of an Egyptian obelisk on an ordinary granite pedestal. Hieroglyphics contain the cartouches of Ramses II.</td>
</tr>
<tr>
<td>20. Boboli Gardens</td>
<td>Florence, Italy</td>
<td>16</td>
<td>10,000</td>
<td>Dr. Birch attributes it to Ramses II (Sebestos's name occurs among its hieroglyphics). It was in Rome from Helipolis to Rome under Claudius, and erected in the Circus Flora, whence it was transported to the Boboli Gardens at Florence. We read (1 Kings, 11) that pillars surrounded by Temples, 1000 B.C., and that Solomon married rass's daughter,&quot; and built her a magnificent palace of which the Jewish monarch may have borrowed pillars from Egypt, where temples had been: by pillars, columns, and obelisks for centuries of those pillars, named Jechin (foundations) as (strength), found their way into the Roman and are symbolized.</td>
</tr>
<tr>
<td>21. Jachin and Boaz</td>
<td>Jerusalem, Judea</td>
<td>27</td>
<td>10,000</td>
<td></td>
</tr>
<tr>
<td>22. Vatican</td>
<td>Rome, Italy</td>
<td>128</td>
<td>98</td>
<td>721,000</td>
</tr>
<tr>
<td>23. Monte Citorio</td>
<td>Rome, Italy</td>
<td>110</td>
<td>71</td>
<td>450,000</td>
</tr>
<tr>
<td>94. Piazza della Minerva</td>
<td>Rome, Italy</td>
<td>60</td>
<td>18</td>
<td>11,000</td>
</tr>
<tr>
<td>NAME</td>
<td>Place and country</td>
<td>Height, including pedestal, in feet</td>
<td>Height of shaft, in feet</td>
<td>Weight, in pounds</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------</td>
<td>-------------------------------------</td>
<td>--------------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Constantinople</td>
<td>Turkey</td>
<td>85</td>
<td>118,000</td>
<td></td>
</tr>
<tr>
<td>Airobelis</td>
<td>London, England</td>
<td>8</td>
<td>5,540,000</td>
<td></td>
</tr>
<tr>
<td>Aswan</td>
<td>Egypt</td>
<td>95</td>
<td>15,000</td>
<td></td>
</tr>
<tr>
<td>Carc Castle</td>
<td>England</td>
<td>92</td>
<td>150,000</td>
<td></td>
</tr>
<tr>
<td>Isma Navona</td>
<td>Rome, Italy</td>
<td>99</td>
<td>115,000</td>
<td></td>
</tr>
<tr>
<td>Benevento</td>
<td>Italy</td>
<td>10</td>
<td>45,000</td>
<td></td>
</tr>
<tr>
<td>Isola Pianco</td>
<td>Rome, Italy</td>
<td>57</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Selinunte</td>
<td>Sicily</td>
<td>13</td>
<td>5,000</td>
<td></td>
</tr>
<tr>
<td>Rous</td>
<td>France</td>
<td>90</td>
<td>115,000</td>
<td></td>
</tr>
<tr>
<td>Nabataea</td>
<td>England</td>
<td>1</td>
<td>150,000</td>
<td></td>
</tr>
<tr>
<td>Assyria Obelisk</td>
<td>England</td>
<td>12</td>
<td>115,000</td>
<td></td>
</tr>
<tr>
<td>Sungapathm</td>
<td>India</td>
<td>70</td>
<td>65</td>
<td></td>
</tr>
<tr>
<td>Mexican Obelisk</td>
<td></td>
<td></td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Glicen, the American Egyptologist, ascribes this obelisk to Nectanebo | I (367-342 B.C), the last of the Egyptian Pharaohs. It is not known who transported it to Constantinople, where it now adorns the gardens of the Heratoo. Hieroglyphs.

Two dark green basalt columns, in the British Museum, are called Cairo obelisks, ascribed to Nectanebo, the last Pharaoh of the Sesostris dynasty (577-526 B.C.), who erected them before the Temple of Thutmos III (Mercury). They are admired for their delicate-cut hieroglyphs.

An obelisk called Aswan, after a town in Upper Egypt, lies in the ancient quarry of Syene,Estak on three sides, and adorning the rock on the fourth side.

15,000 Erected at Philae, Upper Egypt, by Ptolemy Euergetes II (118-117 B.C.) moved to England by Nelson for Henry Bankes, M.P., and re-erected in Mr. Banks’s grounds at Corfe Castle, Dorsetshire, a.D. 1819. The monolith of Syene granite and the pedestal of sandstone were carried to England. It has but one line of hieroglyphs on each side.

115,000 Domitian ordered this monolith at Syene, about A.D. 90, and had it brought to Rome and erected in the Circus, whence it was transferred by Berolin, under Innocent X, A.D. 1601, to where it now stands. One column of poorly engraved hieroglyphs.

According to Zosim, this obelisk of syenite was found in four pieces, and was erected near the Cathedral, A.D. 1969, where it now stands. Dr. Birch thinks it was originally ordered by Domitian (A.D. 81-96), whose name occurs in the hieroglyphs, with that of Longinus Capito.

Adrian (A.D. 117-138) ordered this monolith at Syene, and had it erected in memory of his adopted son Antoninus, who drowned himself in the Nile, to soothe Adrian’s superstitions fears. The hieroglyphs contain the names of Adrian, Sabina, his empress, and Antoninus. It was found among the ruins a.D. 1633, and erected in the place it now occupies by order of Pius V, 1565. Of this obelisk Zosim says: *Rer la Romanit obelisk adus coptis sodis, vestigii saeculorum (“Of the Roman obelisk now known, this alone exceeds a Saviour”).

Hieroglyphs:

Not considered an Egyptian obelisk, being polygonal instead of quadrilateral. The Catanians say it was made and erected in their city. It stands in front of the Cathedral, on the back of an elephant, in imitation of Delta Minerve, at Rome. Hieroglyphs.

Supposed to have been erected by a Roman emperor, in the Circus. It was found buried near the Ribbe, and re-erected, A.D. 1758, where it now stands. It is of grey French granite; without hieroglyphs.

There are obelisks in Nubia, which is a part of ancient Nubia; they differ from the Egyptians in shape, and have no hieroglyphs.

In the British Museum, London, is a black marble obelisk, erected by Shalmaneser II (859-824 B.C.). Has curvilinear inscriptions that mention Shalmaneser. Found among the ruins of Nineveh.

In the British Museum, London, is a white obelisk that mentions Assurnasirpal in its curvilinear inscriptions; found among the ruins of Nineveh. Assyrian workmanship.

The latest obelisk was erected by the Hindoos as a memorial to Josiah Wbee, at Sungapath, India, A.D. 1900. The pedestal is a monolith nine feet high and seven feet wide. The shaft, sixty feet high, and six feet in diameter at the base, was transported two miles from the quarries to the spot where it now stands. The only differences between the Egyptian and the Hindoo obelisk is, that the latter tapers more than the former.

In the Academy of Davenport, Iowa, is a tablet of bituminous slate, bearing two designs of an obelisk. We are told that the tablet was found in a tomb of the Round-Builders.

Diodorus Siculus, who lived about 60 B.C., tells us, in his "Βιομηθρια ΕρωτοΠα" (Historia Library, that Semiramis (1250 B.C.) ordered an obelisk 150 feet high and 25 feet square from the Armenian mountains, and had it floated down the Euphrates and erected at Babylon, which she made her capital. Pliny tells us: *“Hamani, who was reigning at the

* Wiscon Pharaoh.
time of the capture of Troy, erected one 140 cubits high, etc. When Caunysses took Hel-lopolis by storm, and when the conflagration had reached the foot of the obelisk, he ordered the fire to be extinguished, entertaining a respect for this stupendous work that he had not ent-
tertained for the city itself." As the Persians were sun- and fire-worshipers, their monarch would of course respect a monument to Mithra. Thus far no really practical use has been assigned to obelisks; because Pliny mentions one, we quote: "The obelisk erected in the Campus Martius has been applied to a singular purpose by the late Emperor Augustus: that of marking the shadows projected by the sun, and so measuring the length of the days and nights. With this object, a stone pavement was laid, the extreme end of which corresponded exactly with the length of the shadow thrown by the obelisk at the sixth hour on the day of the winter solstice. After this pe-
riod the shadow would go on, day by day, grad-
ually decreasing, and then again would as 
gradually increase correspondingly with certain lines of brass that were inserted in the stone—
a device well deserving to be known, and due to the sagacity of Facundus Novus, the math-
ematician."

We read in Tacitus (B. II, 59): "Germani-
cus proceeded to the magnificent ruins of Thebes, where still was to be seen on an an-
cient obelisk a pompous description in hiero-
glyphs, which an elderly priest translated thus: "Rhamas called forth from Thebes 700,000 men capable of bearing arms."

In Chabas's translation of the inscription on the Constantinople obelisk we find: "Thoth-
mes, etc., who has gone through the great circuit of Naharana, etc., who has set his boundary, etc., at the extremities of Nahara-
na," etc. (Naharim, Psa. 14, 1). Here Assy-
rian Naharana and Hebrew Naharaim mean in 
Greek Mesopotamia, all three signifying "be-
tween rivers." Egyptologists say that Thoth-
mes III (18th dynasty, 1591-1566 B.C.) con-
quered Mesopotamia and Assyria, and carried his arms as far as the Euphrates.

In George Smith's translation of cuneiform inscriptions appears "Assurbanipal," who says, "Two lofty obelisks, covered with beautiful carving, I removed and brought to Assyria.

Lastly, Arabs have told European explorers, that obelisks have been seen near Hilla, not far from the site of ancient Babylon.

Such is the history, geography, and symbol-
isim of obelisks. Not only has the objective obelisk spread over the globe, but its sound, spelling, and word have entered the world's leading language: Gr. οβελίσκος, from οβελός (a spit); Lat., obeliscus; Eng., obelisk; Germ., obelisk; Fr., obélisque, etc. In ancient Egy-
pian it was first tekken; next men (stability), and later djeri anachai, quite a sacred object and word among the Copts now.

We can not close this essay without allusion to the numerous obelistic fragments in and around the humble Egyptian village of Sun, on the site of the Hebrew Zoa, which was found about the time when Hebron in Palestine was built, 1913 B.C. (Num. xiii., 22). Zon (Greek, Ζαν) was the capital of Meebius, Hyksos, shepherd kings. It also became one of the favorite places of Ramses II, Setostris, (19th dynasty, 1838-1822 B.C.), whose name and cartouches occur in the inscriptions of those fragments, which have one, two, and three columns of hieroglyphs. Late explorers of the fragments, if collected and restored, would constitute ten or twelve obelisks, each fifty or sixty feet high.

As those that see the New York obelisk will ask the meaning of the brazen crabs under the four corners, let us try to give an explanation, as far as can be done nineteen centuries after its erection at Alexandria. S. A. Zola, Grand Master of the National Lodge of Egypt, made the report on the Masonic signs, emblems, and symbols, discovered in the foundation of the obelisk. Dr. J. A. Weiss wrote "The Obelisk and Freemasonry," Grand-Master Anthony delivered the address at the laying of the cor-
er-stone, Oct. 9, 1880, and Secretary Etra 
made the eloquent presentation speech, Jan. 28, 1881; but none of these authors and spe-
kers accounts for the mysterious crabs. Not
of the other Egyptian obelisks have crabs. So
doubt Pontius, the architect, mentioned in the 
inscription on the crab's claw, had some me-
twine or design. We read in mythology that 
Hercules, while crushing the head of the Hydra, 
was clawed and bitten by a huge crab, which 
he killed. This aid to the weaker was prob-
ably the reason for transporting the representa-
"tive of the cruxian family to the starry 
heavens, and naming a constellation Cancer (crab), which ancient astronomy included in 
the twelve signs of the Zodiac. Eratosthenes 
and Hipparchus (crab) as the first sign of their 
Zodiac. In later astronomy, the constellation Cancer is the fourth sign, or near which the sun seems to stand still, June 23, at a point called solstice; also the parallel, named Tropic of Cancer, is in our 
important sign of the Zodiac. Cancer was 
considered the house or sign of the moon. 
Diana was sometimes represented with the 
figure of a crab.

Manlius, who, under Augustus (22 B.C.-A.D. 
14), wrote the famous astrological poem called 
"Astronomics," says those born under Can-
cer—

"Shall sail through seas and dangers too, 
To reap the riches of a foreign coast. 
That thirsty Nature has but thinly sown 
In many countries, they shall bring to one, etc. 
Their bodies shall be strong, inured to pain, 
Their wits contriving and intent on gain, etc."

The poet also intimates, throughout his five 
books, that events happening under this sign 
would have important results. A work on the 
subject so novel caused quite a sensation at 
Rome. Sun-worship was indicated by the
h point to Dionysus (Hercules, primi
x), after whom the ancient archi
named Dionysian. Perhaps Pon
oved the obelisks about that time,
book, chose the crabs as supports
olithe, and erected them while Can
the ascendant. This is the Greek
found on the outer side of the erab’s
H. KAISAPOS BARCHAPOS ANE
APXETERONOTYNTOUS PON
his, translated into English, is: “In
ight of Caesar, Barbarus dedicated
ing the architect.” This Latin in
on the inner side of the claw:
VII AVGVSTI CAESARIS BAR
RAEF AEGYPTI POSVIT ASCENT
PorTi.”

The idea has been advanced that the
had some process by which they
and petrify the huge blocks in their
like bricks, tiles, or pottery. But
on vanishes when travelers tell us
aries whence those monoliths were
ually near the ruins; and the ob
monoliths are known (Steno)
one of its sides to the rock, while
ther sides are worked, dispels such
shows that the Pharaohs had those
as not only quarried, but worked on
order to avoid transporting any

IES, AMERICAN. Abbot, Ezra, an
biblical scholar, born in Jackson,
, 1819; died in Cambridge, Mass.,
48. He was prepared for college
Exeter Academy and was graduated
College in 1840. Soon after, he
bridge, and in 1856 he became as
arian at Harvard College, and was
hared editorial clerk in 1851, and
appointed Bussey Pro
ew Testament Criticism and Inter
 the Divinity School at Cambridge,
 held during his life. He re
degree of L.L.D. from Yale College
and that of D.D. (though he was a
Harvard College in 1872. He
ished for extensive scholarship in
line of study, and was appointed to
the American company of revisers
with the Westminster revision
 Testament. His latest publication
able treatise on the external
the authorship of St. John’s gospel.
was a Unitarian, and contributed
e of the chief periodicals of that denomina
to furnished papers for the “North
Review,” and the “Journal of the
Societies.”

Henry Sewan, a United States Sen
in Coventry, R. I., April 1, 1815;
evidence, R. I., Sept. 2, 1884. He
cker ancestry. He was educated at
iversity, graduating in 1883, and five
several editorial charges of the
Journal,” and subsequently became
one of its proprietors. He was elected Gov
ernor of Rhode Island in 1849, re-elected in
1850 and then declined being a candidate for
a third term. On leaving the Governor’s chair,
he again devoted himself to editorial work. In
1859 he was elected United States Senator,
succeeding Philip Allen, a Democrat, and this
office he held thenceforward to the time of his
death. He was elected President pro tempore
of the Senate in March, 1863, and again in
March, 1871, serving four years in that capaci
ity. He was also elected to that post in Jan
uary, 1884, but declined serving, on the ground
of infirm health. During Mr. Anthony’s long
senatorship, he was twice chairman of the
Committee on Printing, and introduced numer
ous reforms in the management of the Govern
ment printing-office. He was a member of
several important committees—on Claims, on
Naval Affairs, on Mines and Mining, and on
Post-Offices and Post-Roads. He was a mem
ber of the national committee appointed to ac
company the body of President Lincoln to Illi
nois. Though not a brilliant man, and not often
heard in debate, Senator Anthony was looked
upon as possessing strong common sense and
sterling integrity. His course in the Senate
was such as to win for him friends on both
sides of that body, and as “father,” or oldest
member, of the Senate, he was welcomed every
where, and was personally very popular in
Washington.

Appleton, Thomas Gold, an American scholar,
born in Boston, Mass., March 31, 1812; died in
New York, April 17, 1884. His early training
was at the Boston Latin School, where he was
prepared for college. He entered Harvard,
where he had among his classmates J. L. Mot
ley, Wendell Phillips, and other distinguished
men. Mr. Appleton spent much of his time abroad. He
was a liberal patron of the fine arts, and gave
efficient aid to various institutions, including
the Public Library, the Institute of Technolo
gy, and the museums at Boston and Cambridge.
He was an amateur painter of superior merit,
and his water-color sketches of scenes on the
river Nile are quite famous. Mr. Appleton
was author of several books in prose and verse.
In prose his "Faded Leaves" have been much
praised. In prose he published his "Nile
and other works. He was founder of the Bos
ton Literary Club, was highly esteemed for his
Genial temper and courteous manners, and was
looked upon by those who knew him as un
rivalled for wit and humor. A volume of his
"Life and Letters," prepared by Susan Hale,
was published in New York in 1885.

Armstrong, Col. Henry B., an American soldier,
born in New York city, May 9, 1792; died in
Red Hook, Dutchess county, N. Y., Nov. 10,
1884. He was a son of Gen. John Armstrong,
Secretary of War under Madison. His early
years were spent in France, where his father
was American minister to the court of the first
Napoleon, and his education was received at a French military school, where he went bare-footed for years, heard of all kinds being considered effeminate. Before leaving France, in 1810, young Armstrong frequently saw Napoleon and many of his marshals. On the breaking out of the second war with Great Britain, 1812, he entered the army as captain in the Thirteenth Regiment United States Infantry, and served throughout the war with great gallantry and distinction. He was severely wounded at the assault upon Queenstown Heights, and shared in the capture of Fort George, the battle of Stony Creek, and the sortie from Fort Erie. At the return of peace in 1815, he retired from the army as lieutenant-colonel of the First Regiment of Rifles. For nearly seventy years Col. Armstrong lived the life of a country gentleman on his estate on the banks of the Hudson in Dutchess county.

Arnold, Isaac Newton, an American author, born in Hartwick, N. Y., Nov. 30, 1815; died in Chicago, April 24, 1884. His parents were natives of Rhode Island, whence they removed to western New York in 1800. After attending the district and select schools, he was thrown on his own resources at the age of fifteen. For several years he taught school as a part of each year, earning enough to study law, and at the age of twenty was admitted to the bar. In 1836 he removed to Chicago, where he soon established a reputation as an able lawyer. He represented the Second Illinois District in Congress in 1861-65, and was for many years previously an intimate friend of Abraham Lincoln's. Mr. Arnold wrote a history of Mr. Lincoln's career and the overthrow of slavery. This was followed by a "Life of Benedict Arnold" and a memoir of President Lincoln, published since the author's death, which was in part caused by his assiduous and persistent labor in completing his last work. Mr. Arnold was an admirable public speaker, and delivered addresses before various literary societies both in this country and in England.

Beech, William J., an American lawyer, born in Saratoga, N. Y. in 1834, died in Tarrytown, N. Y., June 29, 1884. He began the practice of law in his native town, and continued work there till he was fifty years old. He was elected District Attorney of Saratoga county in 1840. In 1855 he removed to Troy, where he was actively connected in professional work until 1870, when he removed to New York city and established the law firm of Beech & Brown. He was engaged in various notable cases, as that of Stokes for the murder of Fisk, the impeachment of Judge Barnard, the trial of Henry Ward Beecher, and the Vanderbilt suit.

Benham, Henry W., an American soldier, born in Connecticut in 1817; died in New York, June 1, 1884. He entered the Military Academy at West Point in July, 1833, and was graduated in July, 1837. He was at once placed in the Corps of Engineers, and entered upon duty in the work of improving river. In the war of 1839 till 1844 was superintending the repairs of Fort Macon, the sea-wall at St. Augustine, Florida, the following three years he was a member of the Government works in Pensylvania, and elsewhere. He was in the Mexican War in 1847 and 1848 brevetted second lieutenant for gallant and meritorious services in the battle of Buena Vista on Sept. 18, 1847. After the Mexican War, he was in the army in Mexico in 1847 and 1848, brevetted captain for gallant and meritorious services in the battle of Buena Vista on Sept. 18, 1847. After the Mexican War, he was a member of the United States Senate in 1849, and re-elected.
when the civil war broke out, he abandoned the Senate, and avowed his adherence to the State of Louisiana. He went to New Orleans in 1861, and was invited by Jefferson Davis to the post of Attorney-General of the Confederacy, after which he held various offices in the Confederate government, arriving there in September, 1865. At the close of the war he was admitted to the bar. He had a successful practice, and resided in New Orleans until 1868, when he returned to New York, which he had left in 1861. He then opened an office in New York, and was appointed Collector of the port of New York, a position he held for many years. He was a successful lawyer, and was one of the most prominent attorneys in the city of New York.

**Brignoli, Pasquale**, an Italian singer, born in Italy about 1833; died in New York, Oct. 29, 1884. Signor Brignoli came to the United States in 1853. He had previously sung with marked success in the principal opera-houses of Europe, but in America he achieved his highest reputation and spent the largest portion of his life. His first engagement in New York was in the opera company of Max Maretzek. His reputation as a tenor was universal, and his popularity was unbounded. He supported Madame Patti on her first appearance in the United States, about twenty years ago, and performed similar service for nearly every great singer that has visited this country.

**Brown, John**, an American clergyman, born in New York city, May 19, 1791; died in New York, N. Y., Aug. 15, 1884. He entered Columbia College and was graduated in 1811; studied for the ministry of the Episcopal Church under Bishop Hobart, and took orders in 1812. His earliest services were at Fishkill. In 1815 he accepted a call to the rectorship of St. George's Church, Newburg, and in this field of labor he spent over sixty years in active duty, during which he not only built up his own congregation into a strong parish, but also largely aided feeder churches in Orange and neighboring counties. Dr. Brown was understood to be the oldest Episcopal clergyman in the United States. He was also regarded as the oldest member of the Masonic order in America, having been initiated, June 16, 1817, in Hiram Lodge, Newburg. When General Lafayette visited the United States, in 1824, Dr. Brown, at a reception held at Washington's headquarters, delivered the address of welcome. In subsequent years he held office in the Masonic order, and at the time of his death was Chaplain of Hudson River Lodge, No. 607, in Newburg.

**Burnett, Ward Benjamin**, an American soldier, born in Pennsylvania in 1811; died in Washington, D. C., June 24, 1884. He was graduated at West Point in 1832. He served in the Black Hawk expedition, in garrison at Fort Jackson, La., as an instructor at West Point, and in ordnance duty in Florida. He resigned in 1836, and became a civil engineer. At the beginning of the Mexican war he was made colonel of the Second New York Engineers, and was sent to join the army under Gen. Scott. He was engaged with his regiment in the siege of Vera Cruz, and in the battles of Cerro Gordo, Contreras, and Churubusco, in the last of which he was badly wounded. In 1848 he returned.
to New York, where he received the thanks of the Legislature for gallant and meritorious conduct, and was made brevet brigadier-general of New York Volunteers. He also received other marks of high appreciation of his services while in Mexico. He was occupied for some time in public duty in the Philadelphia and Brooklyn Navy-Yards. In 1855-56 he was Chief-Engineer of the Brooklyn Water-Works, for which he made new plans. In 1856 he went to Norfolk, Va., and took charge of the water-works there, and from 1858 to 1860 he was United States Surveyor-General of Kansas and Nebraska Territories. Gen. Burnett was an invalid during the latter years of his life, and gave up all active duty. He was buried at West Point.

Cary, Joseph C., an American inventor, born in Brockport, N. Y., in 1829; died in Martha's Vineyard, Mass., Aug. 7, 1884. He was the inventor of Cary's steam rotary force-pump. About 1860 he built two steam fire-engines, to which his pump was applied, for use in New York city. These engines propelled themselves through the streets by steam-power, and were capable, with ten men, of doing the work of five hundred with the hand-engines at that time in use. They proved to be very efficient at several large fires, and helped to save many millions of property. Mr. Cary entered Wall Street as a speculator about twenty years ago, and was also successful in connection with the Central Cross-town road in New York.

Channing, William Henry, an American clergyman, born in Boston, Mass., in 1810; died in London, England, in December, 1884. He was graduated at Harvard College in 1833, and was ordained as a Unitarian minister in May, 1839. He held several posts of prominence in his profession in various cities and towns of his native country, and subsequently became the successor of James Martineau in Liverpool, England. Mr. Channing was an author of considerable ability. In 1840 he published a translation of Jouffroy's "Ethics." In 1846 he compiled the memoirs of his uncle, the distinguished Unitarian theologian and controversialist, Dr. W. E. Channing. He also published the life and writings of J. H. Perkins, in two volumes, and the memoirs of the Marchioness Osoll (Margaret Fuller).

Clarkson, Robert Harper, an American clergyman, born in Gettysburg, Pa., Nov. 19, 1826; died in Omaha, Neb., March 10, 1884. He was graduated at Pennsylvania College in 1844, studied theology at St. James's College, Maryland, and was ordained deacon in 1848, and priest in 1851. He became rector of St. James's Church, Chicago, in 1849, and served for sixteen years. He was consecrated Missionary Bishop of Nebraska and Dakota, Nov. 15, 1866, and entered at once upon his work. Bishop Clarkson was distinguished for earnest devotion to the duties of his office, was very successful in promoting the interests and ad-
School, in his native town, and Columbia College, and pursued his legal studies in his father's office and under his father's personal tuition. He began to gain distinction soon after his admission to the bar, and when Poughkeepsie became a city he was elected its first mayor. His reputation as an advocate increased until 1855, when he was elected a Justice of the Supreme Court for the Second District. He continued to serve as judge during the eight years of his term. In 1862 he was appointed presiding justice for his district. In the following year, which was the last of his term, he sat, according to the system then in operation, as a Judge of the Court of Appeals. His opinions rank among the best written in the reports of the State. Soon after leaving the bench, Judge Emott removed to New York, where he entered actively into the practice of law, and his tall and sturdy but commanding figure was one of the most familiar sights in the courts. He was thirty-two years President of the Merchants' Bank of Poughkeepsie, and for a much longer period devotedly attached to the organ, in which he played daily, and to his large and valuable library. Judge Emott was a member of the Episcopal Church, and always zealous for ecclesiastical affairs; an able, earnest churchman of the best school, holding many responsible posts in churches, and particularly efficient as an executive officer in other institutions connected with the Church.

Faulkner, Charles James, an American lawyer and politician, born in Berkeley county, Va., in 1806; died in Boydville, W. Va., Nov. 1, 1884. He studied law, and was admitted to the bar in 1829. Three years later he became a member of the Virginia House of Delegates, where he introduced a measure looking to the gradual abolition of slavery in Virginia, by declaring that all children born of slave parents after July 1, 1840, should be free; but the proposition was defeated. In 1845 Mr. Faulkner devoted himself to the work of his profession, and speedily took high rank in it. He was elected State Senator in 1841, but resigned in the following year. In 1848 he was elected to the House of Delegates, and introduced a bill that was passed and sent to Congress, which became the famous "Fugitive Slave Law" of 1850. The next year he was elected to Congress, and then re-elected by the Democratic vote for four successive terms. When James Buchanan became President in 1857, he offered Mr. Faulkner the mission to France, which, at first declined, was accepted in 1859. Louis Napoleon was induced by the American minister to sympathize with the South in the approaching contest, rather than with the Union, and accordingly President Lincoln recalled Mr. Faulkner, who, on his return to the United States, was arrested and thrown into prison as a disloyal citizen. When released he joined the Confederate army, and served until the surrender of Lee. For some years he was debarred the rights of citizenship on account of having borne arms against the Government, but in 1872 his political disabilities were removed, and in 1874 he was elected to the House of Representatives. He was a candidate subsequently for the United States Senate and for the governorship of West Virginia, but failed of success in both. He then retired to private life.

Foster, Joel, an American physician, born in Barnard, Vt., March 10, 1802; died in New York city, June 29, 1884. He was a graduate of Jefferson Medical College, Philadelphia, and removed to New York in 1856. When President Lincoln called for volunteer physicians in 1861, Dr. Foster, who had been an active abolitionist, with nearly forty others, started for the field, where he did good service, which was appropriately acknowledged by the Government. Dr. Foster was one of the founders of the Academy of Medicine in New York city, and was identified with the Infant Asylum.

Foster, George, an American artist, born in Deerfield, Mass., in 1823; died in Boston, March 21, 1884. At the age of fourteen he went to Illinois. He manifested strong natural talent for art, went to Albany, N. Y., in 1843, and was in the studio of H. K. Brown for about a year. Thence in a few years he made his way to New York city, where in due time he met with success. He was elected an associate of the National Academy in 1857, and traveled extensively in the United States as well as abroad. He returned to his farm in Deerfield for some years, but in 1876 he exhibited fourteen pictures in Boston, and was again busy with art.

Garrett, John Work, an American banker and railroad president, born in Baltimore, Md., July 31, 1820; died there, Sept. 26, 1884. He received his literary training at Lafayette College, Easton, Pa., and passed thence to his father's counting-room, where he obtained a thorough business education. For nine of the years his time and attention were bestowed upon the affairs of the large banking-house of Robert Garrett & Sons, and he accumulated great wealth. In 1856 he became interested in the Baltimore and Ohio Railroad, and the following year, having clearly set forth his views as to the true policy of management of the road, he was elected president of the company. This post he held up to the time of his death. By strict economy and resolute carrying out of business principles in every department, Mr. Garrett succeeded in relieving the road of its financial difficulties and placing its affairs on a prosperous and sound footing. The only serious difficulty that occurred during his presidency was the great strike of employés, in 1877, owing to a dispute in regard to wages. For a few days there was a mob raging against the president; but order was restored, and Mr. Garrett soon after proved his sincere concern for the interests of those in the employ of the company by the estab-
lishment of the Baltimore and Ohio Railroad Employes' Relief Association. This has proved to be a decided success, and is in the hands of the employes themselves. During the civil war Mr. Garrett was enabled to render efficient service to the cause of the Union by using the facilities of the Baltimore and Ohio road for conveying troops and supplies, and this service was warmly acknowledged by President Lincoln and Secretary Stanton. In addition to his labors in the railroad's affairs, Mr. Garrett was largely concerned in various other matters, was one of the trustees of the Johns Hopkins estate, and was active in politics.

Greene, Samuel Dana, an American naval officer, son of Gen. George S. Greene, formerly of the army, born in Rhode Island, Feb. 11, 1840; died by his own hand, at Portsmouth Navy-Yard, Dec. 11, 1884. He was educated at the Naval Academy, and served his country afoot and ashore for almost a quarter of a century. He was in command of the original Monitor after Capt. Worden was wounded, at the moment the Merrimac was driven back into James river. Just before his death, Commander Greene completed for "The Century" an account of the famous engagement, which will be included in that magazine's series of war papers. There can be no doubt that his suicide was an act of insanity, as no cause for it is known.

Gregory, Samuel B., an American naval officer, born in Marblehead, Mass., in December, 1818; died in Hamilton, Mass., June 7, 1884. At the outbreak of the civil war he offered his services to the Government, and in December, 1861, he was given command of the steamer Western World, with which he took part in the capture of Fort Pulaski. In 1863 he was on blockade duty in Chesapeake Bay. A reward being offered by the President of the Confederacy for his body, dead or alive, he sent word in his stead that if any one belonging to his vessel was injured, he would lay the country waste for twenty miles. No one was molested. In August of that year, while boarding his ship in a gale, he received injuries that ultimately caused his death. In July, 1863, Gen. Dix made a demonstration from Yorktown, Va., via White House, against Richmond. The Eleventh Pennsylvania Cavalry were waiting transportation, and Capt. Gregory said, "Take my gunboat." The general commanding expressed surprise at the offer of a gunboat for such a purpose, when Capt. Gregory said, "We are here to put down the rebellion, and nothing is too great to be used for that purpose." Three hundred and sixty horses and men went on board, and in twelve hours were on their way to Bottom's Bridge.

Gregg, Samuel D., an American surgeon, born in Easton, Pa., July 8, 1805; died in Philadelphia, May 6, 1884. His began the study of medicine in his native place, and went thence to Jefferson Medical College, Philadelphia, where he was graduated in 1828. He practiced for some years in Easton 1853, he was made Demonstrator in the Medical College of Ohio, at and in 1855 was appointed Professor of logical Anatomy in the same institution. Several years later he became Professor of the University of Louisville, Ky.; he succeeded Dr. Mott in the University of New York. By the urgent request of his associates, he returned to Kentucky at work there, after only a single session. In 1856 he was elected to the Surgeon in his alma mater, Jefferson Medical College, Philadelphia, which post he occupied or and success until within two years when he resigned on account of years and desire for repose. Dr. author of numerous valuable works, his "System of Surgery," "Element logical Anatomy," "Diseases of the Joints," "Results of Surgical Operations," "Malignant Diseases," and "Manual Surgery." In 1873 he received the D.C.L. from the University of Oxford. He was a member of numerous foreign and home medical and surgical associates, and made many contributions to professional journals.

Hamilton, Philip, youngest son of statesman, Alexander Hamilton, born in York city, June 1, 1802; died in Paris, N. Y., July 9, 1854. For forty years he occupied the chair of judge of a district in the city of Rochester. He was at the trial of the noted in 1861. He was also Judge for the Naval Retiring Board at the Brooklyn Yard. His latter years were spent in retirement.

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for a considerable period held the United States Naval Officer at Boston, in Administration of President Grant, a tour in the East in 1881, and published giving an account of it.

Elisha, an American physician, born in St., March 4, 1824; died in X., Jan. 31, 1884. In early life he moved to California, and lived in New York, where he joined Charles King in work on the "New York American," a journal of some influence. In 1883 Mr. Hoffman established the "Knickerbocker Magazine," and soon after that he became editor of the "American Monthly." Two years later he published "A Winter in the West," which met with much favor. Other works followed. In 1840 appeared his first work of fiction, entitled "Greyshaws," a romance founded on the trial of Bechamp for the murder of Col. Sharpe in Kentucky. He published in 1849 a collection of his poems, under the title of "The Vigil of Faith, and other Poems," which appeared in 1845, revised and enlarged, as "Love's Calendar." Some of Mr. Hoffman's songs and lyrics have obtained a permanent place in literature, notably "Sparkling and Bright," and "Monterey." In 1851 he became editor of the "Literary World," which post he held for three years, till he was seized with a mental disorder, which rendered him incapable of literary or other work, and from which he never recovered.

Hubbard, Richard Dudley, an American lawyer, born at Hartford, Conn., Sept. 11, 1815; died in Hartford, Conn., Feb. 28, 1884. He was graduated at Yale College in 1839, and admitted to the bar in 1842, and practiced his profession till the close of his life. He was elected to the Assembly from East Hartford in 1842, and represented Hartford in the same body in 1855 and 1856. From 1846 to 1868 he was State Attorney for Hartford county. He was a member of Congress in 1867, but declined a re-election. As Democratic candidate for Governor, he was defeated in 1872, elected in 1874, and defeated again in 1877.

Hunter, William B., an American lawyer and publicist, born in South Carolina, in 1844; died in Petersburg, Va., Feb. 17, 1884. In "nullification" times his father opposed Calhoun's doctrines, and found it expedient to leave the State. He removed with his family to New Orleans. William Hunt was educated at Yale College, after leaving which he studied law, and was admitted to the bar. When the civil war broke out, in 1861, Mr. Hunt espoused the cause of the Union. He was busily occupied in the duties of his profession during the larger part of his life. In 1878 he was chosen Attorney-General of Louisiana. The next year he took up his residence in Washington. In 1878 he was appointed Justice of the Court of Claims of the United States. In 1880 he was selected by President Garfield as Secretary of the Navy, but when Mr. Arthur came into power he sent Justice Hunt as United States minister at Washington, and......
to succeed Mr. Foster at the court of St. Petersburg.

Hunst, Charles F., an American merchant and financier, born in Bloomington, N. Y., October, 1819; died in Salem, N. Y., July 19, 1884. He entered mercantile life at the age of twenty-one, and acquired a fortune. In a period of great depression he became President of the People's Bank, New York, a post that he filled for twenty-seven years with eminent success. During the civil war he did good service as a member of the Clearing-House, and in the panic of 1873 he was chairman of the Loan Committee. He was also occupied in various kinds of duties as director, trustee, and executive.

Ivins, Henry, an American publisher, born in Glasgow, Scotland, Dec. 25, 1808; died in New York, Nov. 26, 1884. He came to the United States when twelve years old, and learned the book business, chiefly in Utica, N. Y. He was for several years head of a bookstore in Auburn, N. Y., and removed to New York city in 1846. He there entered into partnership with M. H. Newman, a successful school-book publisher. Thenceforward Mr. Ivison devoted himself entirely to the specialty of educational works. After Mr. Newman's death, in 1869, Mr. Ivison associated with himself Mr. H. F. Phinney, of Cooperstown, and on Mr. Phinney's retirement in 1866, the firm was enlarged to the present style, Ivins, Blakeman, Taylor & Co. Mr. Ivison retired from active participation in business in 1883.

Johnson, Alvin Jewett, an American publisher, born in Wallingford, Vt., Sept. 28, 1827; died in New York city, April 22, 1884. When a boy he worked on a farm, and having acquired a fair education he went to Virginia to teach school. In 1853 he settled in New York city, and became agent for "Colton's Atlas." Not long afterward he reconstructed the work, and issued it as "Johnson's Illustrated Atlas." He also engaged in preparing and publishing books, including a cyclopedia that was issued under the editorial supervision of President Barnard, of Columbia College. Mr. Johnson was among the first business men of the city, and acquired a handsome fortune.

Kinsella, Thomas, an American journalist, born in Ireland in 1832; died in Brooklyn, N. Y., Feb. 11, 1884. He came to the United States when a boy, and entered a printing-office. Some years later he was admitted into the office of the "Brooklyn Eagle" and became a contributor to its columns, chiefly in reporting cases in the police courts of that city. In 1861, the "Eagle" having expressed unusual and strong sympathy with the South, the editor was displaced, and Mr. Kinsella was put in charge. He held this post during the rest of his life. In 1863 he supported President Johnson, and was made Postmaster of Brooklyn. In 1868 he was appointed a member of the Board of Education, and also one of the Water and Sewerage Board. He was elected to Congress in 1870, and supported the nomination of Horace Greeley for President of the States in 1872. He was also a supporter of Gov. Tilden in 1876. In 1880 he was a supporter of Hancock for the presidency, and of the "Jeffersonian Club," but with only success. Mr. Kinsella was a ready writer, and made the "Eagle" prosperous.

Leitch, John, an American politician, born in Lexington, Va., March 28, 1813; died at Richmond, Jan. 25, 1884. He was educated at Union College and Randolph-Macon College. He was admitted to the bar became editor of a newspaper, and was Governor of Virginia Constitutional Convention in 1850. He was elected to Congress on the Democratic ticket four times in succession from 1851 to 1859. At the latter date he was Governor of Virginia. The State Senate passed a resolution disapproving his conduct as Governor, with a provision that he be submitted to a vote of the people six weeks. Without waiting for the popular decision Leitch at once turned over to the Confederate authorities the entire forces of the State the following year. He played a prominent part in politics, but devoted to the practice of law in his native state.

Levison, Mansfield, an American soldier, born in Washington, D. C., in 1820; died in New York city, June 1, 1884. He was graduated Military Academy, West Point, in 1843 appointed second lieutenant in the 4th Infantry and served at various points in Maryland, Tennessee, and Virginia. He also took the occupation of Texas in 1846-47, and later his regiment in the Mexican War earned him the reputation at Monterrey, Vera Cruz, and Chapultepec. He was present at the capture of the city of Mexico, where he received severe wounds. For four years, 1854-58, he was in command of the recruiting depot at Columbus, New York. He then resigned the army, went into business in New York, and in 1858-61 was Deputy Street Commissioner of the city, entering the service of the Confederate Union cause triumphed, he retired to his plantation near Savannah; but not long afterward he returned to New York again and was engaged as assistant engineer under Mr. Newell.

Lyman, Davideldon, an American missionary, born in New Hartford, Conn., July 28, 1828; died in Hilo, Hawaiian Islands, Oct. 4, 1883. He was graduated at Williams College in 1852, and led at Andover Theological Seminary, ordained in Hanover, N. H. He married Sarah Joiner, in Royalton, Vt., Nov. 8, 1856, and the next day they set out for Honolulu, to join a company of nineteen missionaries who were about to sail in the whale-ship Atalanta for the Hawaiian Islands. This was the largest company of Protestant missionaries that had yet gone out to that group.

The age lasted from Nov. 8, 1851, to May
reached Honolulu. Mr. and Mrs. Lyman assigned to the station at Hilo, the remotest of the group, now a thriving town. Here the young couple, their life-work. A few converts were made by preceding missionaries, but education and of preaching were begun. Mr. Lyman, even before he learned the native language, in missionary work was done, was a convert. In 1838 two co-laborers—Titus and Fidelia Coan. The growing church was assigned to Mr. Coan, Lyman's remarkable ability and zeal led the mission to engage him an academy for native young men. Of the brightest pupils were selected the primary schools; they received instruction in geography, history, and the Bible. Lyman taught them in urbane manner. They had been in the even in the making of clothes and for which the Hawaiian women show a marked inclination. The remarkably disciplined, and were supplied with food mainly at his own labor. Mr. Lyman's time were devoted to the establishment of the school, which he administered, tact, and unbroken success; to this work, the pastoral duty of church also fell to him during his frequent tours through his extended mission and his missionary work. In 1873, from his more remote fields, he divided the care of his schools and missionary work. He continued in the mission field and was equal in missionary work a period of fifty-two years, any vacation, or indeed, by any means. He was buried by the side of another, Titus Coan. A quiet, courteous, and honored man has passed out to mission-fields. Mr. Lyman Iren, of whom Prof. Henry M. Lyman, is the eldest.

Cyrus Hall, an American inventor and manufacturer, born in Walnut Grove, Va., Oct. 9; died in Chicago, Ill., May 18, 1893, was a large owner of mills and shops, and, having a talent in that field, he was much sought after. He applied for a patent for the invention of the reaping-machine was placed in the market in 1840, and five years later Mr. McCormick moved to Cincinnati, Ohio, and patented various improvements. In 1857 he removed to Chicago, and the next year began building his machines in his own shops. He made a large fortune through his reaping-machines, received numerous prizes and medals, and used his wealth liberally in the cause of education.

McDowell, Katherine S. (Benson), an American author, born in Holly Springs, Miss., Feb. 26, 1849; died there, July 22, 1884. She received her education at seminaries in Mississippi and Alabama, the family moving from one place to another before the advance of the national forces. The most vivid of her early memories were scenes in the civil war, when she witnessed the passing and repassing of portions of either army. With a zealous personal devotion to the South as her home, she had a hatred of slavery, and a natural affinity with the intellectual activity of the North. In 1870 she married Edward McDowell, a young man of good family in Holly Springs, who had been educated in England. They had one child, a daughter. In 1872 business called Mr. McDowell to Texas, and Mrs. McDowell carried out her long-cherished purpose of visiting Boston. There she became a member of the family of Nahum Cainen, Esq., and soon made the acquaintance of the best-known literary people. For two or three years, during the winter months, she was private secretary to the poet Longfellow, who took pleasure in introducing her to his friends as one destined to make a name in literature. A personal friend says: "She was of distinguished personal appearance—tall, willowy, graceful, and of the fairest complexion, with hair of a rich golden-auburn color, that almost defied the comb. She possessed the power to be a delight to the eye when unloosed, and eyes of ever-changing brilliance, that sparkled with the sunniest humor and animation whenever they relaxed from their usually almost austere dignity of expression." Her first contribution to the Boston Evening Transcript was a satirical poem entitled "The Radical Club." It was said to have killed that club, which had been called the "Den of the Unknown." She was the author of "Like unto Like" (1881), a novel of Southern life during the reconstruction period, and "Dialect Tales" (1884). It is said that all of these sketches are close studies from life. In 1878, when yellow fever was raging in the lower Mississippi valley, she left her home in Boston and went to Holly Springs, where she nursed her father and brother till they died. Her own death, which followed eight months of suffering, was caused by cancer in the mouth.

Marsh, Sylvester, an American engineer, born in Massachusetts in 1808; died in Concord, N. H., Dec. 80, 1884. He went to Chicago in 1834, when that city was only a hamlet. In 1833 he was lost on Mount Washington, and then
conceived the idea of the railway to its top. He had great difficulty in getting a charter for it, owing to the remarkable character of the scheme, and, as he told the writer, was at that time commonly known as "Crazy Marsh." But he carried the enterprise through, and completed the road in 1869. He left a large property, chiefly the proceeds of his railway.

**Marshall, Orsamus B.**, an American lawyer, born in Franklin, Conn. Feb. 1, 1815; died in Buffalo, N. Y., July 9, 1884. His father was a physician. The son was graduated at Union College in 1831. He then attended law lectures at Yale College, and was admitted to practice in 1834. For forty years he was a well-known member of the Buffalo bar, and for half of that period stood as high in the ranks as any member of the legal profession in western New York. As an historical writer and student, Mr. Marshall contributed many valuable papers to the periodicals and to the Buffalo Historical Society, of which, with President Fillmore, he was one of the founders. Many of his publications were the result of original researches among the archives of France, which have honored him a distinctly recognized place in that department of literature. His time and energies were freely given to the cause of intellectual culture, charity, and enterprises affecting the higher interests of the people among whom he lived. He spent the last winter of his life at Nassau, New Providence, and in Florida.

**Morphy, Paul**, an American chess-player, born in New Orleans, June 22, 1837; died there, July 10, 1884. He was a croisé of Spanish descent, and his father was Judge of the Supreme Court of Louisiana. He was taught chess by his father, and at the age of twelve years was one of the best amateur players in New Orleans. His education was obtained at a Friends Carolina college, and his profession was nominally the law; but he gave himself up to chess, and became the most distinguished player in the world. In 1849 he defeated Herr Lowenthal, then the champion German, in chess. In 1858 he challenged Viresa, then the champion French player, two games out of three. He was present at the first American Chess Congress, held in New York, in October, 1857, and went home the acknowledged champion chess-player of America. In 1858 he visited Europe, and there met and vanquished all opponents. He challenged Howard Staunton in England, who at the time was regarded as king of chess. The challenge was at first accepted, but Staunton finally declined to play against Morphy. In Paris he beat Horwitz in five games out of seven, and during his stay in Europe he played some wonderful blindfold games. He also beat other distinguished chess-players, and his superiority was generally conceded. Subsequently he challenged the world, and agreed to give any player a pawn-move; but the challenge was never accepted. Twenty years ago, Morphy suddenly abandoned chess-playing, having conceived an absolute abhorrence for it. He steadily refused to converse on the subject, abused his society of players, and occupied himself in legal pursuits.

**Packard, Alpheus B.**, an American scholar, born in Chelmsford, Mass., in 1798; died on Eagle Island, Me., July 13, 1884. He was graduated at Bowdoin College in 1816, became a tutor there in 1819, was appointed Professor of Greek and Latin in 1824, and was made vice-president not long after. His whole life was spent in the service of his alma mater. From 1824 he was Professor of Natural and Revealed Religion, and on the retirement of President Chamberlain he became acting president, the duties of which office he was discharging at the time of his death. His labors were continuous for more than sixty years.

**Packard, Lewis B.**, an American educator, born in Philadelphia, Pa., in 1836; died in New Haven, Conn., Oct. 26, 1884. He was graduated at Yale College in 1856, and went to Germany, where he pursued an extended course of study, and received the degree of Ph.D. On his return home he studied theology, and in 1863 was appointed assistant Greek professor in Yale College. Three years later he was made full professor. His health was not vigorous, and, though undoubtedly a good scholar, he did not gain the reputation to which his abilities and learning entitled him. In 1868 he was at Athens, Greece, in charge of the Archaeological School established there by American colleges.

**Palmer, William Pitt**, an American actuary, born in Stockbridge, Mass., in 1836; died in Brooklyn, N. Y., May 2, 1884. He was graduated at Williams College, and took up his residence in New York city. He studied medicine for a time, did some teaching, and contributed frequently to journals and magazines. He wrote also a considerable number of poems. Mr. Palmer entered the service of the Manhattan Insurance Company, and in a few years became its president. The company was raised by the Chicago and Boston fires, and Mr. Palmer became the leading figure in the burning Insurance Company. Several of his poems have gained wide reputation, such as the "On Light," and "Orpheus and Eurydice."

**Peabody, Abner Hart Lincoln**, an American educator, born in Berlin, Conn., July 18, 1788; died in Baltimore, Md., July 15, 1884. She began teaching school at the age of nineteen, and for more than forty years was engaged in this occupation. In 1817 she married Abner Lincoln, of Hartford, editor of the "Connecticut Mirror." He died in 1828, and eight years afterward Mrs. Lincoln married John Peabody, an eminent lawyer of Vermont. In 1834 she became associated with her sister, Mrs. Emma Willard, in the Female Seminary at Troy, N.Y. Here she remained until 1831, after which date she occupied herself chiefly in preparing educational works. These were very successful and brought her name into prominence as an educator. In 1841, at the invitation of the
up of Maryland, she removed to Balti-
den, with her husband, and established the Pa-
o Female Institute. Mr. Phelps died in
and for eight years following Mrs. Phelps
acted the Institution alone with marked
After this, having been forty-four
the service, she gave up active duty,
the evening of life in quiet with her
y. Her educational works, which had a
also were devoted mainly to natural
ce. Among the others were "The Female
ant," and "Hours with my Pupils."
ns, Royal, an American merchant, born in
orinas, N. Y., March 30, 1809; died in
York city, July 30, 1884. He received a
common-school education, and early in
made his way to St. Croix, West Indies,
to enter the office of a coffee-merchant
prospered. In 1840 he went into business
own account, and established houses at
Cabello and Laguayra. In 1847 he
to New York and became one of the firm
itland, Phelps & Co. He was a very able
energetic business man, and acquired a
fortunes. Phelps was active in sup-
the Union cause on the outbreak of
Civil War. He was Vice-President of the
York Chamber of Commerce, and of the
Ear Infirmary, trustee of Roosevelt
ital, and filled other similar offices.
George E., an American clergyman,
green county, Ga., in 1811; died in the
ity of Sparta, Ga., Sept. 3, 1884. He was
ated at Franklin College, Athens, in his
State, in 1829. He studied law for a
time, but in 1831 entered the itinerant
odist ministry. He was at first on the
circuit, but three years later he was
fered to Savannah. In 1839 he was
President of Chattooga Female Col-
at Maco; and later of Emory College,
of which institutions owe much to his
and abilities. In 1843-44 he built St.
a Church, Augusta, Ga., and in 1854 was
d Bishop to the Methodist Episcopal
South. In 1859 he made an overland
y to San Francisco, on a stage-coach,
er long journeys, in the work in which
as engaged.
Augustus C., an American lawyer, born
miscueck, N. Y., Aug. 1, 1812; died in New
ity, March 27, 1884. He was graduated
Union College in 1830, studied law, and
mitted to the bar. He entered upon his
al career in 1837, when he was made
man of Tammany Hall General Committee
lected as Democratic candidate for Gov-
of New York. He was not elected; and
44, when he was nominated by the party
or of the city, he declined. During the
Administration, 1857-61, he was
ctor of the Port of New York. After
occupied himself in railroad and other
ises. In 1862 he was a director of the
River and other railroads. He was also a di-
ector of the Western Union Telegraph Com-
any from 1870, and was largely interested in
management and care of financial trusts, as
well as of philanthropic institutions. In 1867
he was a member of the convention to revise
the Constitution of the State, and did good
service in that connection. After the down-
fall of the Tweed ring in New York, he aided
in reorganizing and strengthening the Demo-
catic party in the city, under the leadership
of Tammany Hall. In 1878 he was an unsuccess-
fule candidate for mayor.
Sheeldon, Smith, an American publisher, born in
Charleston, N. Y., in 1811; died in Nyack,
N. Y., Aug. 30, 1884. His first business ven-
ture was in the dry-goods trade at Albany, N.
Y., where he acquired a considerable fortune.
He removed to New York City in 1854, and es-
ablished a publishing-house which proved to
be a success. Mr. Sheldon was a member of
the American Bible Society, a trustee of Vassar
College, and also of Rochester University
and Madison University, and was an active
member of the Baptist Church.
Simpson, Matthew, an American clergyman, born in
Cadiz, Ohio, June 21, 1811; died in Philadel-
phia, Pa., June 17, 1884. He was educated at
Madison College, Pennsylvania, and became a
tutor in that institution. He soon returned to
Ohio, where he began the practice of medicine,
but finally entered the Methodist ministry. In
1837 he was elected Vice-President of Alle-
geny College, where, at the same time, he
discharged the duties of Professor of Natural
Science. In 1839 he became President of the
New Indiana Asbury University, and for nine
years labored in building it up. In 1848 he
was elected editor of the "Western Christian
Advocate," published in Cincinnati. At the
General Conference, held in New York in
1844, Dr. Simpson took strong ground against
slavery, which he always opposed, and in so
far aided in the formation of the Methodist
Episcopal Church South. In 1852 he was
selected one of the bishops in the Methodist
Church. In 1857 he represented American
Methodist at the Irish and British Confer-
ences, and the same year was a delegate at the
Berlin session of the Evangelical Alliance.
He also took the opportunity to make an
extensive tour through Europe, Egypt, and
Syria, from which he returned to America in
1858 with impaired health. Having regained
strength, he entered afresh upon his work,
and traveled widely in the interests of his
church. In 1881 he was a delegate to the
General Methodist Conference held in
London, and was one of the speakers at Ex-
ter Hall. He was intimate with President
Lincoln and Secretary Seward, and was fre-
quently consulted by them on questions of im-
portance. He was also an industrious writer.
His "Hundred Years of Methodism," "Cyclo-
pedia of Methodism," "Lectures on Preach-
ing" (1852-58), and other works, afford evi-
dence of his ability and carefulness in the use of his pen. His power as a public speaker was far beyond the average, as was shown markedly in an oration delivered by him in the New York Academy of Music, during the civil war, entitled "The Future of Our Country."

Slater, John B., an American philanthropist and manufacturer, born in Slaterville, R. I., March 4, 1816; died in Norwich, Conn., May 7, 1894. His father was an extensive cotton manufacturer, and John was early trained for the business that he afterward carried on so largely and successfully. By energy, diligence, and superior business ability, Mr. Slater enlarged his operations, and in 1823 became sole owner of the mill property he was then conducting. He also made excellent investments, and in a few years acquired millions. He was early interested in the cause of education, and gave liberally to the establishment of the Nor-
wich Free Academy, and in other quarters; but his crowning work was the placing in the hands of trustees, in April, 1862, of $1,000,000, the interest of which is to be used for the education of the freedmen in the South. Ex-Presi-
dent Hayes, Chief-Justice Waite, Rev. Phillips Brooks, and others, are the trustees.

Smith, Benjamin Brewster, an American clergy-
man, born in Bristol, R. I., June 13, 1794; died in New York city, May 31, 1884. He was graduated at Providence College (now Brown University) in 1816. The next year he was ordained deacon, and in 1818 priest. He began his ministerial labors in St. Michael's Church, Marblehead, Mass., and subsequently held other parishes in Vermont, Virginia, and Kentucky. He was rector of Christ Church, Lexington, Ky., from 1830 to 1887, and in October, 1832, was consecrated Bishop of the Diocese of Kentucky. The consecration took place in St. Paul's Church, New York. Three others were made bishops at the same time, viz., Hopkins, Melvaine, and Doane. As the first Bishop of Kentucky, Bishop Smith had a field of work before him, requiring unwearied patience and perseverance, and the encountering of many hardships in the over-
sight of the wild and sparsely settled country. He gave himself to his work with zeal and courage, and after more than forty years' service alone, he was furnished with an assistant, Bishop Dudley, who succeeds him in Ken-
tucky. On the death of Bishop Hopkins, in 1868, Bishop Smith, being senior, became the presiding bishop in the Episcopal Church.

The latter years of his life the venerable prelate spent in New York, where, in 1882, was celebrated the fiftieth anniversary of his consecration. He was State Superintendent of Educa-
tion in Kentucky for many years, and urged forcibly the cause of common schools. During the civil war, he arrayed himself on the side of the Union, and endeavored in every way in his power to promote the welfare of the negro population.

Stear, Wllfr B., an American journalist, born in Salisbury, Vt., Dec. 19, 1818; Chicago, Ill., Oct. 27, 1884. He was apprenticed to the printing business, the age of seventeen went to New York to obtain employment in the office of the Journal of Commerce. In 1838 he went to the West, and made several vest journalism in Indiana and Michigan. He was appointed postmaster in Jackson, Mich., and he was a member of the Constitutional Convention in 1849. Years later he removed to Detroit, a "The Times" in 1854 he took up the Free Press, which he was a success as a business venture. Mr. Stear became wealthy in his old age, and died in Chicago in 1861.

Swain, Noah Hayes, an American jurist in Culpeper county, Va., Dec. 8, 1818; New York city, June 8, 1884. He was graduated at the University of Virginia, and studied law in Warren's and was to the bar in 1825. Soon afterward moved to Ohio, and in 1826 opened a law office in Coshocton. His talents brought notice, and he was appointed prosecuting attorney. In 1839 he was elected to the Legislature, and the year following was re-elected. He became a member of the United States Senate, and was successively Attorney for the District of Ohio. He held for ten years. In January, 1839, was appointed by President Lincoln a Justice of the Supreme Court of the United States, and filled his duties so faithfully that when he resigned on account of health the degree of LL. D. was conferred upon him by Dartmouth and Yale Colleges.

Swisshelm, Jane Gray, an American jurist, born in Pittsburg, Pa., Dec. 6, 1818; there, July 22, 1884. Her father was James Cannon. In 1886 she married James Swisshelm, who subsequently was a divorce from her on the ground of insanity. She was the author of a series of letters on the Mexican War, which attracted considerable attention. In 1848 she established the "Saturday Visitor," which she continued until 1857, when she removed to St. Cloud, where for a few months she published "Saturday Visitor," which for its anti-slavery sentiments was destroying a pro-slavery press and views the river in May. She then established the St. Cloud
and appeared as a speaker at anti-slavery meetings. During the civil war she served as a nurse in Campbell Hospital, Washington, D.C., after the battle of the Wilderness. She was of 182 badly wounded men at Fredericksburg for five days, with no surgeon or assitant, and saved them all. She was a frequent contributor to periodical literature, andlished in book form "Letters to Country Men" (1835) and "Half a Century" (1860). During her last years she resided at Swisichel, Allegheny county, Pa.

Watson, George M., an American engineer, born New Haven, Conn., in 1809; died in New York city, May 17, 1884. He was educated at Fitch's Military Academy, Middletown, Conn., and began the work of a civil engineer the Farmington Canal. Subsequently he went to Pennsylvania, and was there employed on the Juniata Canal. In 1831 he was one of the engineers of the Delaware and Raritan Canal, in New Jersey, and in 1835 was engaged in building the railroad from Reading to Port Jervis. For several years following he was chiefly occupied in building railroads in Virginia, Pennsylvania, and North Carolina. In 1833 he was appointed engineer-in-chief of the Canal of Digna, which connects Magdalena river with the harbor of Cartagena, in Colombia. In 1879 Totten took the contract, in company with John Trautwein, for constructing the Panama Railroad. He was appointed engineer-in-chief of the work in 1870, and spent twenty years amid toils, privations, and sufferings of every kind, in this arduous task. In 1879 joined M. de Lesseps on the commission that went to the Isthmus to decide upon the canal project. Afterward he went to Venezuela and Colombia, and was appointed consulting engineer of the Panama Canal.

Webb, James Watson, an American journalist, born in Olaverock, N.Y., Feb. 8, 1802; died in New York city, June 7, 1884. He was educated at Oberlin, N. Y., and having a decided taste for military life, he obtained a appointment in his army for the purpose of entering upon journalism. That same year the "Morning Courier" was founded, and Webb became its editor. Two years later the "Enquirer," edited by Major Noah, came into Webb's hands, and henceforth the paper was known as the "Courier and Enquirer." It existed until 1861, when the "World" took its place. Mr. Webb's career as an editor was various and exciting. He supported Andrew Jackson, and afterward Nelson Young. He was concerned in several serious disputes, two or three of which culminated in duels. President Tyler nominated him for minister to Austria, but, owing to high prejudice against that empire, the nomination was not confirmed. President Lincoln appointed him minister to Brazil, which terminated his connection with the newspaper press, and this post he held until Gen. Grant's election. He returned from Brazil in 1869, and then spent some years in Europe. Williams, Samuel Wells, an American scholar, born in Utica, N.Y., Sept. 29, 1812; died in New Haven, Conn., Feb. 17, 1884. He was educated at the Rensselaer Polytechnic Institute, Troy. He went to Canton, China, in 1838, as printer to the American Board of Foreign Missions, did excellent service there, and edited the "Chinese Repository." In 1835 he printed, at Macao, Medhurst's "Hokkien Dictionary." He visited Japan in 1837, studied Japanese, and later translated the books of Genesis and St. Matthew into that language. In 1842 he published his "Easy Lessons in Chinese," and in 1844 his "Chinese Commercial Guide," and "English and Chinese Vocabulary." Mr. Williams came to the United States in 1845, and remained three years, engaged in lecturing. In 1848 he published "The Middle Kingdom," which gave his countrymen clearer and juster ideas of what the Chinese Empire really is. In 1848 he returned to China with a new font of type. He accompanied Commodore Perry, in 1853-54, to Japan, and served as interpreter to the expedition. He was also appointed secretary of legation. In 1856 he published another Chinese Dictionary, and assisted Minister Reed in negotiating a treaty. He revisited the United States in 1860-61, and returned to China the next year. In 1874 he brought out the great work of his life, "The Syllabic Dictionary of the Chinese Language." He came back finally to the United States in 1876. He received the degree of LL. D. from Union College, and was appointed Lecturer on Chinese at Yale College.

Weker, Henry Clay, an American song-writer, born in Middletown, Conn., Oct. 1, 1882; died in Hartford, Conn., June 8, 1884. While he was still a child the family removed to Illinois, where he received a common-school education. At the age of eleven he had become interested in Greek and Latin, and attempted the invention of a new language. In one scheme he used the English letters, and for another he invented a new alphabet. The difficulty of procuring writing-paper in his prairie home curtailed his attempts in the way of producing new literatures. A few years later he returned with the family to Connecticut, and was apprenticed to a printer. While working at the case, he found time to study harmony and to contribute to the poet's corner. For his first song, written at this time, he received twenty-five dollars. Afterward he became somewhat known as one of the few who can both write the words for a song and compose the music, and the excitement and enthusiasm of the civil war gave the best possible opportunity for the exercise of such powers. Among his most famous productions of that era are "Nico- demus the Slave" and "Marching Through Georgia." The most widely circulated of the latter
ones was “My Grandfather’s Clock.” Mr. Work was also an inventor, and patented a knitting-machine, a walking doll, and a rotary engine. He went abroad in 1865, and on his return invested the fortune that his songs had brought him in a fruit-raising enterprise at Vineland, N. J. The failure of this was followed by domestic sorrows, and for several years he was in retirement. In 1875 he became connected, as composer, with Mr. Cady, the music publisher, whose house had been the publisher of Work’s songs till the plate was destroyed in the great Chicago fire of 1871. After that his residence was in New York city.

OBITUARIES, FOREIGN. Alexander, Prince of Orange, the last male heir to the throne of Holland, born Aug. 25, 1851; died June 21, 1884. Always weak in health, gentle in disposition, and scholarly in his tastes, unlike his dissipated elder brother, who died before him, he avoided all society, living among his books and ornithological collections in the historical house of De Witt, which Motley occupied, at the Hague. The quarrel between his father and mother, which drove his brother into recklessness, excesses and a determined purpose to disgrace his royal station, plunged him into melancholy and gave him an aversion to marriage. After the death of his mother and brother, he became more of a recluse than before. In two pamphlets he explained the reasons for his way of life. The remarriage of King William completed the breach between father and son. Prince Alexander was the last descendant on the male side of the great house of Orange.

Alexander, Rev. William Lindsay, a Scottish clergyman, born in Edinburgh, Aug. 24, 1808; died at Pinkieburn, near Edinburgh, Dec. 21, 1898. He completed his studies at the University of St. Andrews, and became minister of a Congregational church in Edinburgh in 1835. He was made Professor of Theology to the Congregationalists of Scotland in 1854, Examiner in Philosophy of St. Andrews University in 1858, and a member of the Old Testament Revision Committee in 1870. His writings include “Congregational Lectures for 1840 on the Connection and Harmony of the Old and New Testament” (3d ed. 1863); “Anglo-Catholicism not Apostolical” (1844); “Christ and Christianity” (1864); “Life of Dr. Wardlaw” (1856); “Christian Thought and Work” (1862); and “St. Paul at Athens” (1865). He brought out the third edition of Kitto’s “Biblical Cyclopedia,” and was a frequent contributor to periodical literature. In 1876, when Dr. Alexander completed the fortieth year of his ministry, he was presented by his congregation and other friends with a princely testimonial. He had lived in retirement for the last three years.

Ampthill, Odo Russell, Baron, an English diplomatist, born in Florence, Feb. 20, 1829; died in Berlin, Aug. 25, 1884. He was sent to England by his father, Maj.-Gen. Lord George William Russell, for his education, and he began his diplomatic career as soon as Oxford, at the age of twenty. He served in Berlin, two in the Foreign (London, was sent by Lord Derby to 1853, and in 1854 to Constantinople; he was left in charge during the siege of Lord Stradflad de Redcliffe in the) 1857, in which post he remained until 1871, in which post he remained until 1871, in which post he remained until death, a favorite of the royal family, lary of the Crown Prince, and a cogent to the aristocratic and the literary of Berlin. For his services as a repres Great Britain at the Berlin Congress created a peer in 1881.

Bekker, Robert, Bishop of Ripon, Acton, in Suffolk, England, Aug. 24, 18 in Ripon, Yorkshire, April 15, 1884, graduated at Cambridge, with high honors, in 1841, and was ordained to his father at Sapocie, Leicestershire. After a rector of several parishes, he was in 1 pointed Canon Residentiary of Salis in 1856 was promoted to the See of Salisbury was a member of a family whose history goes back to the reign of the party that is loyal to English Pro ism. Zealous in good works, tolerant of opinions, gentle in temperament, and in his dealings with all men, he was su filled for so many years. He published Landmarks” (1880); “Lent Lectures” “Sermons” (1866), and numerous sermons and lectures on various subjects.

Bohn, John Henry, an English author born in Chelsea in 1823; died at his res Beverstone, in Gloucestershire, April 1 Among other works on ecclesiastical and doctrine, he wrote the “Directorium” the “Annotated Bible,” and of Common Prayer,” and a “History of Reformation.”

Bohn, Henry George, an English publisher, born in 1796; died in London, in August 1875, and was engaged in the book-trade, when he was a German traveler for his a a German bookseller established in London; he sold out his large business and in 1855. He became widely known as “Guinea Catalogue,” issued in 1841.
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MACKENZIE, WALTER FRANCIS MONTAGUE DOUGLAS SCOTT, a Duke of, born Nov. 25, 1806; died at Keith Palace, near Edinburgh, the place of birth, April 16, 1884. He was the eldest of the fourth duke, and succeeded to the title April 20, 1819. He received his education at Eton and at St. John’s College, Cambridge. He took an active part in the House of Lords as a Conservative, was Lord Privy Seal 1842-46, and was President of the Council of Robert Peel’s second administration. The Duke was well known as the friend of Sir Walter Scott and the Ettrick Shepherd, and as a good patron of art and literature. He was the best of the Scottish nobles, possessing half a million acres and the magnificent estates of wigtown, Drumalurg, and Dalkeith. Montague was, like his predecessor, one of the first to take the leading part in all that was going on in England. Throughout his long life he stood at the head of the class called by Disraeli “the high nobility.” Mr. Gladstone, ring his Midlothian campaign, invariably took the highest terms of eulogy in his opening speeches. He said, “He is in all respects what a British nobleman should be, and is all an example in the active and conscientious discharge of duty.” The Duke was succeeded by his eldest son, William Henry Wallace Scott, born Sept. 9, 1831, who for twenty years has been a member of Parliament.

JUNO, HENRY JAMES, an English dramatist, b. in Manchester in January, 1854; died in London, in July, 1884. He was the son of English consul at Port-au-Prince. He left the dramatic stage, and became one of the most successful English writers of the day. In depicting London vulgarity and humbug, he has been eminently successful. His masques are loosely constructed, and his mimic allegories are lively and cleverly contrived. Among his best works, “Carlyle’s Success” is one of the most thoughtfully and “Our Boys” the most successful.

IVORY, CHARLES STUART, an English author, b. in 1831; died in London, Feb. 17, 1884. He was a barrister in London, but gave his life largely to light literature, and was as a writer a lecturer at Cambridge. He published translations into English and Latin “(1866); verses and Translations” (1871); and “Flyires” (1872). The last-named were mainly stories of the style of well-known living authors, and were so exceedingly clever as to a parody almost a fine art. His books sold through many editions in England, and some containing all but the translations were published in New York. His rendition of Theocritus has been especially praised.

COTTON, ex-King of Zululand, died at Ekwos, of heart-disease, Feb. 8, 1884. (For the principal details of his life, as well as the “Annual Cyclopaedia” for 1893.) In the battle with Zululand, in 1888, he was wounded. The English arrested him on the neutral territory, and kept him a prisoner at Ekwos. He made several attempts to escape.

CROMER, THOMAS, an English journalist, born in the Barbadoes, in 1828; died in London, Feb. 8, 1884. He was educated at Oxford, was called to the bar, and was sent to Constantinople as correspondent of the London “Times.” He acquired a remarkable colloquial and philological knowledge of Oriental languages, and after his return to England, after the Crimean War, besides writing leading articles and reviews for the “Times,” he made translations from the Arabic and assisted in the revision of the Old Testament. In 1888 he became Professor of Arabic at Oxford. He still remained on the staff of the “Times,” and when Mr. Delane’s health failed, in 1887, succeeded him as editor.

COSTA, SIR MICHAEL, an Italian composer, born in Naples, Feb. 4, 1810; died in West Brighton, April 29, 1884. He composed operas and sacred pieces at a very early age. At the age of nineteen he went to England to conduct a cantata written by his master, Zingarelli, for the Birmingham Festival. The committee refused his services, but, remaining in England, he soon obtained an appointment as orchestral leader, and became the favorite conductor of orchestral and choral concerts. He did much to confirm the English admiration for Handel. Among his principal compositions are the oratorios “Elia” and “Nasaman.”

COWLEY, EARL, an English diplomat, born in 1804; died in London, in July, 1884. He was the son of Baron Cowley, the younger brother of the Duke of Wellington and the Marquess Wellesley. His life from his twentieth year was spent in the diplomatic service, in which he professed his father’s vocation. He succeeded in 1847. In 1857 he was made an earl. He was an attaché at Vienna in 1824, served in various grades at the Hague, Stutt- gart, Constantinople, and Frankfort, and was appointed Ambassador Extraordinary and Min- ister Plenipotentiary to France Feb. 15, 1855. In arranging the alliance and the plan of joint operations in the Crimean War, in the conclusion of the Treaty of Paris in 1856, where he was associated with Lord Clarendon, in the embattled Osiny affair of 1858, in the period of tension that followed the outbreak of the Hungarian War in 1859, after the failure of his attempted mediation, which became acute when France annexed Nice and Savoy, and in the negotiations in association with Ooblen of the reciprocity of 1860, by which the cordial relations between France and England were restored and strengthened,
Lord Cowley displayed diplomatic tact and skill of the highest order. The rejection of Napoleon's proposals for a congress in 1863 rests chiefly with Earl Russell. The Danish War, the Mexican Expedition, and the Austro-Prussian War of 1866, imposed new tasks on the British representative in Paris. He retired from the French embassy in 1867, and took no further part in public life.

Drayson, Johann Gustav, a German historian, born in Treptow, in Pomerania, July 6, 1808; died at Berlin, June 19, 1884. He was the son of a clergyman, and became a tutor in Berlin in 1883, made translations from Eschylus and Aristophanes, wrote a history of Alexander the Great and one of Greek civilization, became a professor at Kiel in 1840, and there took a prominent part in the agitation for the union of the Danish duchies with Germany. He was a member of the Frankfort Parliament, and reporter of the Committee on the Constitution. His patriotism led him to take up modern German history, and in 1846 he published lectures on the War of Deliverance. He was called to Jena in 1851, and about 1809 to Berlin. Besides numerous other treatises, he wrote a great work on the "Political History of Prussia," which he only brought down to the middle of Frederick the Great's reign.

Fleury, Emile Felix, a French general, born in Paris, Dec. 28, 1815; died Dec. 11, 1884. After squandering his patrimony, he gained rapid promotion in the Algerian corps of Spahis, and returning to France in 1848, became an ardent Bonapartist. He took part in the Kabyle expedition of 1851, and during the coup d'etat received a wound in the head. He was the efficient director of the imperial guard, was nominated a Senator in 1865, was sent on a confidential mission to King Victor Emmanuel in 1866, and in 1869 and until the fall of the empire, was an adjutant at St. Petersburg.

Hayward, Abraham, an English author, born in Lyme Regis, Oct. 81, 1802; died in London, Feb. 2, 1884. He was the son of a gentleman who was known as a writer on agriculture and horticulture, but in 1832 was called to the bar. He published a translation of the first part of "Faust" in 1838 (completed in 1847), and thereupon devoted himself more to literature than to law. He was especially noted for his brilliant essays. His works include: "Statutes founded on the Common Law Reports" (1833); a translation of Savigny's "Vocation of our Age for Legislation and Jurisprudence" (1839); "Law regarding Marriage with the Sister of a Deceased Wife" (1844); "Juridical Tracts" (1856); "Biographical and Critical Essays" (2 vols., 1858-73); "Autobiography, Letters, and Remains of Mrs. Piozzi" (2 vols., 1861); "Selections from the Diary of a Lady of Quality, from 1797 to 1844" (1864); and "More about Junius" (1868).

Hillebrand, Karl, a German author, born in Giessen, Sept. 17, 1829; died in Florence, Oct. 19, 1884. He was a son of the 1 Joseph Hillebrand, and studied law, berg and Giessen. He was condemned by a court-martial for participat insurrection in Baden in 1849, but France, passed through all the deg Paris University, and became a teac man at St. Cyr in 1853 and at Doh He wrote in French "On Good Com "Contemporary Prussia" (1867) Studies" (1867), and "On the Higher Education" (1869). Dri France as a German on the outb war, he went to Italy as correspon "Times," and settled in Florence, newspapers and reviews in France and German. His German ess selected in two volumes, entitled "1) "Times, Nations, and People."

Heeschel, Ferdinand von, a German born in Esslingen, in 1829; died Ju in Ober-Dobling, near Vienna. I son of a clergyman, and was educa same profession, but abandoned it fc sciences, receiving employment lological survey of Bohemia in 1855 geologist on the Norwegian exped his return in 1860, Professor of Mine Geology in the Vienna Polytechnic 1881 he took charge of the Royal : Natural History. His explorations Europe, and his discoveries pre main, are described in a series of w which have been translated into.

Horne, Richard Besant, an Engli born in London, in 1808; died Marc He was educated at the military Sandhurst, and served as an off Mexi naavy till the close of the depe. He traveled in the Un visiting many of the Indian tribe two years after his birth by an ac He was wrecked in the Gulf of St. and afterward sailed on a ship th from mutiny and fire. On his rett land, he devoted himself to literat With his adventures were publis an epic poem; of this he publish the price of one farthing, satire on the low estimation in wh was held. It has since gone throu 1892 he went to Aus William Howitz, where he held serv such as Commissioner of Gold 1 Mining Registrar. He was the swimmer of Australia, and won se in swimming contests there. On o occasions he was bound hand and also surpassed in athletic games. 1 the Melbourne Garrick Club, and there a large company for the mar win. In 1870 he returned to Eng publish ed works, which are very inc include "The Adventures of a L "The Good-natured Bear," "An of the False Medium, and Barrier
of Genius from the Public," "Gregory a tragedy; " A New Spirit of the Age," "Of Poets and People," "Ballads and Verses," "Judas Iscariot," a miracle-play; "Dreamer and the Worker," "Prometheus the Fire-Bringer;" a lyrical drama; "The Baptist, or the Valor of the Soul," "The Apocryphal Book of Job's Wife," as also a voluminous writer for periodicals. In 1881 he competed for the prize offered by the Spanish Academy for a poem on Caldeirao. Through some technical defect, the prize was not awarded, but the medal struck in his honor was presented to him.

John, an English musician, born in London, in 1820; died in February, 1884. He was of twenty years he became a student at the Royal Academy of Music, and he also studied the art of singing under Horace and ori.

In 1836 he brought out in London an essay entitled "The Village Coquettes," which was popular. Dickens wrote the libretto, and Charles Dickens wrote the libretto, and in the next two years he produced "The Tempest" and "The Actor of Basoon." In 1836 he undertook the task of improving and standardizing the method of teaching singing in London, and developed a plan that is now in use.

It is estimated that he taught vocal music to about 25,000 persons in twenty years. He was Professor of Vocal Music in King's College, Queen's College, and Bedford College, London, between 1844 and 1874, and from 1872 to 1883 he was inspector of music in training colleges in England and Scotland. In 1876 he published a book entitled "A Grammar of Harmony," "The History of Modern Music," and "The Transition of Musical History," besides essays.

Benzoni, William Blanchard, an English author, was born in London, in 1826; died there, March 10, 1886. He was the eldest son of Douglas Jerrold. He was educated partly in France, died art, and illustrated some of his father's works. When the London "Daily News" was ended, in 1846, he was one of the staff of "The Times," and wrote for it a series entitled "The Celebrity of the Poor." He also wrote much of his father's weekly paper, and in 1857 opened a shop for the editor of "Lloyd's." In 1838 he visited Paris to study the management of the newspaper. In 1879 he presided over the annual Congress of the International Literary Association in London. His numerous works include "Diaries of a Family," "The Progress of a Bill," "As Good as a Cucumber," a farce, "Chatterbox," "Scots, "Swedish Graves," "Imperial Paris," "The Chronicles of Crutch," "Two Lives," "Up and Down in the World," "On the Boulevards," "The Christian Vagabond," and lives of Douglas Jerrold, George Cruikshank, and Napoleon III.

Klingert, Wilhelm, a German astronomer, born in Hofheim, March 29, 1827; died by his own hand in Göttingen, Jan. 20, 1884. After leaving the Polytechnic School at Cassel, he was employed as a surveyor until he took up the study of astronomy at Göttingen under Gauss, whom he succeeded as director of the observatory. He wrote "Theoretical Astronomy," and many other works on this subject and on meteorology, in which he was equally an authority. He invented a hygrometer, and was the organizer of the system of daily meteorological observations in Germany, though the imperfect indications of the hygrometer for predicting the approach of rain brought the system into disrepute.

Lauret, Paul, known as "Bibliophile Jacob," a French author, born in Paris in 1807; died in October, 1884. He wrote a series of fictitious memoirs of historical personages, followed by a history of the sixteenth century, in 1885, and histories of French society in the seventeenth and eighteenth centuries and under the Directory, and a great number of other writings of antiquarian interest.

Laube, Heinrich, a German political author and dramatist, born in Spottan, in Silesia, Sept. 18, 1806; died in Vienna, Aug. 1, 1884. He went to Halle a poor theological student, where he was carried away with the political ideas of the time and with the pleasures of student-life. He was sent away to Breslau on account of his suspected connection with the students' societies, and soon joined the band of political enthusiasts in Leipsic, and became a journalist of note and a daring advocate of the new ideas. Banished from Saxony in 1834, he rashly went to Berlin, where he was kept nine months in jail, then subjected to a long examination, during which he was placed under police surveillance at Naumburg, and finally sentenced to a year's imprisonment. Influential friends obtained a relaxation of the sentence, which enabled him to serve out the term pleasantly with his wife, whom he married in 1837, on the estate of Count Pekker at Muskau. Laube was the last survivor of the group of political reformers known as Young Germany, of which he was the boldest and the most radical representative. He published two volumes of political essays, entitled "The New Century," in 1832 and 1833, and in the next four years his novel of "Young Europe," besides many shorter tales. The success of his "Karlschul" in 1848 led to his appointment the following year as director of the Vienna Court Theatre. In 1849 he was elected to the Frankfort Parliament from a Bohemian town, but soon resigned. The political situation is described in his book on "The First German Parliament." Among his most successful plays are "Strenuo," "Graf Essex," "Cato von Eisen," "Mon-
trose," and "Viel Feind! viel Ehr." As a theatrical manager he displayed executive energy, fine discernment, invention, and enterprise. He left the Royal Theatre in 1867 to found a new theatre with liberal tendencies and aims. The handsome Stadttheater which he built was destroyed by the tragic fire in which many Vienna people lost their lives.

Leopold, George Duncan Albert, Prince of Albany, youngest son of Queen Victoria of England, born April 7, 1839; died in Cannes, March 27, 1894. He was weak from his birth, and incapable of vigorous physical exercise or intense application to study, yet he possessed an active mind, a lively fancy, a remarkable memory, and a strong love of knowledge. With these qualities he acquired from men and books a large fund of information, a special acquaintance with history, and an easy familiarity with modern languages. His early education was conducted in German as much as in English. As a student at Oxford and in his residence at Boyton Manor, and later at Claremont Castle, he was agreeable and hospitable. He traveled much on the Continent, and (the year before he was called to the House of Lords as Duke of Albany, Earl of Clarence, and Baron Wicklow) in Canada and the United States. He often presided at the laying of corner-stones and the opening of schools, hospitals, and other charitable institutions, and hoped to be active like his father in the encouragement of art, education, and social reform. He wished in his last years to play a political rôle as Canadian Viceroy or Governor of Victoria, but the objections of the Government and the anxiety of his mother for his health obliged him to give up such hopes. He married, April 27, 1883, Princess Helen of Waldeck. He was ordered to Cannes by his physician in March, 1884, where, entering too eagerly into the social pleasures of the place, he died of a stroke of apoplexy.

Lepage, Bastien, a French painter, born in Damvilliers, Nov. 1, 1848; died Dec. 10, 1884. He entered the public service, but left it to devote himself to art. He painted the nude and began exhibiting in 1871 the rustic scenes for which he became famous. Among his works are "In the Spring," exhibited in 1873, "The Song of Spring," "Portait of my Grandfather," and many life-like portraits in the impressionist manner.

Lepsius, Karl Richard, a German Egyptologist, born in Naumburg, Dec. 23, 1810; died in Berlin, July 10, 1884. He became absorbed in Egyptian studies at the Berlin University, and in 1829 was appointed to conduct a scientific expedition to Egypt, where he was engaged in deciphering inscriptions and collecting art-remains for the Berlin Museum until 1846. After his return he became a professor in the Berlin University and Director of the Egyptian Museum, which he founded. No scholar has done more than Lepsius for the reconstruction of the Egyptian language.

Maria Anna, Empress of Austria, born Sept. 19, 1803; died May 5, 1884. She was the daughter of King Victor Emanuel I of Sardinia, and the last descendant of the elder line of the house of Savoy. Her marriage to the Archduke Ferdinand took place in Vienna, Feb. 17, 1851. He succeeded to the throne March 2, 1855. After his abdication, Dec. 2, 1848, they took up their residence in Prague, where the ex-Empress devoted herself to works of charity, and especially to encouraging in Bohemia female orders for the care of the sick and the education of girls.

Markovic, Bozidar, a Russian novelist, born in 1856; died in St. Petersburg, Nov. 20, 1884. He was at first a writer of reviews and of society verses, and published in the last ten years of his life a series of powerful novels dealing with the political conditions of Russian society in the successive periods since the reign of Nicholas, written in an easy style, after French models, and liberal but not revolutionary in tendency. They are entitled "A Forgotten Question," "A Quarter of a Century ago," "The Crisis," "The Abyss," portraying the rise of nihilism, was left unfinished.

Midhat Pascha, a Turkish statesman, born in Constantinople in 1822; died in the autumn of 1884. He was the son of a civil judge. After serving as a confidential agent for investigating the Congress of Berlin, he was appointed director of confidential reports. He was dispatched to the Asiatic provinces to investigate the collection of taxes, was recalled to Constantinople and in 1869 made Governor of Bulgaria. Visiting European capitals to study constitutional forms, he introduced reforms in various districts, and in 1860 induced the Sultan to extend them to the whole empire. It was appointed Governor of the Vilayet of the Danube in 1864, and conducted public works, and hoped to reconcile the Bulgarians to Turkish rule. In 1866 he was recalled to preside over the Council of State. Sent to suppress a revolt in Bulgaria and then to quell a disturbance at Bagdad, he succeeded by resolution and severe means. Returning to Constantinople, he warned Abdul Aziz of an attempt to change the succession. Mahmoud Nedim and his colleagues were dismissed, and Midhat was appointed Grand Vizier. But he was soon disgraced. He was
Grand Vizier again when the present came to the throne, and inaugurated Parliament. Suddenly he was arrested, and tried for the murder of Sultan Abdul Aziz, convicted, and sentenced to banishment.

Francis, a French historian, born in 1796; died in Paris, March 24, 1854, a precocious student, and soon after he entered the bar, in 1818, won a prize of demie des Inscriptions for an historical account. With his friend Thiara, he entered on a successful career in Paris. They each set about the same time on a history of the Revolution. Mignet's appeared in 1817, and once attained a striking success, righted upon its author the eminence of the age. It was the first successful vindication of the Revolution, and, as Guizot said, the dead to life again to contend the restoration in conjunction with the new generation. He attacked in under the veil of historic parallels and lectures, until the hall was closed by the authorities. After the Revolution of 1830, Mignet conducted a delicate diplomatic mission in Spain, receiving as a reward a place in the state archives in Madrid. He had written the "Napoleonic Code" of 1814, which was the history of the Napoleonic period. The work was published in the "Historical Memoirs," the other side of the "History of the Revolution". Under the reign of Louis XVI, the only reward he would accept for his services in bringing about the July Revolution was dismissal as a poet. His "History of Charles V's Abdication" and "Le Monarchie et la Mort de St. Louis" were published in 1834, under his name at the beginning of the American Civil War. Mignet's style is held up as lucid, vigorous, melodious, and highly condensed, in his later works somewhat dry and Engrossed in study, he shunned solicited his opportunities to take a part in public life, and cared little for popularity. His ship with Thiers was kept up until his death. As an historian he was fond of organization, and took a sweeping view of the progress of civilization, which caused him to appreciate the results of practical politics. The Third Republic as well as the Third Empire, Mignet was elected to the French Academy in 1836, and was the oldest member when he died.

Mohammed Sultan Pasha, President of the Egyptian Parliament, died in Gratz, Aug. 18, 1894. He was a fellah, and acquired a large landed estate. He first became prominent when he led the opposition of the Notables to Mahmoud Sami and Arabi Pasha in 1882. He died suddenly while returning from a trip to Europe.

Moigno, Abbé François-Napoléon Marie, a French mathematician, born in Guéméné-sur-Scorff (Morbihan), April 15, 1804; died at St. Denis, July 18, 1884. He studied at the College of Pontivy and under the Jesuits at Ste. Anne d'Auray. His remarkable talents and great ability as a mathematician were early developed; but, pleased by the anetere and laborious life of the Jesuits, he applied for admission to the order, and in 1823 began his theological studies at the seminary of Montrouge. Six years later, after a brilliant examination, he received the degree of Doctor of Theology, and was assigned to the professorship of Philosophy and Theology. During the following years he was able to gratify his early fondness for the exact sciences, and studied under the most eminent teachers. His religious duties, however, were not neglected, as many brilliant discourses delivered at different seasons and in various churches testify. In 1836 he was called to fill the chair of Mathematics at the Jesuit College (Rue des Postes) in Paris, and soon afterward, a normal school having been established for the clergy, mathematics and physical sciences were placed under his direction. During this period he published his "Leçons de Calcul différentiel et intégral," "Le Calcul des Variations," "La Mécanique analytique," and "Le Répertoire d'Optique Moderne." His work, although of such character as to win the respect of the scientific world, failed to secure the approbation of his ecclesiastical superiors, and in 1848 he withdrew from the order of Jesuits. Days of want followed, and his only means of support were the few scientific articles that he wrote from his little apartment in the Quartier Latin. In 1845 Émile de Girardin, having recently established "L'Époque," commissioned Moigno to prepare a series of scientific articles for that journal, and in consequence he traveled throughout Europe, meeting at the different capitals the most prominent scientists of his time. Returning to Paris, he published the "Traité de la Télécographie électrique," the first work of this kind to appear in France, and one that for a long time remained the standard authority on the subject. Several years of religious difficulty followed, during which, for short periods only, was he allowed to hold positions in the Church. His writings continued, however, and he was connected with various short-lived scientific publications. In 1852 M. de Monfort founded a weekly scientific journal entitled "Cosmos," the editorship of which was at once entrusted to Moigno,
and this post he continued to occupy until a short time before his death, with the exception of some time between 1892 and 1871. During this period he edited "Les Mondes," and in 1871 the two journals were united under the title "Cosmos les Mondes." More than one hundred volumes on scientific subjects are credited to him, besides the twenty-one volumes of the "Cosmos" and fifty-eight of "Les Mondes." Among his works, in addition to those mentioned, are "Mémoirs sur le Stéréoscope et le Saccharimètre," "Les Éclairages modernes," "Les Agents Explosifs," and excellent translations of Tyndall's works on the sun, on light, and on heat. He edited and published a series of works called "Actualités Scientifiques," several of which, such as "La Minérotechnie," were written by himself. His most important publication was "Les Splendeurs de la Foi" (5 vols., 8vo, 1879). This was supplemented by "Les Splendeurs de la Foi, illustrées." The French Government in 1872 appointed him Canon to the Chapter of St. Denis, and during the same year he was again received into the order of Jesuits. He held many honors, and was widely known as well as universally respected. An elaborate biographical sketch of him appeared in "Cosmos les Mondes" of July 19, 1884.

Menas, Jean Ignace, Cardinal, Archbishop of Toledo, born in Guatemala in 1817; died in 1884. He was educated in Spain for a Franciscan monk, but, after the expropriation of the monasteries in 1839, entered the regular priesthood in 1842. He returned to Spain from Cuba and South America, where he had labored as a missionary, and was appointed royal chaplain and confessor to Queen Isabella, became Bishop of Valladolid in 1865, and received a cardinal's hat in 1868. When the primacy became vacant, he succeeded to it.

Nerses, Armenian Patriarch, born in 1834; died in Constantinople, Nov. 8, 1884. He was educated for the priesthood in Adrianople, was made Bishop of Sirs for his services in allaying the revolt in Zeitoun, was commissioner of the Turkish Armenians at the election of the Catholicos George IV, and was chosen Patriarch of Constantinople in 1874. He struggled for the emancipation of the Armenian peasants in Anatolia from their Kurdish landlords. His conflict with the Kurds and with tyrannical pashas brought him frequently into collision with the Porte, which failed to recognize his services in keeping the Armenian nation from embracing the cause of Russia in the Russo-Turkish War. Elected Catholicos of Etchmiadzin in 1884, he made his acceptance conditional on the abolition of the Russian statute that places Turkish Armenians at a disadvantage. During his conflicts with the Porte he often offered his resignation. Shortly before his death, he resigned in earnest, on account of the abrogation of the autonomous privileges of the Armenians.

Pahlen, Count Nicholas, born in Revel, Russia, in April, 1788; died in Cannes, Dec. 6, 1884. He was a son of Gen. Count Pahlen, who was the leader of the conspiracy against the Emperor Paul. On the completion of his course at the university, he in 1810 accompanied his elder brother, the Russian minister, to the United States. He visited Jefferson at Monticello and John Adams at Quincy, and was well acquainted with Madison and all the members of his Cabinet. For seventy years he resided in the various capitals of Europe, and knew intimately many of the most eminent men of the century. He was a person of fortune, who never held any office, but was believed to be one of the many secret agents employed by his Government. This venerable man always enjoyed good health, and at length passed away without any other malady than old age.

Pattison, Mark, an English scholar and author, born in Hornby, Yorkshire, in 1818; died July 30, 1884. He was graduated at Oriel College, Oxford, in 1834. In 1840 he was elected Fellow of Lincoln College, Oxford, and took des- con's orders. In 1861 he became rector of his college, and trustee of the Crew Charities. He was classical examiner of the university in 1848 and 1853, and assistant commissioner to inquire into elementary education in Germany. His later years were devoted purely to literary and philosophical writing. Among his works are: "Tendencies of Religious Thought in England, 1838-1750," (1860); "Annotations on Pope's Essay on Man" (1863); "Annotations on Pope's Satires and Epistles" (1871); "Life of Isaac Casaubon" (1875); "Life of Milton" (1880); "Milton's Sonnets, with Notes" (1883). His "Life and Letters" was announced for publication in 1886. His wife, Emilia Frances Strong, was a daughter of Col. Strong of the Madras army. She was critic for the "Academy," and in 1879 published "The Renaissance of Art in France" (2 vols., illus.).

Pogge, Dr. Paul, a German explorer; died in St. Paul de Loanda, March 17, 1884. His travels in the Loanda country in 1875 gave him a reputation. In 1881 he returned with Lieut. Wis- mann to embark the Gonga region from Lourenco Marques. They penetrated to Nyangwe after exploring Lake Lincoln, and then Pogge returned and spent some time in the Lulua and Casal regions, while Wismann crossed the continent.

Preit, Giovanni, an Italian poet, born in the Italian Tyrol, Jan. 27, 1815; died in Rome, May 9, 1884. He studied in Trent and in Padua, where he published his first poems, which at once captivated Italy with their lyric movement and harmonious style. His inspirations gradually deserted him, partly in consequence of his hard treatment at the hands of the Republicans of Venice and Florence in 1848. For his attachment to the Savoy dynasty they im- peded and abused him, threw him into prison, and finally sent him into exile. The old fire and grace marked the productions of his last period, when he was honored as the lastest
monarchy and sang the praises of the
King and of the authors of Italian unity,
in his political poems, Prati presented
zation of human nature in his "Ed-
la," "Armando," and other creations.
Adria Ludwig, a German artist, born
in, Sept. 28, 1803; died June 19, 1884,
ed drawing and engraving from his
study art in Rome. For forty
was a landscape-painter and professor
arch in the Dresden Art Academy. He
missioned by the publisher Wigand to
series of the German legendary tales,
ed himself from that time to figure
and became the most successful illus-
Germany. His sketches of the homely
people were even more popular than
ations of the German classes. Lud-
ter drew in few and strong lines, like
ner, and revived that master's style
giving the impulse to Hugo
and his school.
Bey, an English Orientalist and an of-
the Egyptian Government, born in
ed in Cairo, June 10, 1884. As
British consul in Damascus and
became the Kehlide's representative
and subsequently Under-Minister
Inspector of Prisons, and Di-
the Scales of Public Lands. He pub-
onographs on Egyptian heraldry and
ins, and was the leading member of
mission for the preservation of monu-
Cairo.
Johann Jakob, a Swiss poet, born in
1839; died in September, 1884. He
ated for the law, and then for the
profession, received a commission in
ral army, served in the Crimean War
Regia Legion raised by Great Britain,
is role in the Crimean war, and
by turns. He published "Ost und
is first collection of poems, in 1851,
d five volumes of novels and legends
name of "Bergcrystall," and
in pamphlets on his birthplace. His
fe full of patriotic enthusiasm for the
countries, and contain graphic descrip-
ture and touches of human feeling.
Robert Augus, ex-minister of Napoleon III,
Rome, Nov. 10, 1814; died Feb. 9,
et the naval school at Angou-
1828, subsequently studied law, de-
Liberal editor, and was a candidate
ization's auspices for the Chamber in
he was elected in 1848 as an enthu-
sublignant to the Constituent Assembly,
later to the Legislative Assembly,
eated Cavaignac, and then became a
of Louis Napoleon, who chose him
of Cabinet when he broke with the
Barrot ministry of the parliamentary
in October, 1849. Until the fall of
he, Rouher almost uninterruptedly re-
minster. He resigned the portfolio of
an. 94, 1851, and after the soup d'état
received it again December 2. The confiscation
of the estates of the Orleans princes led him
to resign, but he returned as Minister of Fi-
nance in 1855. In 1860 he concluded the fa-
mous treaty of commerce with England. From
1863 he took the first part in the Government,
and was dubbed the "Vice Emperor." Against
Favre, Brrrey, and Thiers he had to defend
the policy of the Government in the Mexican,
Schleswig-Holstein, and Roman complications.
When the Opposition returned in greater force
after the election of 1869, Napoleon dismissed
the Rouher ministry, July 13. In 1871 Rouher
was elected to the National Assembly from
Corsica, and took the lead of the Bonapartists,
with a cry for a plébiscite. He was elected
later from Riom, and remained the leader of
the party and the adviser of the ex-Empress
until the death of the Prince Imperial.
Schmidt, J. F. Julius, a German astronomer,
born in Eutin, Oct. 26, 1825; died in Athens,
Feb. 7, 1884. He was attracted to the subject
of astronomy in childhood, and passed his
whole life in observatories. For thirty-five
years he labored on a map of the moon. His
observations of shooting-stars, the zodiacal
light, and variable stars were valuable; also his
studies in seismology and of the volcanoes of
the south of Europe. He was for many years
director of the observatory at Athens.
Sella, Quintino, an Italian statesman, born in
Biella, July 7, 1827; died there, March 14, 1884.
He studied in the Turin University and in the
Paris School of Mines, and, after traveling
abroad for several years, settled as a teacher in
the Mining Academy at Turin. In 1881 De
Sanctis, Minister of Instruction in the first Ca-
voir Cabinet, made him his secretary-general.
From March 3 to Dec. 8, 1882, Sella held the
portfolio of Finance in the Rattazzi ministry,
and also under La Marmora, from Sept. 28,
Dec. 31, 1885. He was again Minister of Finance from Dec. 14, 1889, to July 10,
1873, in the Lanza Cabinet, of which he was
the intellectual head. After the withdrawal
of the French troops from Rome in 1870, the Left
called upon the Government to take possession
of the Papal dominions. The ministers re-
used, whereupon the Liberal leaders prepared
a proclamation calling for popular action. Sel-
a persuaded them to wait, and finally over-
came the scruples of his colleagues. After
the battle of Sedan the Italian troops occupied
Rome, and the temporal sovereignty of the
Pope was extinguished in the ancient capital.
Sella was not less distinguished in science, es-
specially in geology, than as a statesman.
Smith, Robert Angus, an English chemist, born
near Glasgow, in 1817; died at Colwyn Bay,
May 11, 1884. Dr. Smith was educated at the
grammar-school and at the University of Glas-
gow. His early fondness was for classical
study, and on leaving the university he became
a tutor. In 1839 he left England, and studied
chemistry under Liebig at the University of Gies-
bon. Hofmann, Will, and Fresenius, names that
are now foremost in the chemical world, were at that time assistants in the laboratory. After two years spent in study and research at the German university, Smith returned to England in 1841. Shortly afterward he became assistant to Dr. Lyon Playfair, who had preceded him at Giesean, and who was at that time engaged in a sanitary commission. This occupation proved to be the starting-point of those researches in sanitary science for which Dr. Smith subsequently became so celebrated. His first paper was published in the “Journal of the Chemical Society,” in 1846. Two years later, at the meeting of the British Association at Swansea, he read an important paper, “On the Air and Water of Towns.” Soon after this, two memoirs, each “On the Air of Towns,” and the other “On the Air and Rain of Manchester,” were published, both of which were of great sanitary value, as they called attention to subjects that thus far had been almost entirely neglected. His reputation as an authority on sanitary matters having become fully established, numerous papers, on such subjects as “Sewage and Insanitary Rivers,” “Disinfectants,” “Putrefaction in Food,” etc., were contributed by him to the “Journal of the Chemical Society,” the “Journal of the Society of Arts,” and the “Journal of the Philosophical Society of Manchester.” In 1854 he published a valuable “History of the Atomic Theory, and Memoir of Dalton,” a work of very great value at that time. In 1863 he was appointed Inspector-General of the Alkali-Works. His annual reports, many of which contain special papers written by himself, are highly valued. His “Report on the Air of Mines and Confined Places” (1864) was an important contribution to sanitary science, and contained many valuable facts relating to ventilation. Among his larger works are “‘Disinfectants and Disinfection” (1869), “Air and Rain” (1872), “Chemical and Physical Researches of Graham” (1875), and “A Centenary of Science in Manchester.” Several essays and works of antiquarian interest were published by him; one of the last being a volume entitled “Loch Etive and the Sons of Uisnach,” which appeared anonymously. Dr. Smith was elected a Fellow of the Royal Society in 1857; he was a corresponding member of the Royal Bavarian Academy, and Vice-President of the London Chemical Society, of the Literary and Philosophical Society of Manchester, and of the Institute of Chemistry. He assisted in the Jury of the International Exhibition at London in 1862, and of the French Exhibition held at Paris in 1878.

Someret, Jane Georgiana, Duchess of, the youngest of the three beautiful daughters of Thomas Sheridan, the son of the orator and dramatist Richard Brinsley Sheridan, born in London, March 10, 1810; died there, Dec. 14, 1884. She married, June 10, 1830, Edward Adolphus, Lord Seymour, who succeeded his father as the thirteenth Duke of Somerset, Aug. 18, 1855. Lady Seymour presided at the annual and annual beauty at the famous Eglington Tournament.

The issue of the marriage consisted of two sons and three daughters. The eldest son died in 1861, married, and the second son was accidentally killed in 1865. The Duchess’s sisters were Misses Dufferin, mother of the present Governor-General of India, and Mrs. Caroline Norton, poetess, whose second husband was Sir William Stirling Maxwell. The Duchess was a woman of many accomplishments, and the friend of men of letters.

Stang, Frederik, a Norwegian statesman, born 1812; died June 10, 1884. He was the leader of the Conservative party, and took a part in the constitutional struggle that was in the impeachment and dismissal of the Cabinet. After taking his degree at the University of Christiania, he became a Professor of Civil Law, and won distinction at the bar; was appointed a Councillor of State in 1880, and remained in office, most of the time the head of the Government, until 1880.

Strehlberg, August von, a German financier, died May 31, 1884. After a long experience in England and the United States, as a merchant, journalist, and lawyer, he returned to Berlin in 1885 as agent for an English insurance company, and legal adviser to the British embassy. In 1861 he obtained the contract for the construction of a railroad, as agent for an English company. He secured capital and credit enough to take contracts to build the Prussian railroads on his own account, and then Hungarian, Austrian, Roumanian, and Russian railroads. He bought mines, furnaces, and locomotive-works, built up towns for his laborers in Germany, Holland, and Belgium, and became the largest employer in the world. He took up enormous capital, not only in his mines and industrial establishments, but in the purchase and improvement of numerous estates, in building in Berlin, particularly his palace in the market, and in restoring the old royal castle, and improving the mines and forests at Zlurow in Bohemia. The loss of 20,000,000 florins in the Austrian railroads, the stoppage of his business in consequence of the war of 1870, the expiration of the Roumanian railroads, and the settlement for 6,000,000 thalers, the depression of 1873, and the competition of rival establishments after 1875, left him irretrievably bankrupt. He was arrested in Moscow, and sentenced to transportation for swindling, but obtained his liberty again the following year, and returned to Berlin, where he published his autobiography. He also published a newspaper, and at the time of his death was writing a work on political and literary subjects.

Sullivan, Alexander Martin, an Irish politician, born in Castletown in 1809; died at Partry in August, 1844. He was of peasant birth, and attended only the elementary schools. He was an etcher and wood-engraver in Dublin, and
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itor to the "Nation" newspaper in 1855, he became editor and critic, born March 23, 1809; died Jan. 14, 1884. He studied law, but turned to the more congenial pursuit of literature, writing on the ancient historians and Greek poetry, and then a philosophical analysis of Shakespeare's plays. In the first edition (1839) he attributed to the dramatist a deep religious and ethical purpose; in the last (1868) it was as a microcosm of human life and passion that the poet's dramas were conceived, each one being given its due place in a cycle covering the whole range of human feeling. In all his writings on literature and art, Shakespeare was glorified as the inspired poet of humanity. Ulrici published a critique on Hegel's philosophy in 1841, a comprehensive work on the fundamental principle of philosophy in 1846 and 1847, a "System of Logic," a work entitled "Faith and Knowledge" in 1858, and subsequently "God and Nature" and "God and Man." The aim of his philosophical studies was to establish an idealistic and theological basis for positive science. In 1878 he published a collection of essays on the history of art. Ulrici was called from Berlin to Halle as an extraordinary professor in 1884, and thirty years later was appointed Professor of Philosophy and Art History.

Vare, Gennaro Battista, an Italian statesman, born in Venice, in 1817; died April 20, 1884. He labored with Daniel Manin in preparing the revolution at Venice in 1848, and, after the downfall of the Venetian Government, continued the agitation against Austria from Switzerland, until he was expelled in 1851. Returning later to Piedmont, he practiced law. On the liberation of the Venetian provinces in 1866, he was elected to Parliament. In July, 1879, he was appointed Minister of Peace and Justice in the second Cairoli ministry.

Watson, Henry, an English chemist, born in London, Jan. 20, 1815; died there June 30, 1884. He was educated first at a private school in London, where he received excellent elementary instruction in physics and chemistry, a circumstance unusual at that time. He became a teacher, and attended lectures at University College, London, and in 1841 was graduated as Bachelor of Arts. In 1848 he entered the Birkbeck Laboratory of Chemistry, then recently established at University College, as assistant to the late Prof. Fownes, and in that capacity directed the work of the students. He was unable to obtain a professorship, on account of his being incapacitated for lecturing by an incurable impediment in his speech, and for this reason he was ultimately induced to devote himself entirely to the literature of chemistry. In 1848 he was engaged by the Cavendish Society to prepare a translation, with additions, of the great "Handbuch der Chemie" of Leopold Gayler, a work that extended to eighteen volumes, and occupied a portion of his time for twenty years. The first
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volume appeared in 1849, while the last, with the index, was not published until 1872. In 1868 Mr. Watts was engaged to prepare a new edition of Ure's "Dictionary of Chemistry and Mineralogy," but finding that this book, the last edition of which appeared in 1831, had fallen too much behind the existing state of chemistry to be made the groundwork of a dictionary adapted to the requirements of the time, he undertook, with the consent of the publishers and the assistance of a staff of contributors, the compilation of a new "Dictionary of Chemistry and the Allied Branches of other Sciences." This work (5 vols. 8vo) was completed in 1868; but as additions were required to keep it abreast of the continual advances of science, a supplementary volume was published in 1873, a second supplement in 1875, and a third (in two parts) in 1879 and 1881. At the time of his death he was preparing a new and abridged edition of this work. Mr. Watts also edited and largely added to the second volume of the late Prof. Graham's "Elements of Chemistry" (1858). Three editions of Fownes's "Manual of Chemistry" were edited and revised by him, the tenth published in 1888, the eleventh in 1873, and the twelfth in 1877. A thirteenth edition was also prepared by him, the first volume of which had appeared at the time of his death, while he left the second in manuscript. He was co-editor with Dr. Richardson of the "Richardson and Watts Chemical Technology" (5 vols. 8vo), and a new edition of this work was being prepared under his supervision. He was appointed editor of the "Journal of the Chemical Society" (London) in 1860, and was made librarian to the same organization in 1861. He was elected a Fellow of the Chemical Society in 1847, a Fellow of the Royal Society in 1866, and a member of the Physical Society in 1879.

Wellingt, Arthur Richard, second Duke of, born in North America; died in Brighton, Aug. 18, 1884. He was the eldest son of the great soldier. With his younger brother, Lord Charles Wellesley, he was educated at Eton. For some not very serious scamps, in which the young Marquis and his brother became involved, the old Duke advised a sound flogging, adding, in his letter to the master, "and I will ride over and see that it is properly administered," which he did. From Eton Lord Douro went to Trinity College, Cambridge, and in 1828 he entered the rifle brigade. In 1834 he became colonel. From 1842 to 1852 he was aide-de-camp to his father, then commander-in-chief of the British army, and in 1862 he was appointed lieutenant-general. For some time before this the Duke, who succeeded to the title in 1852, had been known as one of the most active advocates of the volunteer movement, and was lieutenant-colonel of the Victoria Rifles. He was for a time a member of the House of Commons, but never took part in debate, and was Master of the Horse under the late Lord Derby. Much of his time during the last two decades long life was devoted to editing the well-dispatches, correspondence, and public recognized by the Duke's memory by erecting on the of Strathfieldsaye, near Reading, a lofty inscribed stone granite, nearly one hundred feet high, surmounted by a noble marble statue of Wellington by Marochetti. On the of his father's favorite charger he put in 1880 a fine monument, with this inscription from his own pen:

Here lies Copenhagen, the horse ridden by it of Wellington the entire day of the battle of A. Born 1808, died 1882.

God's instrument, though meaner clay, Should share the glories of that glorious

The second Duke was an accomplished statesman, and in his advanced years, when he was growing dull and his eyesight all but gone, amused his leisure hours at Strathfieldsaye by translations from Homer to the Greek of German and French, and also by the composition of graceful verse. When urged by a friend to gather his thoughts for publication, he declined, "There is something contemptible about meetering a duke." His memory was extraordinary, and held unaffectedly to every event connected with English history during the nineteenth century. As a conversationalist, the Duke had few superiors, combining his charming talk good powers of imparting admirable gifts as a raconteur. The Duke loved his London home, and visited it each year in the spring, and in 1881 he was in London, when the news of the death of his father reached him. He was a great admirer of the Duke of Wellington, and was always ready to defend him against the attacks of his enemies. When he died at his castle at Silesia, Nov. 17, 1888, ascended the throne April 26, 1831, after people had driven out his brother and refused to recognize the Constitution of Under his reign, feudal institutions were abolished, and Brunswick became one of the most progressive and prosperous of the states. The Duke always observed the constitutional limitations, and was a popular monarch. When the people demanded a Constitution in 1848, he resisted at first, but was finally prevailed upon. He was succeeded by his eldest son, who died at 25, 1831, at his castle in Silesia, Oct. 17, 1888.
nious pleasures, and frequent absences in Asia and Vienna, and complained because he did not marry. He hoped in early life to come the consort of Queen Victoria, and consequently he negotiated for a marriage several times, but was circumvented by intrigues.

The interest of the Hanoverian Guelphs, for this reason, probably, he never would have intercourse with any of the princely houses of Germany. The Prussian court also disdainfully avoided, though in 1866 he followed the suggestions of his counselors andrew in his lot with the North German Bund.

Wurtz, Sir James Erasmus, a British physician, was in Aberdeen, Scotland, April 28, 1809; and at Westgate-on-the-Sea, Aug. 8, 1884. He died anatomy and medicine in London and Aberdeen. In 1851 he became a member of the Royal College of Surgeons, ten years or one of the council, and in 1881 president. 1869 he founded, at his own expense, the and Museum of Dermatology in the College of Surgeons, and was elected the first professor. He also instituted the Chair of Pathology in the University of Aberdeen. Wilt's renown was definitely consummated when took skin-diseases as his specialty, and published a paper on the subject, which has passed through numerous English and American publications since its first appearance in 1842. His fame on “Diseases of the Skin” was followed by many other medical works and contributions in medical journals. He was sincerely religious, charitable, and for his numerous benefactions in restoring churches, establishing hospitals, and other acts of bounty, was knighted in 1851. At that period Sir Erasmus gained national fame of a new kind by transporting at own cost the Egyptian obelisk that now stands the city of London. Among the many honors conferred on him was that of LL. D., the University of Cambridge, Vice-President of the Society of Biblical Archæology, President of the Egyptian Exploration Fund. As residuary legatee, the College of Surgeons, London, of which he was president, received, on the death of his widow, the sum of $1,000,000.

Wurtz, Charles Adolphe, a French chemist, born Wollfsheim, near Strasburg, Nov. 26, 1817; died in Paris, May 12, 1884. He was the son of a Protestant clergyman, and received his early education at the Protestant Gymnasium at Strasburg. He then devoted his attention to medicine, and in 1843 received the doctor's degree from the medical school at Strasburg. He was also acting as instructor in chemistry in 1839 to 1844. Removing to Paris, he became associated with Dumas, and in 1846 was placed in charge of the chemical department of the École Central des Arts et Ménagères. In 1851 he was made Professor of Chemistry at the Versailles Agricultural Institute. He was called to the chair of Chemistry he Faculty of Medicine in 1858, and in 1866 appointed Dean of the Faculty. A chair in Organic Chemistry was specially created for him in 1875 at the Sorbonne. His lectures at this institution continued up to the time of his death. Prof. Wurtz's scientific researches were many and important. No problem that he ever took up remained unsolved. Seventy-three memoirs are credited to him in the catalogue of the Royal Society in 1864, and after that his industry was certainly not diminished. Three discoveries of his are of special pre-eminence: his work on the compound amonias, on the glycols, and on the aldols make his name prominent in chemistry. He was elected a member of the Academy of Medicine in 1858. In 1867 he succeeded Pelouze in the French Academy of Sciences. For three terms he was President of the Chemical Society of Paris—in 1864, 1874, and 1878. He was a member of the Royal Society of England, an honorary member of the German Chemical Society, and of other scientific associations. He received in 1865 the biennial prize of 20,000 francs from the Academy of Sciences, for his labors in chemistry, and in 1879 he received the Faraday medal. The “Répertoire de Chimie pure,” founded and edited by him, was afterward merged into the “Bulletin” of the Chemical Society, his name being retained in the corps of editors. He was also one of the editors of the “Annales de Chimie et de Physique.” His great editorial work, however, was the preparation and publication of the “Dictionnaire de Chimie pure et appliquée” (1868, et seq.), in five large octavo volumes, and its supplement, now being published. His numerous other works include “Tracté de Chimie médicale,” “Leçons élémentaires de Chimie moderne,” “Tracté de Chimie biologique,” “Leçons de Philosophie chimique,” “La Théorie Atomique,” and “Histoire des Doctrines chimiques depuis Lavoisier jusqu'à nos Jours.” Several of his works have appeared in the English language, notably “Chemical Philosophy according to Modern Theories” (1887), “Theory from the Age of Lavoisier” (1869), and, more recently, “Elements of Modern Chemistry” (1880), and, in the “International Scientific Series,” “The Atomic Theory” (1880).

Ocarina. Several musical instruments of curious shape have recently appeared, one of which has enough harmonious sweetness to render it probable that it will find an abiding-place in concert-rooms as well as in musical households. It is called the ocarina, and in its simple form looks like a painted sweet-potato.
with a row of holes in its side. It was the invention of an Italian mountain-boy, made for his own amusement. It was molded of clay, hollow inside, with a mouth-piece, and a row of holes by way of keys. It was then baked and glazed. Its tones were very sweet, but of course the range was exceedingly limited, for it could only produce notes from do natural to fa of the octave, going through the notes of the chromatonic scale. It was a long time before the ocarina was other than this, but finally a band of wandering French minstrels attempted to give entire concerts with ocarinas, and the limits set upon their programme caused them to begin the expansion of the primitive melody-maker. They manufactured the instrument in different sizes, so that they soon had the soprano ocarina, the size of a small sweet-potato, and the double-bass ocarina, the size of a large pumpkin, with all the degrees between. In all these the principle was unchanged, and it could not be made to harmonize with other instruments. So the musicians thought again, and the result was that a piston was introduced, which lowered or raised the note accordingly as it was drawn out or pushed in.

A little later, and a row of keys was added, corresponding with the row of holes, when a second octave changed the home-made affair into an article of such dignity that it has appeared in philarmonic concerts.

A writer for "La Nature" has made a still further experiment upon the ocarina principle. He took a wooden gourd, made some tiny holes in it, arranged much like those in the ocarina, fastened to it the mouth-piece of an old clarionet that was provided with a reed, and then enlarged the apertures until the true tones were obtained.

O'CONNOR, CHARLES, an American lawyer, born in New York city, Jan. 22, 1804; died in Nantucket, May 13, 1884. His father, Thomas O'Connor, was a native of Roscommon county, Ireland, emigrated to this country in 1801, and shortly after married a daughter of Hugh O'Connor, who was not related to him. With William Kurnan and others, the refuge came interested in the settlement of 40,000 acres in Steuben county, N. Y., the great lawyer's first recollections were there. At the age of six he was with his mother to New York, where he lived till his seventy-sixth year, when he settled in Massachusetts. His education somewhat desultory, but his father gave personal attention to his studies. At the age of sixteen he began the study of law, which he pursued in the office of Henry W. Stetson, Stephen D. Lemoyne, and Joseph D. Faile. He was admitted to the bar in 1824, and soon, by indefatigable study, acquired local reputation, being in early life against the leaders of the New York bar. His first reported argument was in the case of Martin v. McLaughlin. The Forrest divorce brought him into the widest national attention at one step. Contending against counsel as John Van Buren, at the age of six, he brought it to a triumphant issue, initiating the divorce with liberal alimony for the defendant. For his conduct of this case, presented with two silver vases; one of which was from thirty ladies of New York, the other from sixty members of the bar. By vision of his will, these vases were left the Law Institute of New York city. The slave Jack in 1835, the Lippencott case in 1848, the Lemmon slave case in 1850, in which he was opposed to William M. and Chester A. Arthur, who successfully defended the slaves, and the Parke case in 1862, were among the most notable of his work up to the period of the civil war. In the Geddes Mining Company's case he made the greatest arguments ever delivered in the Supreme Court of the United States, and was also employed in the litigation connected with the Goodyear India-rubber patent. He was a member of the Constitutional Convention of the State of New York of 1846 and 1847.

His interest in Ireland was always great. His ancestor Charles O'Connor, of Bellanagar, Ireland, having been one of the founders of the anti-papist movement that has lasted for two centuries. In 1848 he became one of the "Direct Friends of Ireland," organized in pation of a rising there, which had cost lives among its members horace Greeley and John A. J. McCracken. In August of the same year an Irish patriotic meeting was held in Hyde Park, New York city, which was addressed by Bishop Hughes and General Hiram Wall. Mr. O'Connor presided at this, and at a second demonstration a month later, the same year he was the Democratic candidate for Lieutenant-Governor of the State of New York, and ran 8,000 votes ahead of the Republican. Under President Fillmore he held for fifteen months the office of United States Attorney of the State of New York. When civil war threatened, anxious to avert it, but, a life-long at
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dent Democrat, espoused in his own mind no cause of the South. After the war, when Jefferson Davis was indicted for treason, Mr. O'Connor became his senior counsel. He was no one of his bondsmen.

On Oct. 17, 1871, William M. Tweed was convicted in the name of the State of New York on a suit for the recovery of $8,312,-
-$1,371, and was admitted to bail in the sum of $1,000,000. With William M. Evarts, ex-president Emott, and Wheeler H. Peckham, Mr. O'Connor conducted the prosecution. He was commissioned on behalf of the State New York by Gov. Hoffman to

such proceedings as might be necessary for the recovery of the moneys of which the city of New York was alleged to have been demanded. Associated with the three lawyers named (one Democrat and two Republicans), he established in New York a branch of the Attorney-General's office, which he named The Bureau of Municipal Correct. The civil suits for recovery of money, intrusted to him, lasted till 1875, when the Court of Appeals decided that suit should have been brought by the county of New York. Mr. O'Connor immediately drafted the Civil Remedies Act, which was signed at the next session of the Legislature, and new suits were begun.

became weary with the slowness of the first suits, and published a volume entitled "Population Triumphant, being the Record of a Five Years' Campaign against Official Malversation, A.D. 1871 to 1875." In 1873 new suits against Tweed and his workers were begun under the new Act. During the first trials many of the defendants were acquitted; but the combined efforts of the accused and their friends broke down the Tweed ring completely. Mr. O'Connor continued that the actions were what the existence demanded, and that they were proper forms. For his services in the work he received any compensation whatever.

During this period he conducted the great real estate trial, in which the title to $5,000,000 worth of real estate in New York city was involved. On the first trial, in 1871, the jury found in favor of the defendant for $100. On the second trial, in 1872, before a struck jury, was won the defense. Two months were consumed in the hearing of the first case, and eleven months in that of the second. Never, perhaps, in the United States have we been engaged in litigation requiring more skill and learning as an advocate, more harrowing labor in the collection and sifting of testimony. When he retired from the two suits, he had been triumphantly successful.

Afterward, in a single particular, the United States Supreme Court modified the judgment of the court below. After his retirement from the case the property was sold at auction in 1882 on a compromise.

In the winter of 1876-77, the Electoral Commission was organized, pursuant to an act of Congress, to determine the count of the presidential vote. Mr. O'Connor appeared before the Commission at Washington, and argued in favor of counting the electoral votes of the disputed States for Tilden and Hendricks.

In 1873, when Frank Walworth, a young man, was tried in the city of New York for the murder of his father, the novelist Mansfield Tracy Walworth, Mr. O'Connor appeared as counsel for the accused. Old friendship for Chancellor Walworth, grandfather of the murderer, probably influenced him. The trial ended in a conviction of murder in the second degree, and a sentence to imprisonment for life.

Tenders of nomination to office were frequently made to him, but with one or two exceptions were declined. In the presidential campaign of 1872, when Horace Greeley was nominated for President by the Democratic Convention at Baltimore, Mr. O'Connor was nominated, in the face of his absolute refusal.
to accept, by the "Bourbons" at the Louisville Convention. He received 21,559 votes.

In February, 1869, he was elected President of the Law Institute of New York, succeeding James T. Brady, who had died.

Up to the time of his death he worked at his profession. In 1882 he argued the Tennessee bond suit in Tennessee, which was decided adversely to the bondholders for whom he appeared. He remained in the case, and to his last hours of health was engaged in preparing for the second argument.

In 1860 he decided on making Nantucket his home, and in 1881 he erected a house and a fire-proof library there, and removed thither his furniture and books from Fort Washington, his home for over thirty years. In April, 1884, he took a trip to New York, caught cold, and on his return to Nantucket fell ill and died.

In 1854 he married Mrs. MacCracken, a widow, formerly Miss Cornelia Livingston, who died May 12, 1874. Mr. O'Connor never had any children. He was rather tall, slender, and remarkably straight. Up to the last he was as erect as a young man. His hair was very dark in youth, but for many years was of snowy whiteness. He had heavy eyebrows, and his eyes, which were blue, impressed most people as being black. A portrait in oil by Reinhardt hangs in the rooms of the Bar Association in New York. On April 16, 1867, a bust of him by J. Wilson MacDonald was presented to the Supreme Court of the State of New York, but he would not consent to its being placed there until after his death.

He was very fond of wit and humor, and used to introduce it into his briefs and arguments to such an extent that it sometimes became a defect. He remarked this himself, telling the writer that frequently, after yielding to the irresistible impulse in court, he would feel greatly mortified, but was certain to repeat the offense.

To the end of his life he wished to see the Democratic party triumph; but as party lines became of late years less distinct, he formed a theory that the work of politics was over. He formulated a new system of government. He held that there should be no political parties, that laws should be few and very seldom changed, that the office of President should be substantially abolished, and that the administration of the laws should be in the hands of a house of judges, subject to impeachment. He was extremely charitable, and gave away large amounts, generally in as secret a way as possible. This was done to spare himself the frequent application of professional beggars. Where his sympathies were not called into play, he was a remorseless judge of human nature; but, once the chord of sympathy was touched, his weakness manifested itself. By common consent he is placed among the leaders of the bar, standing with two or three others in the front rank. He won his successes by dogged work, joined with great ability. He read to an enormous extent in law, that an hour's thinking was worth more than reading. The monument of his leg is preserved in the collection of his opinions, filling more than a hundred volumes bequeathed to the Law Institute of New York. The State officers for the year were as follows: Governor, George B. Headly; tenant-Governor, John G. Warwick; Secretary of State, James W. Newman; Auditor, E. R. Kiesewetter; Treasurer of State, John G. Brady; Attorney-General, James L. Brown; Commissioner of Common Schools, L. Brown; Board of Public Works, John H. Houston; George Paul, and Henry Weible; Supreme Court, Martin D. Follett, Sevier; John W. Okey, George W. Mt. and William W. Johnson; Clerk of Court, J. W. Cruikshank.

Finance.—On Nov. 15, 1883, the public debt of the State was $4,522,519, being the year there was paid $419,633.81; the public funded debt of the State, $1,884,410,079.19. The reduction of the annual interest charge during the year was 868.25. The irreducible State debt, or interest on it per cent., now stands at 0.06. The local debts aggregated $888,938, an increase during the year of $260,728.

Military.—The Ohio National Guard of 87 companies of infantry, divided into regiments, 1 battalion, and 5 unbattalions, numbered 9,000 men. The local debt of the state is $1,522,519, making an increase during the year of $71.

Benevolent Institutions.—The number of inmates in the Insane Asylum at the beginning of the year was 4,665, of whom 206 were charged improved, 283 unimproved, and 4,176 died. In the Institution for Feeble-minded Youth there are 407 boys and 251 girls. Blind Asylum, 188 boys and 102 girls, Destitute and Dumb Asylum, 260 boys and 260 girls, and in the Soldiers' and Sailors' Orphans Home, 408 boys and 384 girls.

Penitentiary.—By the act of March 9, 1884, the reorganization of the Penitentiary, organized by the appointment of a new system of government. He held that there should be no political parties, that laws should be few and very seldom changed, that the office of President should be substantially abolished, and that the administration of the laws should be in the hands of a house of judges, subject to impeachment. He was extremely charitable, and gave away large amounts, generally in as secret a way as possible. This was done to spare himself the frequent application of professional beggars. Where his sympathies were not called into play, he was a remorseless judge of human nature; but, once the chord of sympathy was touched, his weakness manifested itself. By common consent he is placed among the leaders of the bar, standing with two or three others in the front rank. He won his successes by dogged work, joined with great ability. He read to an enormous extent in law, that an hour's thinking was worth more than reading. The monument of his leg is preserved in the collection of his opinions, filling more than a hundred volumes bequeathed to the Law Institute of New York. The State officers for the year were as follows: Governor, George B. Headly; tenant-Governor, John G. Warwick; Secretary of State, James W. Newman; Auditor, E. R. Kiesewetter; Treasurer of State, John G. Brady; Attorney-General, James L. Brown; Commissioner of Common Schools, L. Brown; Board of Public Works, John H. Houston; George Paul, and Henry Weible; Supreme Court, Martin D. Follett, Sevier; John W. Okey, George W. Mt. and William W. Johnson; Clerk of Court, J. W. Cruikshank.

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females; 1,149 white, 217 colored; prisoners for life, 11 for general or indeterminate terms, and 1,205 upon sentences of life periods; 1,139 were serving their the second, 22 the third, 11 the fourth, six fifth term; 88 prisoners were over 65 between twenty-one and thirty, and over twenty-one years of age.

The act of March 24 and a subsequent act passed April 14, it was provided the case of persons that had never been sentenced to the Penitentiary, except of murder in the second degree, the right, in its discretion, give a general to the Penitentiary; in which case the said individual could liberate the convict at any time, in the discretion of imprisonment depending on the will of the warden.

By still another act, passed April 14, an act to extend the term of imprisonment for first-offence and second-offence sentences, the support of which was made applicable to the diversion of its use of 10 of all the money received from the sale of its traffic under the Act of 1881, but the amount of the sale of its property being paid to the State Court to purchase the use of its land, nothing was done toward establishing a penitentiary.

Schools.—In the boys' Reform School at Columbus, 458 boys. An appropriation of $5,000,000, made for that purpose.

Industrial School.—In the Industrial Home there are 275 girls.

Education.—The number of youth of school age in the State, Sept. 1, 1884, 1,074,557; Sept. 1, 1885, 1,068,500; number of schools in the State, 2,092; number of students in grades, 10,067; number of school children in township districts, 11,079; number of students in parochial schools, 1,891; estimated value of school-houses, $228,506,046; number of teachers engaged in the schools, 17,248; number of teachers actually employed, 14,685; number of students in public schools, 218; number of books in libraries, 885,554; average number of weeks schools were in session, 81; average number of pupils enrolled in schools, 762,755; number of pupils in daily attendance, 46,267; average number of school-officers, 16,975.

1 and average cost is given as follows: in township districts, total cost, including 6 per cent on permanent property, $4,409,725; in city, village, and special districts, total cost, $5,017,014.98; in township districts, average cost per capita, $9.66, average cost per capita on the population between six and sixteen years of age, $10.17; same including 6 per cent on permanent property, $11.85.

Railroads and Telegraphs.—The report of the Commissioner of Railroads and Telegraphs for the year beginning June 30, 1883, and ending June 30, 1884, makes the following showing: The increase of mileage during the year was 193, being 2.95 per cent. additional, making a total of 7,098 miles of railway in the State. The capital stock remained about the same, being $2,349,454,430.87. The debt increased so that the stock and debt together make $507,734,598, an increase of 6.25 per cent. The number of passengers transported during the year increased 4.94 per cent., and the number carried one mile, 2.29 per cent., at an average rate of 2.281 cents per mile, a decrease of 6.09 per cent. The tonnage of freight increased 6.28 per cent., and the ton mileage 7.15 per cent., while the average rate per ton per mile is 0.789 cent, a decrease of 9.22 per cent. The gross earnings increased from $49,900,506.36 in 1883, to $50,168,806.13, 0.92 per cent. The net earnings decreased 0.76 per cent, being $15,090,611.29, while the operating expenses increased 4.46 per cent. Three fourths of the railway mileage of Ohio is laid with steel. The number of railway employees in the State is 37,366, a slight decrease, and a little over 6 persons per mile of road. Since 1874 the number of locomotives has increased 54 per cent., and the number of cars 189 per cent. In 1874 there were 29 cars to each locomotive, while now there are 84. The number of persons killed in Ohio during the year was 384, 28 less than 1883; and of these, 1,0 were passengers, 127 railway employees, and 207 others. Of the employees killed, 16 were killed in coupling cars. During the year, 886 persons were injured, 116 less than the year before. Of these, 48, 7 per cent. of passengers, 579 were employed, being 69 per cent., and 211 others. Of the employes injured, 277, 47.9 per cent. were injured in coupling cars. In Ohio there are 2,422 brakemen; hence, one in every nine was injured in the act of coupling cars. There are 10,094 miles of telegraph reported in Ohio; the gross earnings of which are $1,417,300.31, and the net earnings $1,356,667.94.

Greatest Events.—By the amendment to the judicial article of the Constitution, adopted by the people in 1883, district courts were abolished and circuit courts established. The Legislature, in April, divided the State into seven circuits, and provided for the election of three judges in each, the full term being six years. The twenty-one judges were elected in October, to begin their duties Feb. 9, 1885.

The Legislature.—The sixty-sixth General Assembly organized Monday, January 3. The Senate stood 22 Democrats and 11 Republicans; the House of Representatives, 60 Democrats and 45 Republicans. The Senate elected Elmer White, of Defiance, Speaker pro tem. The House chose A. D. Marsh, of Columbus, Speaker, and A. L. Brunner, of Wyandot, Speaker pro tem.
The vote of the State was counted January 9, and Governor Hoadly inaugurated as successor to Governor Forster, January 14. Hon. M. H. B. Payne was chosen United States Senator to succeed Senator Pendleton, March 4, 1885. The act of 1882, districts the State for congressional purposes according to the decennial census, was repealed, and a new apportionment was made. The principal other acts are referred to under the different sub-titles of this article. The session closed April 14.

The Liquor Question.—The liquor question continued to be important this year, as in the year preceding. The Scott law taxing the liquor-traffic, which was passed in 1883, and pronounced constitutional by the Supreme Court, was, early in the present year, again taken to the Supreme Court, which had been changed in its political complexion by the substitution of two Democratic judges for two Republicans. The court, in the case before it, decided that the provision in the Scott law making the tax a lien on the property where the liquor was sold by a tenant, was unconstitutional, but declined to pass any judgment on the other parts of the law that imposed the tax. This decision, delivered in June, was not considered satisfactory by either the supporters or the opponents of the law, and preparations were made for the presentation of another case that would force a decision on the question of the tax itself being unconstitutional. Previous to this, in April, the Legislature had so amended the law as to make the tax payable semi-annually instead of annually, and a large proportion of the liquor-dealers had paid half the tax, some of them under protest, in expectation of a decision of the court in their favor. A new case was sent up, and on the 28th of October the Supreme Court extended its decision of June 17, by deciding that “as much as it is plainly unreasonable and improbable that the General Assembly would have passed the Scott law, with the provision giving a lien for the tax on premises occupied by tenants eliminated therefrom, the whole act, so far as it provides for an assessment or tax, is unconstitutional and void.” The court still declined passing on the constitutionality of other portions of the law. The decision created great excitement in the counties and municipalities throughout the State, which had not only appropriated the liquor-taxes already paid in, but had levied their other taxes for the coming year after giving credit to certain receipts from the tax on the liquor-traffic. They were compelled to face not only an unavoidable deficit in the next year’s revenue, but a demand for the return of the liquor-taxes already paid.

The Ohio River Flood.—In February, the breakage of the ice in the Ohio river and its tributaries, and the heavy rains that accompanied it, caused an unprecedented rise in the river. All the towns along the banks suffered heavily. At Cincinnati a large part of the city was under water, many houses were wrecked, lives were lost, and thousands were rendered temporary if not wholly destitute. To add to this, the gas-works were submersed, the city was plunged into darkness. Relief into the stricken cities and towns of the State from all directions, and steamers employed to distribute food and clothing, climaxed was reached at Cincinnati at February 14, when the water stood at 3½ inch, the highest ever recorded.

The Cincinnati Riot.—In March, William Palmer was tried in Cincinnati for assisting in the murder of his employer, H. Kirk. The murder was one of great gravity to the city, and was confessed to by both Berry and Palmer. Notwithstanding this confession, the sentence for murder in the first degree was found guilty of manslaughter only. This, with the fact that about other untold murders were in jail, inflamed the public mind. On the evening of March 28 a meeting was held in Music Hall, protest being made against the verdict, and to demand a new trial. It was made up of solid men of the city, with a loud and angry infusion of the mob element. Nothing had progressed very far, however, the advocates of violent measures made themselves prominent. To avert mischief, the officers of the meeting decided to adjourn. Outside a crowd had gathered to hear the result of the meeting. A roar roused excitedly out of the hall, shouts of "Down with the jail! Come on! Follow me as a leader!" The crowd immediately massed toward the jail, yelling as they went. Slashing the riot alarm, and that set the alarm running in the direction of the Court. The crowd around the jail soon numbered many thousands, but the active operations were carried on by a few hundred. The doors of the jail were soon broken. A factory near the scene of the rioting was forced open, the crowd took out a huge beam and some hammers. The jail door was burst open, the mob forced a way to the cell of William. The crowd then took out a large number of persons were wounded, and the riot driven out. The mob built a bonfire on the walls of the jail, but with no result; the gang broke into a gun-store and took up arms. The Governor was telegraphed to send troops, and two regiments of the National Guard were ordered out. O’clock Saturday night, just twenty-five minutes after the first alarm, the mob was
n. By that time the rioters had forced way close up to the Court-House, broken e front of the treasurer's office, and set off the sheriff that he give up his prisoners from the mob. The demand was ree, and the leaders then declared that the would force their way in and blow up the wing of the jail with dynamite. Firing rapidly on the jail. In response to the alarm, Capt. Desmond, of the military, en the treasurer's office to put out the fire, was fired on and instantly killed. He was eminent lawyer and very popular. Two stes were wounded. The mob set fire to Court-House without serious opposition, oldiers all being on guard in the jail in t. They rolled in barrels of coal-oil and like boxes and set them all on fire. The rushed down Main Street to a gun-store, e it in, gutted it, and set it on fire. That in the last alarm. A patrol-wagon added. When it dashed up, the mob ed on it, killing one of the men and wound several of their own number.

b Court-House was badly injured by the but not totally destroyed. A large por of the valuable records was saved, the in the treasury preserved intact, and units left in fairly good condition. Dur the whole of Sunday there were minor rbances, and on Sunday night the riot again under full headway, several shops t broken into and robbed by gangs of boys. Troops from all parts of the State hurried to Cincinnati, several full regiments and two batteries of artillery dispatched to the scene of disorder. The ops were received with threats as they shed through the streets, and in some inces attacks were made and responded to few shots. Barricades were built by the ce to guard the leading business streets pub buildings threatened with destruc. During the night these barricades were times attacked by the rioters, who fired ay after volley at the troops. These ret the fire after several warnings, and one st from a Gatling gun was also fired. All these exchanges of shots were going on police were arresting the rioters in conable numbers. After Sunday night the gradually quieted down, and on the fol Wednesdays, the sixth day of the dis ease, the barricades were removed, street travel resumed, and the military sent to their res with the exception of a single regiment.

exact number killed and wounded was ascertain, but the most authentic list es the dead at 45 and the wounded at 138. seeking Valley Strike.—In April a disagreee in wages arose between operators and ers in the valleys of the Flocking and its niebors, ending, in June, in a genera disge of the workmen and the temporary tion of labor, soon followed by the emloyment of imported laborers at rates of pay refused by resident miners. This lockout, or strike, continued throughout the year, and was productive of much suffering. From the out-set the operators undertook to guard their property from injury at their own expense, and continued so to do, employing large numbers of armed men for that purpose. The body of the striking miners were law-abiding, but a comparatively small number of lawless and criminal men seized occasional opportunities for mischief. During the course of this protracted controversy, two valuable mine-hoppers, a railway tunnel, and three railway bridges, were burned, seven mines were set on fire, and at least two armed attacks were made on the guards, during one of which a citizen was murdered while in the discharge of his duty as guard. In response to calls from the local authorities, the Gov ernor sent four companies of troops, but soon removed them.

**Political**—The Republican State Convention was held in Cleveland, April 28 and 29. The nominees were James S. Robinson, of Hardin county, for Secretary of State; W. W. Johnson, of Lawrence county, for Supreme Judge; Charles A. Flickinger, of Defiance county, for Board of Public Works. The platform declared in favor of protection of American industries without discrimination, condemned the doctrine of tariff for revenue only, and that of putting such raw materials as ore, pig iron, wool, etc., on the free list; demanded the restoration of the wool tariff of 1867, and the equal consideration of labor with capital; inquired the position of the party on civil service reform; demanded that every voter shall have a free ballot, which shall be honestly counted, and heartily approved the admin istration of President Arthur.

The Prohibition State Convention, held at Columbus, June 18, placed the following can didates in the field: J. W. Roseborough, of Fulton county, for Supreme Judge; W. J. Kirkendall, of Jackson county, for Board of Public Works.

The Democratic State Convention was held at Columbus, June 24 and 25. The following candidates were nominated: James W. New man, of Scioto county, for Secretary of State; Charles D. Martin, of Montgomery county, for Supreme Judge; John H. Bender, of Tuscarawas county, for Board of Public Works. The platform reaffirmed that of 1883.

A Greenback-Labor ticket was also nominated.

The State election was held October 14, with the result of electing the three Republican candidates. The full vote was as follows:

**SECRETARY OF STATE.**

James S. Robinson, Republican .................. 281,987
James W. Newman, Democrat ..................... 880,885
Peter M. Harrod, Greenbacker ................. 8,499
Evan J. Morris, Prohibition .................... 8,409
ONTARIO.

SUPREME JUDGE.
William W. Johnson, Republican ........................................ 82,191
Charles D. Martin, Democrat ........................................ 87,942
James H. Greenback, Greenbacker .................................... 8,508
John W. Roosevelt, Prohibition ....................................... 8,176

MEMBER OF BOARD OF PUBLIC WORK.
Charles A. Flickinger, Republican ................................... 293,858
John H. Bender, Democrat ................................................ 176,484
William R. Ogles, Greenbacker ....................................... 3,563
W. J. Kirkendall, Prohibition ......................................... 1,164

Twenty-one Congressmen were elected at the same time. In some of the districts, Prohibition and Greenback candidates were voted for.

ONTARIO. The Government.—The year 1864 found a Liberal Government in power in the province, under the Hon. Attorney-General Mowat. His majority in the Assembly was not large, and strenuous efforts were made by the opposition members to defeat his ministry. The test case on which the ministry were to be defeated was Kirkland’s timber-limit scheme, in connection with charges of bribery. Everything was in readiness, when, at a signal, both Kirkland and an adventurer named Wilkinson were arrested for conspiracy to overthrow the Government. The trial lasted for weeks. Wilkinson was admitted to bail, but now resides in the United States. Kirkland, a lawyer and a very able man, pleaded that he did not understand the defeat of the ministry to be so serious; thought it was the same as in Wisconsin, where it made no difference to the party which way a man voted; and repudiated any connection with Wilkinson and his confederate. Being without friends, and personal bail not being acceptable, “the American,” as he was called, was honored by Prof. Goldwin Smith, who came into court, “to be friend a stranger in a strange land.” The plot having been fully exposed, and the chief criminal being a mere party tool and beyond reach of the law, the case was allowed to lapse.

Peas.—Ontario has a very complete Bureau of Industries, which has been in operation for several years. In Ontario the year 1864 was highly favorable for fall wheat. With the exception of a few western counties, the wheat wintered well, and finally ripened in a healthy condition. In some instances the thrashed grain weighs from sixty-four to sixty-six pounds a bushel. The barley is plump and heavy, but owing to the rains in harvest-time is discolored, rendering it, as a rule, unfit for No. 1 Canadian. In the Lake Huron region, the barley, as well as the oat crop, was somewhat light, both in yield and in weight. Oats, as a rule, turned out well. Rye was not so good as usual. Peas, this year a most excellent crop, were almost entirely free from the bug or worm. There will be a large surplus for market. Corn turned out well. Sorghum, beans, buckwheat, etc., are not much cultivated in Ontario, but yield fairly well where tried. Clover-seed, a valuable product of Ontario, this year turned out to be destroyed by the midge. The first, or hay crop, was magnificent; the second, until near the time of cutting, seemed as fine as the first, but for few days rendered hundreds of acres until for cutting. Those that pastured the fields fell late and allowed the crop to grow to seed there were the only ones that were successful in clover. Roots are, as a rule, extra good. The potato-crop is well gathered; only one case reports a rot, and this is in the extreme eastern part of the province. Turnips, many acres of which were plowed up early in the season, did not yield so much as is the rule. The weather in early stages of the crop was the cause. Mangolds, now extensively grown in Ontario, produced a remarkable yield. The majority of farmers plant as many acres of these as of turnips.

There is a large surplus of apples this year, but prices are low. The best qualities buy only from one dollar to one dollar and a half a barrel. Pears, peaches, plums, cherries, etc., grapes were, excepting in a few localities, very poor crops. Berries were very abundant.

Live-Stock.—Live-stock farming is one of the rising industries of Ontario. The grade of cattle are yearly improving, owing largely to the various exhibitions, fairs, etc. The most universal practice with farmers is to house the cattle during winter, and feed them instead of, as formerly, letting them “run the barn-yard and feed from the straw-stack.”

There are hundreds of Ontario farmers who turn out their ordinary stock in spring, and along on the barn-yard and straw stack are found the straw-cutter, run by horse-power.

Dairy.—Butter and cheese factories are common all over the province. The farmers sell the milk, and receive the whey and the curds in return. In every locality the factory is managed on the joint-stock principle. In other cases the result, as a rule, is satisfactory. One enterprising man has established a Jersey dairy between the cities of Toronto and Hamilton. In each city he has a depot, where wishing milk for invalids may be supplied. Though instituted for but a few months, the experiment is very successful.

Draining.—Great attention is being paid to tile-draining. During this year many hundreds of miles were put in. The enormous increase of tile-draining in this, as compared with former years, is attributable to two causes: the greater knowledge of its usefulness, and the fact that open drains are great hindrances to reaping-machines; and the general introduction of self-binders has rendered the closing of the open drains a necessity. The Provincial Government assists municipalities in draining subject, of course, to special circumstances.

Labor.—Farm-labor is plentiful and quite insolent; wages low. The old custom of hiring the hired man live in the family through
ar is gradually disappearing from the led districts. The custom of engag
for the summer six months, and of your regular hired help for the other
skn its place. The better class of re adopting another plan— the most
y of all to the farmer: he engages
a married laborer, provides him with a cottage and a plot on one corner of the farm, and en-
gages his services for the year, or the summer six months, as suits his convenience.

Crop Products.—The following table exhibits the statistics relating to the products, etc., of
Ontario for the year 1884:

<table>
<thead>
<tr>
<th>Crop</th>
<th>Fall wheat</th>
<th>Spring wheat</th>
<th>Barley</th>
<th>Oats</th>
<th>Rye</th>
<th>Flax</th>
<th>Potatoes</th>
<th>Turnips</th>
</tr>
</thead>
<tbody>
<tr>
<td>1883-84</td>
<td>664,740</td>
<td>731,647</td>
<td>700,472</td>
<td>1,461,926</td>
<td>108,416</td>
<td>570,927</td>
<td>174,560</td>
<td>195,720</td>
</tr>
<tr>
<td>1884-85</td>
<td>803,177,891</td>
<td>1,405,793</td>
<td>19,139,243</td>
<td>57,050,844</td>
<td>1,645,296</td>
<td>18,001,467</td>
<td>15,836,520</td>
<td>22,046,261</td>
</tr>
</tbody>
</table>

* In ear. + Shelled.

a.—During November and December's institutes or conventions were in
the various counties of the province. It is to discuss questions connected
arming interests. Already the effect remarkable. During the year, too,
tment of Agriculture introduced writ-
nations in agriculture. These exam-
re for farmers' sons, and are held at
m as the various teachers' exams.
The object is to encourage young
main on the farms.

Professional education some important
have been introduced and advances
re Minister of Education for the prov-
on. G. W. Ross, has started a move-
confederate the various provincial
as. The plan is, to have one central
iversity and several colleges. Each
ent universities is to become a col-
professional staff in the more or-
ments; but in the higher and the
ments the university as feder-
supply the staff of professors. Each
be represented by a fixed number
rs in the senate of the provincial
which alone is to have the power
ng degrees. Already Victoria Uni-
stitution of the Church of the
iversity, Knox College, McMaster
the Baptist College, Wycliffe Col-
the Western University, have signi-
aproval of the plan. Albert Uni-
Belleville, belonging to the late
Methodist Church, federated, at the
Church Union, with Victoria Uni-
 Cobourg. The Toronto School of
and St. Michael's College, the latter
Church institution, were formerly
ith the University of Toronto. The
rity in the province of any import
has refused to enter the confederacy
of Kingston. Victoria will move
or to Toronto, and erect college
venient to the University of To-
he other colleges have done. The
Education has also made an im-
the matter of provincial school
. He proposes, and is carrying his
practical effect, to have but one
y subject; one series of readers, one

geography, one grammar, etc. Counsels are
much divided as to the propriety of this scheme.

The Kindergarten system of educating junior
pupils has been most successfully introduced
in the province. The credit of the enterprise
is due mainly to Mr. J. L. Hughes, Inspector of
Schools, Toronto. Considerable discussion and
respondence took place during the year,
relative to the introduction of the Bible into
the public schools of the province. The law
has for years permitted the reading of the
Scriptures and of prayers approved by the
Education Department, but nothing compulsory
was in the law. Several extreme members of the
clerical party endeavored to work up an
excitement about the immorality of the youth
of the land, owing to " now-fangled Yankee
notions," and to the absence of Bible-reading
in schools, but the law remains as it was.
The Minister of Education caused a selection
to be made of the non-sectarian portions of
the Bible, and this will be bound in a separate
volume for use in the schools where it is
deemed necessary to read the Bible.

Crime.—Crime in Ontario has been at a low
ebb, so far as the more heinous offenses are
concerned; but the petty crimes have been
very common. Burglary especially has been
exceedingly common in nearly all the large
cities and towns, and the police seem to be of
very little service. There is also a growing
tendency to use fire-arms. The Blake act, for-
bidding, under severe penalties, the carrying
of concealed weapons, is in force in Canada,
and is largely instrumental in rendering the
revolver unsalable.

Popular Demonstrations.—There were two great
demonstrations to two noted politicians in To-
onto in 1884. The first was a monster street
procession in honor of the victory achieved
before the Privy Council in London, by the
Hon. Oliver Mowat, in connection with the
boundary award. The Liberals of the prov-
ince, from every municipality, turned out en
masse. The second was a convention and ban-
quet in honor of Sir John A. Macdonald's hav-
ing been decorated with the order of the Gar-
ter, and also of his having attained his forty-
first year of public life in Canada.

OREGON. State Government.—The following
were the State officers during the year: Gov-
general fund ever heretofore reported to any Legislative Assembly of the State. The assessed value of property is $78,000,000, while its real value is believed to be at least $150,000,000.

The indebtedness of the State, aside from deficiencies that have occurred during the past two years, is provided for from other sources outside of the general fund.

The general bonded indebtedness has been largely diminished during the past two years, and for a large part of that still outstanding there are funds on hand in the treasury. This indebtedness includes the Umatilla Indian war debt, the bonded debt created by the act approved Oct. 23, 1880, to complete the payment of the Modoc war bonds, the soldiers' bounty bonds, and the soldiers' relief bonds. In pursuance of the authority conferred by this act, the Treasurer sold one hundred and twenty bonds of the State of Oregon, each being for the sum of $500. From the proceeds of the sale of these bonds and from the surplus accruing from the three-mile tax, funds were provided for paying off all of the Modoc war bonds, and those bonds have all been paid except about $300 which have never been presented. The new bonds issued under the provisions of the act of Oct. 25, 1880, were made payable on or before the first day of January, 1890, at the option of the State. From the proceeds of the half-mile tax provided for in said act, the Umatilla Indian war bonds have all been paid, with the exception of $733.08 which have not been presented. From the remaining proceeds of said half-mile tax, thirty bonds of the new issue have been paid, leaving ninety bonds unpaid, representing an indebtedness upon this account of $45,000, together with accrued interest.

On account of the Modoc war indebtedness there has been refunded to the State of Oregon, by the General Government, $70,000. On the soldiers' relief bonds there remain unpaid but $761.10, and money to meet this amount is in the treasury. Of the soldiers' bounty bonds there are still outstanding one hundred and fifty-nine of the denomination of $50 each.

This constitutes the general bonded indebtedness of the State, and money for the immediate or proximate payment of it is now available.

An act was passed by the Legislative Assembly Oct. 21, 1870, providing for the issuance of bonds to aid in the construction of a canal and locks at Oregon City.

Of the swamp-land warrants there is yet outstanding the amount of $87,547.36 with accrued interest. As these are payable only out of the proceeds of the sales of swamp-lands, their redemption has been necessarily slow.
large revenue. The amounts of these funds are as follow:

- University fund principal ........................................ 75,000
- Agricultural-College fund principal .......................... 77,000
- Common-school fund principal ................................ 895,000

Of the different classes of lands belonging to the State there have been sold since Sept. 1, 1883, as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Acres</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>University lands</td>
<td>321.86</td>
<td>3,300</td>
</tr>
<tr>
<td>Agricultural-College lands</td>
<td>3,000</td>
<td>69</td>
</tr>
<tr>
<td>Common schools</td>
<td>172,065</td>
<td>17</td>
</tr>
<tr>
<td>Internal improvements</td>
<td>82,166</td>
<td>18</td>
</tr>
</tbody>
</table>

The law governing the selection, approval, and disposition of the swamp-lands granted to the State by the act of Congress of March 12, 1860, has been a constant source of vexation, and is likely to prove a source of much litigation. For years the State has been making earnest efforts to secure a patent for the swamp-lands to which it is entitled under the act, but thus far with comparatively little success.

**Insane Asylum.**—The new insane asylum building was ready for the reception of patients late in October, 1883, and those at East Portland were at once removed to it. The number of patients received at this time was 258 males and 193 females. Among the patients thus received were those insane of Idaho Territory. For the care and maintenance of these patients, from the date of their reception to November, 1884, there had been paid into the treasury of the State, by Idaho, the sum of $4,708.75.

**The Penitentiary.**—At the last session of the Legislative Assembly a law was passed authorizing the Superintendent of the Penitentiary to contract for the leasing of convict labor, at a rate of not less than forty cents a day for each convict. Under the authority conferred by this law, a contract was made by the superintendent. The number of convicts increased from 178 on Aug. 31, 1883, to 230 on Sept. 7, 1884, and 274 on Dec. 31, 1884. In consequence, it became necessary to provide additional accommodations. The Governor recommends the establishment of a reform school.

**Educational.**—The common schools are in a prosperous condition. The State University and the State Agricultural College are doing good service. There are two State Normal Schools, a School for the Blind, and a School for the Deaf and Dumb. The number of children of school age increased from 69,076 in 1883 to 73,367 in 1884.

**Political.**—The twelfth annual convention of the Oregon State Woman-Suffrage Association met in Portland on Feb. 12. The following resolutions among others were adopted:

That the proposed amendment to the Constitution of Oregon declaring: "The elective franchise shall not hereafter be prohibited to any citizen on account of sex," contains the essence and spirit of the Declaration of Independence, and we pledge ourselves to use all honorable means in our power to secure its adoption by the people.

That the thanks of this convention are due and are hereby tendered to the men and women of Washington for the victory they have achieved in securing the elective franchise for the women of that Territory, and for the aid and encouragement thereby given to those engaged in the cause of equal rights in Oregon and elsewhere.

State Conventions of the Democratic and Republican parties were held to choose delegates to the National Conventions, and nominate candidates for Presidential Electors, Judge of the Supreme Court, and Congressman. The Democratic Convention met at Dalles City on April 17, and nominated John Myers for Congress, and William W. Thayer for judge. The Republican Convention met in Portland on the 80th of April, and nominated L. Flynn for judge, and Binger Herman for Congress. At the election on the 2d of June, the vote for Congressman was as follows: Republican, 28,699; Democratic, 29,023. For Judge the Democratic vote was 24,982; Republican, 24,471. For the constitutional amendment, conferring the right of suffrage on women, 11,323 votes were cast; against it, 28,178. The Legislature of 1885 consists of 17 Republicans and 13 Democrats in the Senate, and 25 Republicans and 25 Democrats in the House. The following was the vote of the State for Presidential Electors on the 4th of November: Republican, 26,860; Democratic, 24,504; Greenback, 726; Prohibition, 492.

**Portland Commerce.**—The receipts at Portland of the leading articles of produce by the principal lines of transportation for the twelve months ending July 31, 1884, were:

<table>
<thead>
<tr>
<th>Produce</th>
<th>1883-84</th>
<th>1882-83</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat, cts.</td>
<td>9,568,609</td>
<td>9,098,925</td>
</tr>
<tr>
<td>Flour, bbls.</td>
<td>250,025</td>
<td>250,025</td>
</tr>
<tr>
<td>Oats, cts.</td>
<td>172,581</td>
<td>156,800</td>
</tr>
<tr>
<td>Barley, cts.</td>
<td>1,007</td>
<td>1,007</td>
</tr>
<tr>
<td>Raisins, cts.</td>
<td>4,945</td>
<td>4,945</td>
</tr>
<tr>
<td>Barley, cts.</td>
<td>60,609</td>
<td>60,609</td>
</tr>
<tr>
<td>Mill-stuff, cts.</td>
<td>60,609</td>
<td>60,609</td>
</tr>
<tr>
<td>Potatoes, sks.</td>
<td>34,916</td>
<td>34,916</td>
</tr>
<tr>
<td>Hay, bales</td>
<td>18,200</td>
<td>18,200</td>
</tr>
<tr>
<td>Wool, lbs.</td>
<td>9,475,151</td>
<td>10,922,660</td>
</tr>
<tr>
<td>Hides, lbs.</td>
<td>1,475,203</td>
<td>1,801,310</td>
</tr>
<tr>
<td>Flaxseed, sks.</td>
<td>81,468</td>
<td>81,468</td>
</tr>
<tr>
<td>Hope, lbs.</td>
<td>1,909,118</td>
<td>609,617</td>
</tr>
<tr>
<td>Limes, bbls.</td>
<td>41,511</td>
<td>41,511</td>
</tr>
</tbody>
</table>

The receipts of several leading articles for two seasons compare as follows:

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<td>34,916</td>
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<td>18,200</td>
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<tr>
<td>Limes, bbls.</td>
<td>41,511</td>
<td>41,511</td>
</tr>
</tbody>
</table>

The largest valley wheat receipts are from Linn, Marion, Lane, and Yamhill counties. Oats are well distributed, some coming from Puget Sound, but these are inferior to those of the State. Marion county is the largest flour-grinding county, several mills being located at Salem and Turner; Clackamas comes next, having three mills at Oregon City. Mill-stuff comes largely from these mills. Wool comes from Wasco, Umatilla, and other counties east of the mountains, from eastern Washington,
and from the Umpqua valley in southern Oregon. Flaxseed comes from northern Idaho and points near thereto. Almost all the lime received is from the islands up Puget Sound. Hope are mostly from counties bordering on Puget Sound, although some comes from Yakima county, and more from the middle valley counties. The arrivals of wheat and flour, reduced to wheat, foot up a total equal to 212,689 short tons wheat.

Receipts by leading transportation lines from Aug. 1 to the close of 1884, as compared with a like period of the last cereal year, were:

<table>
<thead>
<tr>
<th>ARTICLES</th>
<th>1884-85</th>
<th>1882-83</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Valley</td>
<td>Eastern</td>
</tr>
<tr>
<td>Wheat, cts.</td>
<td>1,059,946</td>
<td>1,415,901</td>
</tr>
<tr>
<td>Flour, bbls.</td>
<td>92,794</td>
<td>64,108</td>
</tr>
<tr>
<td>Oats, cts.</td>
<td>34,675</td>
<td>28,175</td>
</tr>
<tr>
<td>Barley, cts.</td>
<td>9,640</td>
<td>5,506</td>
</tr>
<tr>
<td>Rye, cts.</td>
<td>3,979</td>
<td>2,941</td>
</tr>
<tr>
<td>Mill-stuff, cts</td>
<td>1,794</td>
<td>3,994</td>
</tr>
<tr>
<td>Potatoes, sks.</td>
<td>29,313</td>
<td>2,066</td>
</tr>
<tr>
<td>Wool, bbls.</td>
<td>974,100</td>
<td>887,051</td>
</tr>
<tr>
<td>Hide, lbs.</td>
<td>329,067</td>
<td>257,080</td>
</tr>
<tr>
<td>Lumps, cts.</td>
<td>12,890</td>
<td>22,992</td>
</tr>
<tr>
<td>Fyaxseed, sks.</td>
<td>17</td>
<td>13,760</td>
</tr>
<tr>
<td>Hops, lbs.</td>
<td>1,077,989</td>
<td>177,706</td>
</tr>
</tbody>
</table>

The wholesale trade of Portland, in 1884, amounted to $40,600,000, being less than in 1883, which was an exceptional year.

Salmon.—The salmon-canning industry has not been a profitable one for the past few years, and the season of 1884 was even less profitable than the preceding ones. This condition of things is largely due to overproduction. The season’s pack, exclusive of British Columbia, has been stated as follows:

<table>
<thead>
<tr>
<th></th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia river</td>
<td>629,000</td>
</tr>
<tr>
<td>Sacramento, spring</td>
<td>2,000</td>
</tr>
<tr>
<td>Sacramento, fall</td>
<td>5,000</td>
</tr>
<tr>
<td>Rogue river, fall</td>
<td>6,000</td>
</tr>
<tr>
<td>Alaska</td>
<td>4,500</td>
</tr>
<tr>
<td>Eel river</td>
<td>5,000</td>
</tr>
<tr>
<td>Coquille river</td>
<td>7,000</td>
</tr>
<tr>
<td>Siskat river</td>
<td>5,000</td>
</tr>
<tr>
<td>Umpqua river</td>
<td>5,000</td>
</tr>
<tr>
<td>Tillamook bay</td>
<td>4,000</td>
</tr>
</tbody>
</table>

Total: 656,200

The British Columbia pack may be estimated at 100,000 cases. The shipments from Portland are shown below:

<table>
<thead>
<tr>
<th>YEAR’S SHIPMENTS</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York by sea</td>
<td>35,654</td>
</tr>
<tr>
<td>Eastward (rail)</td>
<td>25,851</td>
</tr>
<tr>
<td>Other points</td>
<td>15,086</td>
</tr>
</tbody>
</table>

Total: 600,281

NEW SEASON’S (FROM APRIL 1) SHIPMENTS

<table>
<thead>
<tr>
<th></th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York by sea</td>
<td>25,854</td>
</tr>
<tr>
<td>Eastward (rail)</td>
<td>16,086</td>
</tr>
<tr>
<td>Other points</td>
<td>10,086</td>
</tr>
</tbody>
</table>

Total: 600,833

PALEONTOLOGICAL DISCOVERIES, RECENT.

Hitherto no remains of air-breathing or land animals had been found below the Devonian series of rocks, although scorpions and other air-breathers had been discovered quite abundantly in the lowest carboniferous series. The first palæozoic land animal which came to light was described by Count Sternberg, in 1835, as from the coal-formation of Chomb, Bohemia, and was named by Corda Cyclophthalus senior. Another species was found in the same place three years afterward, which Corda described under the name of Microlabia. The next discoveries of palæozoic scorpions were made in 1866, when Messrs. Meek and Wort then described two new genera from the coal-measures of Mazon creek, Illinois, under the names of Eoscorpius and Masonia. In 1873 Dr. Henry Woodward determined remains of scorpions referable to the genus Eoscorpius in both the coal-measures of England and the carboniferous limestone of Scotland. In 1881 Mr. Benjamin N. Peach described a considerable number of remains of scorpions, including some species of Eoscorpius, which had been obtained by the officers of the Geological Survey of Scotland from the lowest carboniferous rocks of the Scottish border. In the summer of 1884 Prof. Gustav Lindström, of Stockholm, obtained a fossil scorpion of much greater geological age than any of these, from the Upper Silurian strata of Wisby, in the island of Gotland, Sweden. In a letter to M. Alphonse Milne-Edwards of Nov. 24, 1884, Prof. Lindström says, describing his fossil: "The specimen is in sufficiently good preservation, and shows the chitinous brown or yellowish brown cuticle, very thin, compressed, and corrugated by the pressure of the superposed layers. We can distinguish the cephalo-thorax, the abdomen, with seven dorsal laminae, and the tail consisting of six segments or wings, the last narrowing and sharpening into the venomous dart. The sculpture of the surface, consisting of tubercles and longitudinal keels, entirely corresponds with that of recent scorpions. One of the stigmata on the right is visible, and clearly demonstrates that it must have belonged to an air-breathing animal, and the whole organization indicates that it lived on dry land. In this scorpion, then, which we have named Palaeophonus nuncio, we see the most ancient of land-animals. In the confirmation of this scorpion there is one feature of great importance, namely, four pairs of thoracic legs, large and pointed, resembling the feet of the embryos of several other tracheates and animals like the Campodea. This form of feet
exists in the fossil scorpions of the car
us formation, the appendices belonging
to resemble those found in the scorpions
we know."

under, of Carluke, had obtained another
of a scorpion in June, 1888, from the
illarian beds of Dunside, Logan Water,
gow, Lanarkshire, Scotland, of which
ever, failed to publish a description be-
account of the specimen of Prof. Lind-
and appeared. As described by Mr.
be animal in Dr. Hunter's specimen
it an inch and a half long, and lies on
the stone. Its exposed ventral sur-
face almost every external organ that
en in that position, and in this way
plement the evidence supplied by
dish specimen. As in the northern in-
the first and second pair of append-
the cephalo-thorax in the Scottish ex-
'echelate, but the pulpi are not quite
. The walking-limbs, though not
dumpy as in Polaephorus nascens,
inate each in a single claw-like spike.
gement of the sternum shows a large
al plate (metasternite), against which
-shaped coxie of the fourth pair of
limbs abut. The coxae of the third
and the pentagonal plate along its upper
and meet in the mid-line of the body,
hey are firmly united. The coxae
of the two pairs, as well as the bases of the
as drawn aside from the center line of
; showing that, as in recent scorpions,
be concerned in manuduction, or
he squeezing out of the juices of the
rom the circumstance of these being
side, the medial eyes are seen pressed
ugh the cuticle of the gullet, and a
brun (camerostome) appears between
s of the cheliceras."

Behind the pen-
and the coxae of the hindmost
ere succeeds a space shaped like an in-
where the test is thin and wrinkled
axial long axis of the body. It is
this line that the trunk of the abdo-
ently separates from the cephalo-
recent scorpions, and it is at once
that the trunk in this case is as far
d from the cephalo-thorax as it can
without being detached. Similar lon-
ly wrinkled skin is seen to unite the
axial vertical scutes up the whole right
be trunk. At the interior angle of the
there hangs downward a narrow
ium flanked on each side by the
which have each a broad triangular
and its lower edge with the usual
re filaments. The combs almost hide
of the four ventral sclerites, which
breathing apparatus in recent scori-
withstanding which all four of these
in their right side undoubted silt-like
at the anal place. The fifth central
the trunk suddenly contracts posteri-
d to its narrow end is articulated a
long tail of five joints and a poison-gland with
a sting. These joints are all constructed on
the same principle as those of recent scorpions,
and as the articular surfaces are more highly
faceted on the dorsal than on the ventral asp-
pect (a portion of the tail lying sidewise, allow-
ing of these observations), there can be no
doubt that the animal was in the habit of car-
rying the tail over the head (so to speak), and
stinging in the same manner as its recent con-
gen thes. The above characters are shown in
the accompanying engraving (Fig. 1), on a scale

![Fossil Scorpion](image-url)

**Fig. 1** — Fossil Scorpion, from the upper Silurian rocks of Lezahagow, Lanarkshire, Scotland, found by Dr. Hunter, Carluke. (Magnified two diameters.)

about twice the natural size, from a drawing
taken by Mr. Peach. From it and from the
description it becomes apparent that the animal
was a true air-breather and a land-animal.

The earliest fossil insects hitherto found were
some specimens discovered by Mr. S. H. Scud-
der in the Devonian strata of New Brunswick.
Very recently M. Charles Bronnqiart has de-
scribed a fossil impression of the wing of an
insect (Figs. 3 and 4) which was found by M.
Douville, professor in the Ecole des Mines, in
the Middle Silurian sandstone of Jurques (Cal-
vados), France. The specimen is imperfectly
preserved, but most of the nervation is dis-
tinguishable. The wing, which is about thir-
ty-five millimetres long, belonged to an insect
of the family of the *Blattidae*. The humeral
field is broad, and there can be perceived on
the specimen the upper humeral vein, the
lower humeral vein, bifurcated at its extremi-
ty; the vitrean or median vein, also divided
into two branches; and the upper and lower discoidal veins, with oblique divisions reuniting at the end, as may be still observed among some of the Blattids of our own epoch. It is also possible to trace the anal vein, which is nearly straight and reaches almost to the end of the wing, and the auxiliary veins, which are parallel to it. The length of the anal nervation and the inferior breadth of the auxiliary field are remarkable peculiarities, and distinguish this impression from all other wings of Blattiidae, both living and fossil. The Progonoblatina Fritschii (Heer) and the Gerabblattina fasicera (Scudder) have a nervation similar to that of our Silurian wing. The name Palaeoblattina Dousieleana, after M. Dousiele, has been given to this fossil species. This fossil, being of the Middle Silurian, is considered superior in antiquity to both the Swedish and the Scottish scorpions, which are of the Upper Silurian age.

PAPER, CARBON OR IMPRESSION. The article known to the trade as impression-paper was first manufactured in England about 1825, and is employed for the duplication of writing or drawings by impressions, which may be increased in number by increasing the number of sheets of the impression-paper in the proportion of one of these to every two copies, the entire number being completed in one writing. Since 1890 the use of this mode of reduplication has come greatly in vogue, being employed by railroad and other corporations, by news agencies for the preparation of what are known as "manifold" reproductions of telegraphic news, and in all cases where rapid and extensive multiplication of copies is desired. The process of manufacture is simple in itself, but requires skillful manipulation, and some inventive shrewdness in the combination of the materials employed. A quantity of lamp-black being placed in a vat, sufficient lard-oil is added to it to bring it to the consistency of molasses. This mixture is thinly and regularly applied to sheets of tissue-paper, either by means of a brush or with a pad of lamb's-wool. This part of the process requires skill and expertise, as well as a delicate touch. After the paper is thus prepared, the superfine oil is dried out by placing the sheets between newspapers, until there is only sufficient left to hold the lamp-black surface to the paper. The preparation is applied either to one or both sides of the sheet. In the latter instance there is a double reproduction when it is used in taking impressions. In the United States this manufacture is chiefly carried on in New York, five or six firms only being engaged in it. The cost of manufacture is about two dollars a quire, and the profit is large. Besides the ordinary black impression-paper, colored sheets are produced by using as a base, instead of lamp-black, the various colored chalks, or crayons. The colored sheets are much employed in the reproduction of designs in fancy-work, for embroidery, etc.

PAPUA, or New Guinea, a large island north of Australia. The western half of the island is claimed by Holland, having been ceded by the chief of Tidore, one of the Molucca islands, who pretended to the sovereignty. The slave-trade and the "mack de mer" fishery formerly attracted Dutch traders. At that period some measure of political jurisdiction was maintained, but for half a century there has been no political connection and very little commercial intercourse with the Dutch. When Germany, France, and Italy began to consider the feasibility of planting colonies in the South Sea Islands, and turned their attention especially to New Guinea, the Australian colonists urged the British Government to annex the unclaimed half of New Guinea and the other islands of the Papuan Archipelago, on the ground that their settlement by foreign nations would constitute a military danger to Australia. The Australians have hitherto done little in the way of exploitation in Papua, and their influence is limited to enlighten; and Powell is the only person from the English colonies that has resided long among the natives and won their friendship and confidence, like the Italians D'Abernon and Beccari and the Russian Mikhailo Maciey. The Australians have traded with the coast tribes, but only from their ships. The barbarous labor traffic has been most frequently the object of their visits to Papua, New Britain, New Ireland, and the New Hebrides.

The trial of McNeil at Brisbane in November, 1884, revealed the methods of labor "recruiting," which have done more than anything else to arouse and perpetuate the hostility of the Papuans to the white race. McNeil, the first of these brutal labor-agents that has been convicted by a jury, and whose conviction was rendered possible by a recent act of the Queensland Parliament admitting the testimony of
PAPUA.

at the discretion of the judge, sailed in 1884, on a labor-cruise among the South Sea Islands. As required by a recent statute, the government agent went along, to see that the rights understood the nature of their en- tertained and were fairly and freely employed. Army, armed with Winchester repeating- Alexander at a village on the coast of New Guinea to recruit. The struggles that attend kidnapping operations are termed "scrimmages" in the phraseology of the slave-catchers; several natives were killed. At North Island another scrimmage, in which Jekanaka was captured, a number were and McNeil himself received a spear-wound. At Harris Island, north of Normanby, the natives were as usual enticed to the vessel on the pretense of trade. When the recruiting agent with a mixed force of whites and blacks, all armed with rifles, rowed in a whale-boat on the unsuspecting, they paddled for the shore with all their might. Pursuing the largest canoe, he was struck with a paddle and an islander in return shot him dead. All in the then jumped into the water, and a number were picked up by another boat, the schooner and "recruited." It was a murder that McNeil was sentenced to. By means of a series of massacres, McNeil's schooner Hopeful obtained 700 of laborers, bringing back to Queensland 100 showed in her hold. Such practices rendered it impossible for the English to obtain a footing on Papua or to explore it. Expeditions up the Fly river and Ovambongo on the coast, combining mission- purposes with the scheme of annexation, aided by the colonial governments, failed on account of the malarial climate, the able nature of the country, and the in- terest of the people. The mission- nalists and lawless, however, persevered and there was established an asylum with some of the tribes of the south, and planted mission stations among them. They reside themselves at Port Moresby. Recovery of gold in the mountains near Morobe brought a large number of ad- dition to the north shore of Papua, but they were unable to carry on mining operations, and the resources and the ty of obtaining a supply of food.

**English Annexation.**—When the British ministry repudiated the annexation of New Guinea by the Queensland executive, they announced the intention of giving the high commissioner in Foejoe jurisdiction over the acts of British sub- jects in the southern part of Papua, in view of the considerable trade that had been established with that coast. In May, 1884, the Secretary for the Colonies sent a dispatch expressing the deter- mination of the British Government to take the southern coast under its protection. The minis- ters explained in Parliament that the juris- diction to be established would extend to the subjects of foreign nations, and said that a high commissioner would be appointed for the new protectorate, who would be independent of the Governor of Foejoe, the official intrusted with jurisdiction over Papua as well as over the western Pacific generally. In September the Victorian Premier asked all the colonial governments to unite in urging the British Government to include in the protectorate the whole of Papua and the islands beyond. The ministry of New South Wales held back, but the next month all the colonies joined in the request. The Government had already issued instructions to Admiral Erskine, commanding the naval forces on the Australian station. Hugh Hastings Romilly, deputy-commissioner
for the western Pacific, was appointed to go to New Guinea and take measures for the exercise of the political and legal jurisdiction pending the nomination of a commissioner for that island. Acting under a mistaken impression of his functions, he issued a proclamation on October 25, taking under British protection all of New Guinea except the part claimed by the Netherlands.

Admiral Erskine, after receiving the official instructions, set sail in the Nelson, and on the 6th of November, from Jackson's Harbor, at Port Moresby, proclaimed the protectorate, as intended by the Imperial Government. There were fifty native chiefs present at the ceremony of raising the flag, and five British vessels of war lay off the shore. The chief of the greatest consequence was selected as the chief-paramount, although, in reality, the tribes are independent of each other. He was invested as the Queen's deputy-lieutenant by the be-stowal of a white crown bearing the Queen's likeness in the shape of a silver florin set in at the top. The Nelson, accompanied by three other vessels, then cruised along the shore, anchoring in four other commodious harbors, all difficult to enter, however, like Port Moresby, on account of coral-reefs. The protectorate was proclaimed with similar ceremonies at nine different places, the last being Tesi Island. In each place a chief-paramount was selected and constituted the repository of Imperial authority with a symbol of investiture. The admiral announced to the natives that the object of the protectorate was to render their lives and liberty more secure.

The protectorate established by Great Britain over the south coast of New Guinea extends from the 141st meridian, the boundary of the Dutch possessions, eastward to East Cape, in Gosenen's Straits, including the islands adjacent to the mainland in the straits as far south and east as Kosman Island. The extent of the protectorate inland is not defined further than in its limitation to the country adjacent to the shore. No persons will be permitted to settle on the land without the authority of the protectorate, unless expressly authorized by the commissioner. This restriction is only provisional, pending the adoption of regulations for the occupation of land after the appointment of the high commissioner. As the country is thinly populated, and the soil admirably tilled, there is little opportunity for agricultural settlement.

German Annexation.—It was reported in the early summer that the English Government had altered its intentions regarding annexations in the Papuan Archipelago on account of the attitude of Prince Bismarck. In the diplomatic controversy on the subject of the colonial policy of Germany, and in the negotiations into which the British Cabinet was drawn, the Papuan islands were undoubtedly mentioned. In October the "North German Gazette" made the semi-official communication that, as the result of an exchange of views, the English Government had resolved to place under its protection only the south coast of New Guinea and the islands immediately adjacent. In reference to this statement, Mr. Ashley denied that there was an arrangement with Germany as to her occupation of the northern part of the island. The occupation followed, however, to the dismay and indignation of the Australians. The colonial politicians openly discussed the question of separation from the mother-country, and compared the situation to that which led to the revolt of the American colonists.

Mr. Service, in a memorandum dated December 20, hinted at such a result. "Australia was not allowed," he complains, "to act for herself, and the Imperial Government will not act on her behalf. Meanwhile, Australia has to stand by and see territories, the possession of which she regards as essential to her safety and well-being, pass to another power." He invited the colonies to join in a collective protest against the German annexation of a portion of New Guinea. The Colonial Secretary of New South Wales declined to unite in such protest until information was received whether the annexation was the result of an agreement, and whether steps would be taken to extend the British protectorate to the German line and over all the islands of strategic importance in that part of the Pacific.

A few days after the formal occupation of the southern shore by England, German naval officers, who sailed from Australia about the same time that the English admiral left for New Guinea, hoisted the German flag at twelve places on the northern shore of New Guinea and on the adjacent islands of New Britain and New Ireland, besides the Admiralty Islands, and several other productive islands in this part of the ocean. The territory annexed on the Papuan coast is Cape King William and the neighboring districts on the northeastern side. It is described as the most healthful part, and admirably adapted for colonization. The land rises in terraces to the Finisterre Mountains. There is plenty of good pasture for grazing purposes within the protectorate, and many streams flowing out of the mountains. The natives are friendly. The natural products of the northeast coast are manifold and abundant, and of sufficient commercial value to start a busy trade. This is the very district in which a party of English colonists intended to settle in 1883, if their organization had not been dis-couragement by the Government.

Paraguay, a republic in South America; area, 91,650 square miles.

Population.—The last census (1879) fixes the population at 345,048, exclusive of 60,000 semi-civilized Indians and 70,000 wild Indians. Since the war of 1865-'70, the number of females has greatly predominated. The number of foreigners is estimated at 7,000, more than one third of whom are Indians. Next to them, the most numerous are Brazilians, Argentines, Spaniards, and Portuguese. Since 1883 the
PARAGUAY.

Commerce.—The commercial movements in two years were as follow:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Imports</th>
<th>Exports</th>
<th>Amount of duty collected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1881</td>
<td>$1,290,000</td>
<td>$1,929,000</td>
<td>$427,000</td>
</tr>
<tr>
<td>1882</td>
<td>$1,260,000</td>
<td>$1,520,000</td>
<td>$471,000</td>
</tr>
</tbody>
</table>

The chief articles of import in 1882 were: Cotton goods, $264,578; groceries, $280,748; liquors, $195,779; hardware, $142,145; woollens and linens, $85,315; and drugs, $35,332. The exports consisted of yerba maté or Paraguay tea, $964,800; leaf-tobacco and cigars, $410,390; hides and skins, $143,469; oranges, $25,072; beside woods, tanning-bark, essence of orange-blossoms, leather, and minor articles.

PARKER, WILLARD, an American surgeon and physician, born in Lyndeborough, N. H., Sept. 2, 1800; died in New York city, April 25, 1884. He was the son of a New England farmer, and the eldest child of a family that numbered five sons and two daughters. Before he was five years old his parents went to Chelmsford, Mass., where a home had been owned by his ancestors since the year 1652. He there began the education that is common to New England boys; working on his father's farm in summer, and attending the village school in winter. Later, he taught the same school, and saved up money with which to go to college. A long course of economy was required; and when, in 1822, he entered Harvard College, he was five or six years older than the average freshman of that time. George Bancroft was one of his tutors. The most noticeable incident of the four-years' course was one that determined his choice of a profession. He had begun his studies with a partly formed plan of entering the ministry. His room-mate fell seriously ill; the cause of the disease was obscure. Dr. John C. Warren, being called, recognized the case as one of strangled hernia, and that it was so far advanced as to require immediate surgical aid. Dr. Warren was successful in relieving the patient by the method of tazia; his life was saved, and young Parker was so deeply impressed with the skill and success of the operation that he abandoned the idea of studying theology and chose surgery for his profession. He was graduated with fair standing in 1826; beginning his medical studies at once, he was entered at the Harvard Medical School, where Prof. Warren was one of his instructors. On completing the two prescribed annual courses of lectures and receiving his medical degree, he entered the Chelsea Hospital as interne. Henceforward his life became a matter of public record. In 1830 he was appointed Professor of Anatomy; in 1833, Professor of Surgery, in the Berkshire Medical College; and in 1836 and 1837 he visited the great hospitals of Paris and London. On his return he was solicited to go to Cincinnati to accept a surgical professorship, but declined, and chose New York city as his home. He
was appointed Professor of Surgery in the New York College of Physicians and Surgeons in 1839, a post which he held for thirty years. In connection with that institution he established in 1840 the first college clinic in the United States—a feature of medical instruction that has been extended since then to the larger medical schools of the country. With the Bellevue Hospital of New York he was connected for many years as attending and consulting surgeon. He was made President of the New York State Inebriate Asylum in 1868. His active and honorary appointments were numerous. He had a very extensive private practice. His remarkable skill and knowledge, his strict professional and personal integrity, his abounding energy and breezy humor, endeared him to a large circle of friends and patients. He was a man of few enemies, and few American surgeons have filled more acceptably so many positions of high responsibility as Dr. Parker, or filled them with more capacity, zeal, and vigor. His eminent success in treatment was based upon great knowledge and skill, and absolute good faith in the management of cases. In 1864, first in this country, he described and reported cases of malignant pustule; and he first discriminated the phenomena of concussion of the nerve-centers from those of nerve-conussion itself. Dr. Parker's extensive private practice prevented him from giving much time to writing; yet he left a considerable number of monographs upon surgical and medical subjects. Among these may be mentioned "Cystotomy" ("New York Medical Journal," 1860); "Spontaneous Fractures" ("New York Journal of Medicine," 1853); "On the High Operation for Stone in the Female" ("New York Journal of Medicine," 1855); "The Concussion of Nerves" ("New York Medical Times," 1865); "Ligation of the Common Carolus" ("New York Medical Journal," 1867); "Hospital Gangrene" ("American Medical Times," 1863); "Ligation of the Subclavian Artery" ("American Medical Times," 1864); "Spermatorrhea" ("American Medical Times," 1864); and a "Lecture on Cancer" ("New York Medical Record," 1873).

PATENTS. The business of the United States Patent-Office was about the same in 1884 as in 1885. Its total receipts were over $1,000,000, and its surplus for the year was over $100,000.

Statistics.—Below are some tabulated statements of the year's work.

| Receipts | $1,073,788 90 |
| Expenditures | $715,079 15 |

Receipts over expenditures | $358,709 75
Expenditures for salaries | $527,908 45
Applications filed for patents, cavaets, trade-marks, and labels | 49,710
Applications filed for patents only | 49,600
Patents issued | 49,500
Patents issued during the year | 12,291
Trade-marks and labels registered | 1,994
Applications for patents pending | 11,364
Withheld for payment of final fee | 2,529
Patents issued to citizens of the United States | 49,018
Patents issued to foreigners | 1,354

The designating numbers of first and last patent, etc., for 1884, were:

| DATE | First number 1884. | 992,016 | 14,531 | 19,539 | 7,871 | 1,446 |
| | Last number 1884. | 999,916 | 14,645 | 19,649 | 8,589 | 1,256 |

Among the citizens of foreign countries, those of England received 438 patents; of Germany, 263; of Canada, 220; of France, 143. From these as leaders the list runs down; several states, such as Venezuela, only receiving one patent. Among the citizens of the different States of the Union, those of Connecticut with 896 patents, head the per capita list with one patent for every 694 inhabitants; the District of Columbia, with 207, has one for every 888 inhabitants; New York, with 3,224, has one for every 1,295 inhabitants; North Carolina comes at the foot of the list with 56, which is one for every 8,185 inhabitants.

Annual Reports.—The Commissioner's annual report for 1884 was published in the "Official Gazette" for Feb. 10, 1885. It bears date Jan. 31, 1885.

Patents.—The business of the English Patent-Office under the new law was very large, most 17,000 patents being issued. This in a few years will render the British reports of greater comparative importance in determining specifications. There appears to be no probability of an international patent law for some time to come. The patent laws of the different countries have been so varied in their form that an assimilation at this late date would tend to much confusion, at least until one generation of patents was disposed of.

Litigation.—The year was signalized by several important litigations. After four years devoted to the taking of testimony and completing the record, the great Bell-Draw-leaf telephone suit to trial before Judge Wallace in the United States Circuit Court in New York. The printed record, briefs, abstracts of testimony, etc., filled twenty octavo volumes. In its argument nearly two weeks were consumed. Messrs. Edward N. Dickerson and John Conkling were among the counsel for the Bell Company; while ex-Judge Lysander Hill and Senator Edmunds, among others, opposed them. The case, which was probably the greatest patent suit ever tried, was completed to involve $100,000,000. It was decided by Judge Wallace in favor of the Bell Telephone Company. The famous patents granted to Alexander Graham Bell for the electrical telephone were attacked in this suit, and the decision affirmed their validity. The Bell patents have been declared invalid in Canada, for non-compliance with the requisite conditions.

The treatment of patents, and especially of reissued patents, by the Supreme Court of the United States, has been as severe as ever. Resolutions are decided against to such an extent that it is very risky to bring suit upon one, a
ت tempor of the court. One of t
posing this tribunal has seen fit, 3
o dissent most emphatically from his
In the case of Mahn against Har
dec. 1, 1884, and reported in
ial Gazette" of the United States
sses himself at the end of the dis
alized to: "In several cases pre
cess this one, especially Miller
et Brass Company (104 U. S. R., re
 doctrine [of the invalidity
 for ladies] has been stated in the
on grounds were also given as the
he of the judgment. I also hoped that
he case where the question oc
cided, my brethren would not adopt
consideration. This must be my
any apparent sequesence in it
I am of opinion that reissued pa
ated to the same consideration as
by the Government." This
as received with great interest by
ers, who hope for more moderate
emulation concerning the famous barbed
patents is still in progress. These
ually valuable. In one year, $300-
pent in litigation concerning them.
ng for the President has ap
artin V. Montgomery as Commiss
'tents, in place of Mr. Butterworth,
The new official was born Oct. 20,
aton Rapids, Eaton county, Mich.
mitted to the bar in the Circuit
ty of Eaton, in October,
94 that time he has been admitted
 in all the Federal courts, including
' Court. His practice in the State
has been very extensive.
—The following is an abstract of a
se more generally useful decisio
ship, the famous United States
1884. The references are to
volume of the "Official Gazette" of
cess of operating a mechanism is not
. (Dreyfoss vs. Weisse, xxvi, 639.)
ent of patent without knowl
e does not work an abandonment.
. Howard, xxvi, 893.)
an application for a patent, without
show that the thing was ever con
is not enough to defeat a patent.
.)
claim of a reissue does not
ier claims invalid. (Reay vs. Ray
patentee has sold his right, title, and
, to, and under a patent, and after
ances another patent of prior date
orse of defeating his assignee's
was held that such proceeding is
 unjust and inequitable, and the
le operates as a license. (Curran vs.
xxvii, 1819.)
A photograph produced by an operator who
posed the subject, arranging the costume, drapery, etc., was held to be a work of art and
subject of copyright. (Burrow Giles Lith. Co.
s. Sarony, xxvii, 418.)
Every patent for a product or composition
of matter must identify it so that it can be
recognized apart from the description of the
process for making it, or else the invention
will be limited to the process. Also, artificial
alizarine is not patentable as a product, be
cause it is set forth as an old thing made arti
icially. (Cochrane vs. Badische Anilin und
Soda Fabrik, xxvii, 814.)
When an original patent is valid and its re
issue invalid, there is no reason why a second
reissue, embracing the valid claim of the origi
nal patent, should not be valid. (G. Powder
Co. vs. S. Nitro-P. Co., xxvii, 99.)
What would infringe the patent if later,
anticipates if earlier. (Peters vs. Active Mfg.
Company, xxviii, 1102.)
A structure embracing all the elements of the
patented article and also another feature not
found therein, is an infringement. (Ros
er vs. Simon, xxvii, 194.)
An officer of a corporation actively partici
pating in an infringement by said corporation,
is liable therefor. (Nat. Car-Brake Shoe Co.
vs. Terre Haute Car Mfg. Co., xxvii, 1097.)
In the same case it was held that "the rec
cord at Washington is notice to all the world."
The provisions of the statute as to limitation
of United States patents, as influenced by pre
viously granted foreign patents, only apply to
the term for which the foreign patent was
originally granted, and not to any accidental
laping of the same. (Holmes E. P. Co. vs.
Met. B. A. Co., xxviii, 1189.)
When one party makes one part of a patent
ed combination, and another makes the other
part, and the parts can not be used separately,
there is joint infringement. (Schneider vs.
Pountney, xxix, 84.)
The fact that a patented article was imme
diately successful in the trade is evidence of
invention, and want of any success indicates
an abandoned experiment. (Hicks vs. Otto,
xxix, 865.)
Business circulants issued only to the trade
are not publications within the meaning of the
statute. (N. P. Fermentation Co. vs. Koch,
xxix, 535.)
PEEL, ARTHUR WELLESLEY, an English states
man, born in August, 1829. He is the youngest
son of the late Sir Robert Peel, who was Prime
Minister in 1841-'46. The son was educated
at Balliol College, Oxford, being graduated in
1852, and studied law, but was never called to
the bar. In 1868 he was a candidate for mem
ber of Parliament from Coventry, but was de
feated. Two years later he was returned as a
Liberal for Warwick, and he has represented that
constituency ever since. He has had wide
experience in the government service, being
Secretary to the Poor-Law Board from Decem-
there was received, for the general fund, $3,735,279.87, and for the sinking fund, $2,491,679.81, making the total receipts $6,226,959.68.

For the same period the payments were, for the general fund, $3,735,279.87, and for the sinking fund, $2,491,679.81, making the total payments $6,226,959.68.

While the receipts were less than the expenditures, yet, with the cash balance on hand, Dec. 1, 1883, from former years, the Treasurer was enabled to meet the current expenses during the year, and, at the same time, add to the sinking fund $2,190,434, and close the year with a balance in the treasury of $11,758.11.

The apparent excess of payments over receipts for the year is $418,952.92. Of this excess, however, $774,717.11 is invested in the sinking fund to secure the payment of the debt of the State. The leaves, therefore, as the real cost of expenses over receipts, $662,268.81. This difference may be accounted for by a net decrease in the receipts over the previous year of $374,468.66. Of the gross decrease, $547,758.32 occurred in the receipts from the five items of tax on capital stock of corporations, of gross receipts, of collateral inheritance tax, of retail licenses, and of tavern licenses. The excess of payments over the previous fiscal year is due mainly to the extra session of the Legislature. The increased payments to charitable and reformatory institutions, to public printing, to normal and common schools, to penitentiaries, and to costs in suits against dealers, six items amounted to $258,802.87.

The following is a statement of the condition of the public debt:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total debt</td>
<td>$619,000.50</td>
</tr>
<tr>
<td>Three and a half per cent. loans, due 1912</td>
<td>$1,750,000</td>
</tr>
<tr>
<td>Three and a half per cent. loans, due 1913</td>
<td>$1,970,000</td>
</tr>
<tr>
<td>Per cent. loans of March 30, 1877, due 1899</td>
<td>$1,724,900</td>
</tr>
<tr>
<td>Four per cent. loans of 1879, due 1894</td>
<td>$1,366,000</td>
</tr>
<tr>
<td>Four per cent. loans of 1879, due 1879</td>
<td>$1,366,000</td>
</tr>
<tr>
<td>Miscellaneous loans upon which interest has ceased</td>
<td>$10,000</td>
</tr>
<tr>
<td>Six per cent. agricultural bond</td>
<td>$500,000</td>
</tr>
</tbody>
</table>

The following are the chief items of receipts and disbursements for 1884:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receipts</td>
<td></td>
</tr>
<tr>
<td>Tax on capital stock</td>
<td>$1,750,000</td>
</tr>
<tr>
<td>Tax on tobacco</td>
<td>$774,717</td>
</tr>
<tr>
<td>Tax on gross receipts</td>
<td>$774,717</td>
</tr>
<tr>
<td>Tax on premiums</td>
<td>$810,130</td>
</tr>
<tr>
<td>Tax on back-stock</td>
<td>$873,365</td>
</tr>
<tr>
<td>Tax on wine</td>
<td>$774,717</td>
</tr>
<tr>
<td>Tax on licenses</td>
<td>$774,717</td>
</tr>
<tr>
<td>Bonds on charters</td>
<td>$774,717</td>
</tr>
<tr>
<td>Notary public commissions</td>
<td>$774,717</td>
</tr>
</tbody>
</table>
PENNSYLVANIA. 645

<table>
<thead>
<tr>
<th>Tax</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax</td>
<td>641,655.48</td>
</tr>
<tr>
<td>st</td>
<td>81,754.71</td>
</tr>
<tr>
<td>6%</td>
<td>215,058.48</td>
</tr>
<tr>
<td>8%</td>
<td>22,473.51</td>
</tr>
<tr>
<td>10%</td>
<td>14,871.38</td>
</tr>
<tr>
<td>12%</td>
<td>450,000.00</td>
</tr>
<tr>
<td>219,674.71</td>
<td></td>
</tr>
</tbody>
</table>

DISBURSEMENTS.

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>state tax</td>
<td>279,748.83</td>
</tr>
<tr>
<td>state</td>
<td>21,114.13</td>
</tr>
<tr>
<td>local</td>
<td>200,047.98</td>
</tr>
<tr>
<td>teachers</td>
<td>956,159.14</td>
</tr>
<tr>
<td>pupils</td>
<td>7,000.00</td>
</tr>
<tr>
<td>salaries</td>
<td>5,467.93</td>
</tr>
<tr>
<td>contingencies</td>
<td>68,942.51</td>
</tr>
<tr>
<td>delinquent</td>
<td>231,768.98</td>
</tr>
<tr>
<td>trending</td>
<td>50,414.91</td>
</tr>
<tr>
<td>clerks</td>
<td>64,927.05</td>
</tr>
<tr>
<td>salaries &amp; wages</td>
<td>215,345.00</td>
</tr>
<tr>
<td>alms</td>
<td>10,000.00</td>
</tr>
<tr>
<td>duties</td>
<td>185,255.65</td>
</tr>
<tr>
<td>taxes</td>
<td>819,531.55</td>
</tr>
<tr>
<td>accounts</td>
<td>774,000.00</td>
</tr>
<tr>
<td>court costs</td>
<td>45,235.87</td>
</tr>
<tr>
<td>court fees</td>
<td>1,450,000.00</td>
</tr>
<tr>
<td>school board</td>
<td>6,700.00</td>
</tr>
</tbody>
</table>

The following are statistics of the year ending June 2, 1884:

- Salaries of teachers: 3,241
- Pupil attendance: 1,450,000
- School vessels: 100
- School buildings: 4,000
- School buildings, debt, and interest: 2,872,345.66
- Appropriations for the year: $1,394,800

Speaking of the liquor traffic, the Governor

The act of 1874 fails to carry out the spirit and intent of the Constitution, and continues the per diem idea, if not in all its provisions, at least in that part of it giving members ten dollars ($10) a day for each day not exceeding fifty (50) that the Legislature extends its session beyond one hundred days. The result has been to bring scandal and reproach upon the Legislature among the people, who have not hesitated to suspect that the prolongation of its sessions by the General Assembly to the utmost limit of time, and which compensation could be claimed, has been for the sole purpose of increasing its pay to the last dollar it may lawfully take from the Treasury.
states the number of licensed drinking-places in Philadelphia at 6,858, being one for every 128 of the population! He also urges upon the Legislature the passage of an adequate act to carry into effect the constitution provision against discriminations by railroad companies, characterizing as delusive the statute of 1885 in that connection.

**Political.**—The Republican State Convention met in Harrisburg on the 16th of April, chose delegates to the National Convention, nominated candidates for President and Congress, and in a large and declared James G. Blaine its choice for presidential candidate. Its platform contained the following:

We unqualifiedly approve and demand the continuance of that system of protection to home industry which has proved itself to be the best means of national independence, the incentive to industrial skill and development, and the guarantee of a just and adequate scale of wages for labor; and we denounce all attempts to reduce the rates of tariff below the level which will accomplish these results.

While revising no past differences, and earnestly seeking good-will between all portions of our common country, we insist that the guarantees of the constitutional amendments shall be faithfully observed; we demand that every citizen shall be protected in his right to cast a free ballot and have it honestly counted; and we denounce every attempt to deny or abridge this right, whether by fraud or violence.

As a dual standard of the precious metals can only be maintained by the concurrence and co-operation of the commercial nations of the world, and as this can be had at the present time, and as the attempt to maintain such a standard by the United States alone is calculated to produce serious complication in our monetary system, it is earnestly recommended to our Senators and Representatives in Congress that they urge such legislation as will suspend the coinage of the standard silver dollar until united action with the other nations can be had.

We also recommend the retirement of the trade-dollar in exchange for standard dollars, without increasing the monthly issue of the latter.

We commend every effort to sustain and promote through civil-service reform in all departments of the national and state Governments.

The Democratic State Convention, held for similar purposes, met in Allentown on the 9th of April, and declared Samuel J. Randall its choice for presidential candidate. The platform adopted by it contained the following:

We favor a tariff for revenue, limited to the necessities of the Government economically administered and so adjusted in its application as to prevent unusual burdens and encourage productive industries at home and afford just compensation to labor, but not to create and foster monopolies; and to this end we favor the abolition of the internal revenue system of taxes, and such adjustment of the existing tariff duties as will be consistent with these principles.

Every legitimate effort of labor to better its condition, advance its rewards, and protect its rights, commands the sympathy and support of the Democratic party. The importation under contract of foreign pauper labor is an evil which should be remedied by judicious legislation.

The refusal of the Republican members of the Legislature to agree to a just apportionment of the State was a flagrant violation of the Constitution, for unworthy partisan purposes. We denounce their course; we approve the determination of the Democratic Governor, Representatives, and Senators to insist upon an honest and fair apportionment, and we commend the present Democratic administration for its fidelity to the Constitution, enforcement of the laws, and honest and capable discharge of public duty.

On the 4th of November the Republicans were elected. The vote for President was as follows: Republican, 473,804; Democrat, 392,785; Greenback, 16,992; Fusion, 15,283. For Congressman at large, Osborne, Republican, received 476,546; W. H. Davis, Democrat, 401,042. The Greenback vote was 9,684; Prohibition, 471. Of the district Congressmen chosen this election, 18 are Republicans, 5 Democrats, and one a Greenbacker. The Legislature of 1885 consists of 81 Republicans and 11 Democrats in the Senate, and 141 Republicans and 60 Democrats in the House.

**Persia,** an empire in Asia. The Government is an absolute monarchy, based on the precepts of the Koran, resembling very nearly in constitution that of the Turkish Empire. The Shah, or Emperor, claims absolute power as the viceroy of the Prophet. Under him the Government is carried on by a ministry composed of the Vizier-i-Azem, who directs the foreign policy and acts as military commander-in-chief; the Ameen-ed-Dolah or treasurer; and five subordinate ministers created after the model of European cabinets. The country is divided into fifteen provinces, each governed by a Beglerbeg, who is usually a prince of the royal family. The towns and villages elect their own magistrates.

The reigning Shah is Nassar-ed-Din, born Sept. 4, 1829, who succeeded his father, Shih Mohammed, Sept. 10, 1848. He is the fourth sovereign of the Kadjar family. (For statistics of area and population, see "Annual Cyclopedia" for 1888.)

**Finances.**—In 1882 the receipts were about 40,000,000 francs in money and 7,000,000 francs paid in kind—together 47,000,000 francs, of which 8,000,000 francs came from direct taxes, such as the land tax, personal tax, and taxes, etc.—and 8,940,000 francs from customs. The expenditures were about 45,000,000 francs, of which 19,000,000 francs were for the army, 9,000,000 francs for the courts, 4,000,000 francs for the clergy, etc., 2,000,000 francs for gifts to great families, the Afghan, and others, 700,000 francs for foreign affairs, 1,500,000 francs for the other ministries, and 300,000 francs for colleges. There is no debt.

**Commerces and Industry.**—The imports amount to about 2,500,000 tomans (1 toman = 82.5s.) and the exports to 1,250,000 tomans. Formerly the exports largely exceeded the imports, but since a taste has sprung up among the wealthy for European dress articles and other manufactures, the balance of trade is as large as the other way. The trade is with Russia in the north and with Great Britain in the south. The imports from both countries are about equal, though the Russian trade is rapidly growing. English cotton cloths constitute nearly half of the total imports. The Indian
riven out the Russian imports of this
The sugar imports come from Mar-
d Russia; glass and porcelain from
Austria, and China; candles, petro-
,, and iron manufactures from Russia;
fabrics from France. The exports of
Persia, which declined in consequence
t-worm disease after 1868, have not
seir former magnitude, as the demand
raw silk is less, though the cultivate-
stantly increased. Opium and tobacco
Persia are of remarkable narcotic
The cultivation of the poppy was ex-
tended when Persian opium be-
 shipped in English vessels to China.
an famine of 1871—72 was largely
wise conversion of the grain area
yelds. The Indian Government
without access to choke off the
competition by forbidding the tran-
sm through India. In 1879 the im-
of the Persian product in the Chinese
ts amounted to 4,000 chests of 125
ch. In 1882 it rose to 8,000 chests,
tenth the quantity of the Indian im-
Persian opium is also exported, mixed
England. A good crop furnishes
6,000 to 8,000 chests of 140
sacks, worth from $450 to $500 a
recent years an insect has damaged
The tobacco grown in the dry
regions is in great request for the
throughout the Orient. A Turkish
or cigarettes is now grown on the
the Caspian. Wheat is raised in suf-
utility to furnish a surplus for export
cession, Bagdad, India, and sometimes
1. Rye is cultivated in the mountain-
Millet is grown everywhere, and
only precious stone is the turquois,
oc in such quantities as to pro-
siderable surplus for export to Rus-
and beans are very prolific, and a
favorable article of food. The mel-
summer the vines produce red and
rect wines and raisins are produced
quantities, and dates, which are ex-
ly to America. In many parts of
iculture is only made possible by arti-
Some of the works are mar-
engineering skill. The Persians are
the extraction of the essential oil of
the jasmine. The essence of rose
exported to India. Cotton is raised
though the separation of the seeds
mushed successfully. Mulder grows
bundance. Indigo is raised, and is
cted from India. Saffron, which was
vitated extensively, has been sup-
y the aniline dyes. The Shah, with
of preserving the reputation of the
haws, and embroideries of Persia,
terdicted the importation of aniline
The products of the artistic handi-
importance in the commerce of the Per-
a, although artistic taste and inven-
tion and manual skill have greatly declined in
recent times. The country has been stripped
in a great measure of the choice productions
of former generations which would serve as
models. Armenian and Persian brokers still
 scour the country to fill the warehouses of
Constantinople, the market from which Eu-
rope supplies itself with Oriental curiosities.
Embroideries in gold, silver, and silk are still
produced in great number and of admirable
designs. The gold and silver wire is imported
from Germany. Persian carpets are also still
good in quality, design, and, except where ani-
line dyes are used, in color, when compared
with Western makes, though much inferior to
the old handiwork. Engraved talismans of
carnelian, quartz, and chalcedony, steel vases
inlaid with gold, others of brass engraved with
arabesque patterns or with perforated designs,
the mosaics of Shiraz, and gold and silver fil-
gree, are other articles that sustain Persia's
reputation for ornamental art. Decorated
weapons and armor are made in Isphahan, but
are not comparable with the ancient Khorassan
work. In enameling, also, only small objects
of slight merit represent the profuse and be-
tiful work of past generations. The mineral
treasures of Persia are copper, iron, lead, ar-
senic, antimony, cobalt, manganese, alum, bo-
rax, saltpeter, blue vitriol, etc. Gypsum is
found everywhere, and is used in building for
stucco and ornaments. The supply of salt in
the steppe is inexhaustible. Coal is found in
vast beds, which can be worked without diffi-
culty. The Persian marble is remarkable for
the beautiful blending of white, green, and pink
colors. The mines of Persia are but little
worked, owing to the lack of capital and knowl-
dge of the cost of transportation. The
return of the turquois, which is apt to lose its brilliant blue hues and turn
green, and is in less demand since the Vienna
imitations proved so deceptive. The pearl-fish-
eries of the Persian Gulf are richer than all
others in the world. The pearl-fisheries are
on the Arabian side. The fisheries of the gulf,
conducted by Russian Armenians, produce
large quantities of edible fishes, besides about
825,000 kiles of caviare and 2,200 kiles of
islinglass. The animal products exported from
Persia are goat and sheep skins of poor qual-
ity, and hair of the Angora goat.

Political Conditions.—An improvement in the
political administration has been noticed in
late years, particularly since the visit of the
Shah to Europe. The governors can no longer
practice oppression and extortion unchecked,
because the Shah watches them closely and
permits his subjects in urgent cases to appeal
to him directly through the telegraph.
The absence of a record of land and water rights,
and the arbitrary interference of the priest-
hood, preclude a strict control. By marrying
royal princesses to the heads of clans they
have been attached to the dynasty and brought
to accept a central rule. Some of the more
unmanageable khans have been put out of the way by different means. The establishment of Persian as the only official language, taking the place of the Tartar, Kurdish, and Arabic tongues in various districts, has helped to centralize the administration. There is more security than formerly, and districts that could only be visited with passports and letters to the local chiefs, can now be traversed with entire safety.

The Russian Advance.—The political and military power of Russia in Central Asia, and Russian commercial interests, are interdependent and expand together. The occupation of Merv was followed by a large development of trade, and when Sarakhs was occupied, a place that is situated on the natural commercial route to India at the most advantageous point, the commercial relations with the neighboring parts of Persia and with Afghanistan were greatly strengthened. The expansion of Russian interests in Afghanistan, and of Russian influence among the people, which the Amirs of Cabul and Candahar, who are in the pay of England, were powerless to check, made a new “rectification of the Persian frontier” desirable. The Shah, for the sake of Persian independence, now seriously threatened by the growth of Russian power on the east, as well as on the north, and the political influence gained by the Czar in Persia, determined to resist further encroachments. The negotiations to secure a strip of territory on the eastern edge of Iran, and a proposal to lease Meshed for an annual payment of 50,000 tomans, met with refusals, with which the Russian Government expressed itself satisfied. Meshed, it was explained, was a sacred place, containing the tomb of Iman Reza, the Shiite apostle. Prince Mahomed Taky Mirza, the brother of the Shah, was dismissed from his post of Governor of Meshed at the same time. He had proposed to have been a friend of Russia. Several ministers were dismissed during the year, with the result of emancipating the Government to some extent from Russian influence, yet without inviting a breach of the friendly relations with the Czar’s Government. The Russians have offered to aid in improving the internal communications of Persia by constructing a railroad from Reshad to Teheran, with the prospect of extending it to the Persian Gulf. Rival English projects are the improvement of navigation in the Karun, and a railroad between Teheran and Bagdad. The German Government established an embassy at Teheran in the autumn.

PERU, a republic in South America. (For details relating to area, population, etc., see “Annual Cyclopaedia” for 1883.)

Government.—The President is Gen. Iglesias. The Cabinet is composed of the following ministers: Minister of Justice and President of the Council, Señor Mariano Castro Zaldívar; Minister of Foreign Affairs, Señor Baltasar García Urrutia; Minister of the Interior, Señor Igna-
The Peruvian Congress convened. Gen. Iglesias took the oath of the constitutional President of the Republic. 10. The Constituent Assembly ratified the peace with Chili. 20. The following foreign nations recognized the government of: Ecuador, Bolivia, Peru, Costa Rica, Nicaragua, the Swiss Confederation, and Sweden, besides the recognition of the Bariquita Cabinet, formed a new one early in April by Great Britain and France in May. On May 27th Mr. Elías Jiménez minister at Washington, received by President Arthur, to present his credentials.

PHARMACY. The discovery and introduction of cocaine hydrochloride as a local anesthetic was the important event in scientific pharmacy during 1884. A steady advancement in all branches of the art is apparent.

Colleges. A bill incorporating the Louisville School of Pharmacy for Women was passed by the Kentucky Legislature during the early part of the year. The School of Pharmacy connected with Purdue University, Lafayette, Ind., was successfully inaugurated. The Cleveland School of Pharmacy, on account of the stringent pharmacy law adopted in Ohio, has introduced a higher course of studies, and now ranks with the other colleges of pharmacy. An entrance examination was demanded for the first time this year from students entering the New York College of Pharmacy.

Legislation. The following States have pharmacy laws: Connecticut, Delaware, Georgia, Illinois, Kentucky, Maine, Missouri, New Hampshire, New Jersey, New York, North Carolina, Ohio, Rhode Island, South Carolina, West Virginia, and Wisconsin. The law in Ohio was enacted in March, 1884, while that...
PHARMACY.

of New York was signed in May. Local laws are in force at Philadelphia, San Francisco, Buffalo, New York, and Brooklyn.

Associations.—The thirty-second annual meeting of the American Pharmaceutical Association was held at Milwaukee, Wis., beginning on August 26. Its sessions were continued during three days. John Ingalls, of Georgia, was chosen President, and John M. Maitch, of Pennsylvania, Permanent Secretary. The drug clerks of many of our larger cities have formed themselves into societies for mutual protection and scientific advancement. The "New York Protective Association of Drug-Clerks" was organized in March. In October the "Orleans Drug-Clerks' Association" of New Orleans came into existence.

Trade Organizations.—The "National Retail Druggists' Association" convened at Milwaukee, Wis., on August 25. The "Camplin plan" was approved. Henry Canning, of Massachusetts, was chosen President, and J. W. Colcord, of Massachusetts, Secretary. The ninth annual meeting of the "National Wholesale Drug Association" was held at St. Louis, Mo., beginning on October 22. The "Camplin plan" and "Rebate plan" were very thoroughly discussed, and the former received the approval of the Association. C. F. G. Meyer, of Missouri, was chosen President, and A. E. Meriam, of Ohio, Secretary.

Trade Relations.—For the better protection of the trade interests of the retail druggists, various plans have been suggested and adopted. Early in the year the New York Druggists' Union was organized, shortly after a Brooklyn Drug Union was formed, and soon, throughout the country, city and county associations were organized for the purpose of maintaining full prices for proprietary goods. At the solicitation of the retailers, many of the manufacturers combined, and the "Camplin plan" was adopted.

Its essential features are, that by the united action of manufacturers no goods can be sold by any jobber, nor by any retailer, except at a fixed schedule of prices. Any one violating the rules of the Association was cut off and thereby prohibited from receiving goods from those in the plan. In this manner the retail druggists thought themselves able to control the prices of various proprietary articles. For a time the plan promised success, but, as many of the leading houses have withdrawn from the plan, its future cannot be accepted as assured.

Literature.—Among the important books published during the year were: "A Companion to the United States Pharmacopoeia," by Oscar Oldberg and Otto A. Wall, and a third edition of "The National Dispensatory," by Alfred Stillé and John M. Maisch. This book was prepared from the recent editions of the Pharmacopoeias of the United States, Germany, France, and Great Britain, all of which have recently been revised and have been published since 1880. In April was published the "New York and Brooklyn Formulary," a book containing unofficial formulas that are always in a dispensary pharmacy. It was the joint product of committees appointed from the different pharmaceutical organizations of both cities. A journal entitled "American Drugs and Medicines," devoted to the historical and scientific discussion of the botany, pharmacy, chemistry, and therapeutics of the medicinal plants of America, was begun in March, in Cincinnati.

PHILLIPS, WENDELL, an American philanthropist and orator, born in Boston, Mass. Nov. 29, 1811; died there, Feb. 2, 1884. His father was John Phillips, the first mayor of the city of Boston. Wendell was graduated at Harvard College in 1831, entered the law school at Cambridge, and was admitted to the bar in 1834. His sympathies were strongly roused by the hard measures meted out to the early abolitionists, and particularly during the Boston mob, headed by gentlemen of property and high standing in the community, in October, 1835, when the chief of the abolitionists, William Lloyd Garrison, barely escaped with his life. Mr. Phillips thereupon joined hand and soul with the abolition cause, and went so far as to throw up his law practice in 1836 because he could not conscientiously swear allegiance to the Federal Constitution. In December, 1837, a meeting was called in Faneuil Hall to consider and condemn the murder of Rev. Elijah P. Lovejoy at Alton, Ill., who fell the month previous in defense of the freedom of the press. The pro-slavery feeling in Boston, at that date, was very strong, and Attorney-General Austin, who spoke at the meeting, asked whether Lovejoy had not died "as the fool dieth." This roused to indignant protest the youthful orator, who rose and delivered one of the most powerful speeches ever heard in Faneuil Hall, and rebuked the crude spirit of so many that were willing to trample on the liberty of the press and trample for foot the rights of humanity. From that time till 1861 he was a prominent leader and the most popular orator among the abolitionists. Holding that the Constitution was an unrighteous compact between freedom and slavery, Mr. Phillips refused to recognize its authority by voting, or in any other manner. He advocated disunion as the only way that he could discover out of the difficulties of the slavery question, and when the civil war broke out he favored sustaining the Government, inasmuch as the end must be freedom to the slave. In 1863-'64 he advocated arming, educating, and enfranchising the freedmen, and, having become President of the Anti-Slavery Society in 1865, he continued its existence in behalf of the freedmen at the South until the adoption of the fifteenth amendment to the Constitution. As this settled the question at issue, the society was dissolved in April, 1870. During this latter year he was the Temperance and Labor Reform candidate for Governor of Massachusetts, and received nearly 20,000 votes.
sional photographer, using it as a means of livelihood, follows that which is sure, finding it imprudent to risk time and money in experiments that may prove fruitless; but it is this chance, this uncertainty, and this hope, that lure on the amateur. An amateur photographer in this country, the late Joseph Rayner, had over $3,000 worth of apparatus; and this, it is said, is not an unusual amount for an enthusiast of long standing. That which has done most toward the recent revival of amateur photography, and to render it popular, has been what is known as the "dry process," the use of gelatinized plates. This, in its present form, is due to Dr. R. L. Maddox, an English amateur, and has been in use only a few years. Previous to this time, sensitive plates prepared with collodion emulsion had been much employed; among others, by Henry J. Newton, of New York, who in 1879 exhibited twenty instantaneous views made with an emulsion several years old. The history of photography has preserved the interesting experiments in the use of gelatine, the flow of which is as even as that of collodion. Being much cheaper than collodion, plates sensitized by gelatine were immediately adopted. These at once brought photography within the scope of people that formerly were deterred, not only by the disagreeable work involved, but by the necessity of being something of a chemist as well. The convenience of the gelatinized plates for the amateur lies in the fact that they are prepared by manufacturers, and can be bought in compact packages to be used anywhere at any time. After the negative is taken, no fixing is required; the plate may be put away, to be developed at convenience. Many amateurs do not develop their own plates, but send them to the professional photographer, who also prints them. The experiments now made in the preparation of sensitized paper are also greatly in the interest of the amateur. This paper, purchased in rolls, is marked off to the required size and is inserted in the camera. It is adjusted by a crank, and the image when taken passes into a corresponding roll on the other side, and is not necessarily removed until the entire roll is used. If desired, the image at another time can be floated on glass, which then becomes the negative. What is known as the "blue print" is much used by amateurs. In this case the paper (ordinary writing-paper will answer) is sponged off with a solution of oxalate of iron and carefully kept in the dark (between the leaves of a book will answer) until used. This is now sensi-
tive and receives the image, although no image is visible. When taken from the camera, it is held for a few moments to the light, and is then placed in a bath, or is sponged off with a solution of red prussiate of potash, which immediately brings the image in pleasant blue tints before the eye. The simplicity and cheapness of this process commend it to the amateur. It is to be remarked that the two solutions can be kept for a long period, and are not injured by exposure to light. For immediate use, another method commends itself. To half an ounce of red prussiate of potash add three ounces of water. In another solution add two ounces of water to half an ounce of citrate of iron and ammonia. Mix together, and carefully filter, or allow the bottle to stand for a few moments carefully excluded from the light. With a soft brush, cover the paper to be used with the mixture. After the photograph is taken, throw the paper into a bath of clear water, and expose to the light. The image seen in faint purplish tones now appears in blue tints. If cardboard is used instead of paper, the photograph is already mounted. This mixture loses its sensitiveness in a few weeks.

For the amateur's use, complete photographic outfits have been devised; and for out-door work cameras are reduced to pocket-dimensions. In summer, the amateur stows away his equipment; and if he sees any object or view that attracts his fancy, in a few seconds he transfers it to his plate, puts his plate away, folds up his camera, and his work is over until he is ready to take it up again.

The success of the amateur as a photographer is a more personal matter, and independent of the mechanical methods employed. The first radical distinction between the amateur and the professional photographer is, that the amateur expends his efforts in getting a good negative. This is never retooched. The success of the professional photographer, on the other hand, lies in great measure on his working with the subject, arrangement, composition, one may call it, of the amateur, is effective or not as he brings to bear upon it those artistic principles which would govern him in the arrangement of a picture, both as to composition and chiaroscuro. The differences to be observed in the work of amateurs are directly referable to their differences in artistic feeling. In this respect, the photographs made by artists have a particular value. By virtue of their training, they select the most picturesque materials and view of the subject. This corresponds to composition. The focus and length of exposure are also adjusted with a view to the artistic effect. The professional photographer, in taking either a person or other subject, adjusts his focus to bring out the lines and details most sharply. The artistic amateur, on the other hand, prefers soft lines, the blending of masses, or tone, not the prominence of details. Accordingly, he adjusts the camera a little out of focus and approximates the results for which he would strive with a lens. One of the most successful of amateur photographers, a lady, by training an artist, observes not only this rule in her work, but places her subjects in shadow and takes his pictures, as in the full light that the professional photographer seeks, but in a modified light. Her pictures are remarkable not only for the picturesqueness but for that sense of mystery which is one of the fascinating qualities in art, and which is also not incompatible with the truths of photography. In this sense, photography appeals to the artist. The use of the camera for furnishing memoranda for the artist is invaluable, and has become extensive. The conformation of a tree, a bit ofsuggestive landscape, the details of architecture, a rapidly changing sky, or the pose of a figure, the camera will more quickly and accurately serve than any sketch. An English artist's summer takes his models into the country, places them in the landscape as suggestions for studio-pictures. Photography appeals to a more ever-widening class of people. The traveller takes with him his pocket-camera, and preserves any souvenir of travel that he may desire. Instantaneous photographs may even be caught from the trains. Through photography, men of various professions can look after their interests at home or at remote distances. A gentleman of New York, who has an orange-grove in Florida, keeps note of all that is going on by means of a series of small glass slides. Each improvement the new sketch for him, and through a microscope is even able to trace the growth, the budding, and grafting of any special tree. As photography has been freed from its drudgery, many women take it up for their own amusement. Several women of leisure in New York are accomplished photographers. Organizations are springing up in different parts of the country. The Society of Amateur Photographers, of New York city, for the present, has eighty-five members, and holds its meetings on the evening of the second Tuesday of each month. The purposes of the society can be best set forth by giving the routine of an evening's proceedings. The letters read show the larger relations of the meeting. One from England proposes an international exchange of lantern-slides, that the scenery of each country may thus be made familiar to the other. Other letters touch upon the exchange of lantern-slides between the various local societies, that each may keep abreast of the general progress of amateur photography. The different committees report on the tests and experiments that the society is carrying on. One considers the relative durability of the gelatinized plates prepared by manufacturers. Another reports the tests made touching on the best light for developing negatives, pending the electric lamp which Mr. Edison is热心ly engaging in. Photography remains on in the society's interest. Follow-
reports is the exhibition of a canvas camera by Mr. Walter Clark, an artist sur photographer. This camera is d on the principle of the telescopic uses. A spring throws up and fast uners a hood. The camera below is in, an upper and under. Each has a dmiting light, and the lens has two rings lines. The upper aperture a, the lower being covered with a e, since the sensitive plate is already a. The upper aperture receives the i on a mirror placed at of 45°, and is again reflected on a use plate in the top. By this double the operator sees the image for the right-side up, a valuable improve the inverted image of the ordinary A button regulates the focus. When orperates his image as he de spring causes the lens to fall to aperature, which is now thrown f the automatic shutter previously equates the time of exposure. This especially designed for outdoors more particularly for taking another objects in motion; since it can in the hand, needing neither tripod or's cloth, and can be adjusted in m of a second. George H. Ripley xhibits his improvement on the autter for instantaneous views, which longer time for exposure. This is to the amateur, since, if he be alone s a figure in his landscape or inte an invisible silk thread autorgraph himself. These meetings nclude with an address on some spe or with an exhibition of lanter gives an idea of the general scope societies, which are found in Boston, nd, Lowell, Haverhill, Cleveland, Cuhicago, and Cincinnati. These socie in their infancy. That of Cleveland d altogether of young men not yet old. As yet, these societies have no evoked to their interest; but the aplio Times," edited by J. Traill ith the co-operation of W. J. Still, charles Ehrman, gives much consid amateur photography.

LOGY. Physiological Experimentation.— ion of the direction in which physio experiment may be pursued to advance future is given by Prof. Tyndall in g those diseases of which a single at immunity against all future attacks. nomen, hitherto unexplained, may be for under the germ theory of disease ng the system—the soil in which the developed—to be exhausted by the of some ingredient necessary to the id propagation of the microbe. M. a drawn attention to the fact that, rimonal cultivation of the microbe Aspergillus niger by M. Raulin, the omission of potash from the culture-liquid sufficed to make the produce fall to one twenty-fifth of the amount collected when potash was present. The addition of an infinitesimal amount of a substance iminal to the life of a plant is attended with still more striking res results. Thus, the addition of one part in 1,600,000 of nitrate of silver entirely stops the growth. Now, supposing the Aspergillus to be a human parasite—a living contagion—capable of self multiplication in human blood, and of so alter ing the constitution of that liquid as to produce death; then, the introduction into the blood of a man weighing sixty kilogrammes of five milligrammes of nitrate of silver would insure, if not the total effacement of this contagium, the neutralization of its power to destroy life. From such facts as this we may foresee that in antici pation of the assault of infectious organisms, the experimenter of the future will try to introd uce into the body substances which, small in amount, shall so affect the blood and tissues as to render them unfit for the development of the contagium; and, subsequent to the assault of the parasite, substances which shall effectu ally stop its multiplication. Dr. Polli, of Milan, has already found some alkaline sulphides that seem to be good against certain fevers and small-pox, and Crudelli has found arsenic helpful against the malaria of the Roman Cam pagna. To enable us to use these remedies safely and with some assurances of success, experiments must be made of their effects on different groups of individuals, and these individual must be animals susceptible to the in fection and to the counteracting applications.

The Nervous System.—The effects of the extirpation of the cerebrum in rabbits was consid ered by Prof. Munk in an address before the Physiological Society, a part of which was de voted to the difference in the results obtained in his own experiments and those which Prof. Christiani had reached in his researches. In his own most successful experiments, after removing the cerebrum, he had observed in rab bits, just as in other vertebrates, birds and frogs, a state of depression lasting for a longer or shorter period, to as long as several hours, a state in which they lay apathetically, taking and keeping whatever position might be im posed upon them. From this state they re covered to go through, first, interrupted and apparently spontaneous movements, which yet, on closer inspection, proved to be reflex movements. These, again, were followed by a quick ened reflex excitability, which finally was suc ceeded by convulsive movements, a kind of running stage, which, in from twenty-four to fifty hours after the operation, issued in the death of the animal. Prof. Christiani, on the other hand, after removing the cerebrum, in no case observed a state of depression, but his excerebrated rabbits all acted like normal ones. They moved about, sprang, ran, etc., during the first twelve hours, at least, after the opera tion. Prof. Munk ascribed these differences to
The results of investigations into the differences that have been observed in the movement in the blood-circulation of the colored and colorless corpuscles. Among the phenomena of the circulation to which he has given special attention are those of the existence of two streams in the arteries and veins, one better seen in the arteries, the one slower; that the colored corpuscles float lessively in the axial stream, while a great deal of the colorless ones float in the peripheral; that the number of leucocytes in the peripheral stream is greater in the veins than in the arteries; that the motion of the colored corpuscles is gliding, while that of the colorless ones is rotating; that in the veins the colorless corpuscles have a tendency to stagnate when they get into the peripheral stream, while the colored have not; and that the capillaries have not any visible axial stream, and in one which admit a single corpuscle only there is a tendency, for the leucocytes more especially, also for the colored corpuscles, to stagnate. Dr. Hamilton used artificial experiments and preparations in which the conditions of density and gravity, etc., of the circulatory stream were reproduced as nearly as possible. The phenomena of peripheral and axial streams result from the friction, from which the water in the middle of the tube being relatively free, moves more rapidly and directly than at the periphery, where it is retarded by the sides of the vessel. On introducing solid spheres into liquid thus flowing through the tubes, Dr. Silfert found that the position they assumed in stream and their behavior in it were matters of their specific gravity as compared with that of the liquid plasma in which they were floating. The colored corpuscles, being almost exactly the same specific gravity as the plasma, assume their position in the center of the stream with the central current. The colorless corpuscles having less specific gravity than the plasma, their tendency is to rise; hence they come in contact with the vessel-wall more than the others, where they are retarded at point of contact and consequently roll. As conclusions were tested by other experiments with blood and capillary tubes, in which as found that by altering the specific gravity of the blood-plasma through a range of ething like 1,040 to 1,080, we can make colored blood-corpuscles float at any level. Lower the specific gravity the more they come in contact with the bottom of the vessel, while the higher the specific gravity the more they occupy the axis the quicker they move. The conclusions by analogy from the artificial experiments were thus confirmed and found applicable to the actual circulation. Besides the situation of the bodies suspended in the plasma, the experiments determined also that the ease with which any suspended bodies will circulate depends (their size being appropriate to that of the tube) upon the relationship of the specific gravity of the bodies and that of the liquid in which they are suspended. The more they diverge in specific gravity from that of the liquid, the more friction is caused, and the more tendency there is to their becoming retarded and finally arrested in their progress.

Rhythmic contraction and dilation of the small blood-vessels, independently of the action of the heart, have been observed by Wharton in the veins of the bat's wing; by Schiff in the arteries of the rabbit's ear; by Cohnheim and Gunning in the web and tongue of the frog; and by Ludwig and Brunton in the arterial twigs of the subcutaneous connective tissue. From these and other experiments indicating similar properties, Dr. T. Lander Brunton infers that rhythmic contractile power seems to be a quality common to all the blood-vessels in the body, and in fact to belong to involuntary muscular fiber generally; and an experiment by Luchsinger, in which distinct pulsation could be observed in the veins of a bat's wing when artificial circulation was kept up, for twenty hours after death, appears to show conclusively that it is the involuntary muscular fiber composing the walls of the vessels, and not the nervous system, that has to do with it. Dr. Brunton has made observations on rhythmic contraction and dilation of the capillaries, independently of the heart and respiration, in man. They were made in cases of marked aortic regurgitation by observing the variations in width and brightness shown by the red streak which appears when the finger-nail is drawn across the forehead. It is easy in this experiment to observe, in addition to the visible pulse corresponding to the cardiac beat, a second rhythm of contraction and dilation corresponding to the respiratory movements.

In determining the velocity of the blood-current in making the circuit of the body, Dr. Smith calls attention to the inaccuracy of the old experiments, in which the time elapsed between the injection of an iron salt into the jugular vein, and its appearance in the jugular on the other side of the neck, was made the test. The inaccuracy arises from the fact that different chemical substances in solution make this circuit in very different periods. By his method, defibrinated pigeon's blood is injected into one jugular vein of an animal whose blood is allowed to drop from the other jugular into a series of watch-glasses placed in a circle upon a table, which is revolved by clock-work. Microscopic examination of blood thus collected is made to determine in which watch-glass the oval corpuscles of the pigeon's blood first appear; then, knowing the rate at which the table is turned, it is easy to estimate the time taken by the pigeon's blood in passing from one jugular to the other, in which passage it has probably traversed not only the
heart and lungs, but the capillaries of the head as well. The mean of six experiments gives the time of circulation in the dog as 17.5 seconds, during which the heart made 51.9 pulsations. In the rabbit the time of circulation was 11 seconds, during which there were 81 heart-beats.

The velocimetry of the pulse-wave has been the subject of special experiments by Dr. A. T. Keyt, of Cincinnati. The general result of previous experiments on this point by Continental physiologist has been to show that the speed with which the pulse-wave travels is about 20 feet per second; and it has been further known that the rapidity of the progress of the wave is essentially dependent on the rigidity of the tubes through which it travels. But little had been done to determine the effect of other conditions modifying its speed. Dr. Keyt, with improved apparatus, first set himself to determine the precise influence of tubes of different degrees of stiffness or elasticity on the velocity of the liquid waves sent along their interior. He selected for this purpose, first a glass tube, then India-rubber tubes of varying strength and firmness of wall, then tubes made of chicken-gut, and finally the aorta of a calf. These experiments demonstrated that the velocity of liquid waves in elastic tubes is proportional directly to the stiffness and inversely to the elasticity of the tube traversed; and, as bearing on the rate of pulse propagation in living arteries, they indicate the important modifying influence which the state of the arterial walls, as to stiffness or elasticity, must exert upon the same; for while in a glass tube of \( \frac{1}{4} \) of an inch bore and 6 feet in length, the wave-velocity was 216 feet per second; with firm India-rubber tube it was 165 feet; with a softer and more yielding tube of the same bore and length, it was 73 feet; with a still thinner tube, 51 feet; with a similar soft tube, steeped in water, the velocity was reduced 38 feet; with a tube made of India-rubber cloth, 28 feet; with chicken-gut, 16 feet; and with a calf's aorta, 12.75 feet.

Hemoglobin forms about 90 per cent. of the dried red corpuscles; and is the substance with which oxygen is associated in the blood, and by means of which it is conveyed to the tissues. It is characterized by the facility with which it is decomposed into the protein globulin and the reddish-brown powder hema- tin, and by the readiness with which it takes up oxygen to form a weak compound, without undergoing any intrinsic change. The hemoglobin of human blood has been considered very difficult to obtain in a crystalline form. Dr. Robert Saunders Henry, of Charleston, W. Va., has, however, in experimenting with human blood dispensed by leeches, after it had remained in their stomachs for a time, found hemoglobin already produced in crystals.

The physical character of the protoids of serum has been made the subject of investigations by Mr. W. D. Halliburton, of Uni-

versity College, London. Two of these physiologists have generally been recognized, the author designates as serum globulins of serum albumen. The investigations were essentially directed to the latter body. In the first experiments, which were made with the serum of a dog, the serum albumen was found to be divisible into three protoids. Subsequent experiments showed that similar bodies were found in the serum of other animals. The varieties of serum albumen were therefore determined, which were called serum albumen a (coagulating at 70°–78° C.), serum albumen b (coagulating at 77°–78° C.), and serum albumen c (coagulating at 80°–82° C.). Nearly similar results were obtained with the serum of the dog, man, monkey, rabbit, pig, and horse. The serum globulin appeared to be in all these cases a single protoid, while the serum albumen was split up into three. But in the serum of the ox, sheep, and horse, while the result was the same in other respects, only two protoids were obtained from the serum albumen, viz., those coagulating at 77° C. and 84° C. It is interesting to observe that these animals belong to the ungulata.

Special Sensen.—Experiments to determine the law of the duration of color-impression upon the retina have recently been made by Prof. Edward L. Nichols. Plateau made researches upon the persistence of vision more than fifty years ago, and found that the duration of the impression made upon the retina by light depends upon the composition of the ray; upon which principle he built up his theory of after-images. His discovery was partially confirmed in the course of Emmann's experiments, and has been very generally accepted by the writers on physiological optics. In our knowledge of the manner in which the duration of the retinal image varies with the wave-length of the impinging ray has advanced. Prof. Nichols's experiments were made in the usual manner, with rotating disks of different colors. Their result was to confirm, in the main, the results reached by Plateau, and to show that the persistence of the retinal image is a function of the wave-length producing it, being greatest at the end of the spectrum and least in the yellow; that it increases as the intensity of the ray producing the image decreases; that the relative duration of the impressions produced by the different spectral colors is not the same for all eyes; that each wave-length of the visible spectrum produces three primary impressions, red, green, and violet, of which green disappears most rapidly and violet is most persistent. Upon the different rates at which these impressions die away depend to a great extent the subjective tints of moving objects: and the duration of the retinal image depends upon the length of time during which the eye has been exposed, being very long after short exposure, and approaching a definite minimum value as the exposure increases. A tint
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mon observed during the course of the experiments seemed to show that the duration of impressions depends, fundamentally, on the character of the affected, rather than upon the wave of the ray producing the impressions. It has been observed that when one looks at a white surface illuminated by a lamp placed at one side, if the same object is held between the that but half of the page can be seen organ, that part of the object toward the eye will look green, and the other part white. The same contrasting color-sensation produced by the use of ordinary sunbeams wherever it falls directly upon the side of a white surface will appear greenish illuminated eye and pale red to the observer. These color-sensations depend upon the intensity and character of the light. They are strengthened when the object is illuminated, and the investigation has been resumed by Prof. Henry Sewall, of the University of Michigan. Brotek first proved that the color-sensations in question are due to light transmitted through the choroid coats of the eye as dissected from that organ which enters the pupil. The outer surfaces of the walls of the eyeball can no longer form images, but is nearly equally diffused retinal surface; and, having penetrated tissues richly supplied with blood, is no longer green, but red or rosy in tint. This red stimulates and fatigues the "red element" (or "red substance") of the retinas, so that the image of a white object is always present on the background of the eye, it exerts a powerful "greening" of the retinas, and appears green, according to the law of simultaneous contact. The physiological effects of the eye by other ways the pupillary openings was the special interest of Prof. Sewall's inquiries. In the eye which the incident light falls obliquely the retinal elements are aroused or made sensitive, while the red elements have a relative brightness depressed. Hence green color appears brighter and more saturated when at with that eye, white red and orange as in brightness and purity. In the eye illuminated by side-light, the red elements haled, and the green depressed. May be made to appear greenish or red by holding a special light in the head when looking at them; and aches in estimating the colors of stars may be partly caused by unnoticed factors of artificial illumination.

That property of vision, by which we are enabled to more accurately distinguish objects when glancing sidewise at them, has been made the subject of recent investigations by M. J. Delboeuf. Experimenting with white light, he has found that the greatest acuteness of vision is situated in the yellow spot of the retina, but that the spot most sensitive to differences of light is a line situated in the vertical meridian beginning at about 30° from the yellow spot, and extending to about 60° from it. It follows from this that the eye is particularly sensitive to changes in luminous intensity that strike the upper part of the retina, or that correspond with objects at the feet, or a little one side. It is thus that we are able so easily to avoid obstacles. The peripheral parts of the retina convey to us the modifications of the light around us, and, if we care to notice further, we can look at the objects directly and take in their forms and dimensions. While walking, the slightest incident details of the ground, a stone, a track, a piece of wood, or a leaf, if we look straight ahead, will be more distinctly depicted to us the closer we approach them. In following the tracks of a carriage, the parts nearest to us are more distinct; but if, instead of looking ahead, we look straight down at them, they become less so. The same is the case with lateral vision. When, on a bright night, we fix our eyes on a particular star, the others in its neighborhood come all the more distinctly into view, though they be actually smaller than the one we are regarding.

The relative rapidity with which the sensations of sight, hearing, and touch are transmitted, has been made the subject of experiments by M. Bloch. The precise object of his studies was the time which elapsed between the moment when the stimulus acts physically, and that at which it is perceived. The instruments commonly used in the laboratory for similar purposes were employed, namely, a revolving cylinder, tambours, and the tuning-fork. M. Bloch found that his investigation could not be pursued by the ordinary method, which consists in a voluntary response to a stimulus applied to the sensory organ, for that method involves too many processes, with their attendant sources of error. The method he adopted consisted in making use of the apparent simultaneity of sensations of sight and hearing, or of sight and touch, or of touch and hearing, and determining the limits within which this simultaneity appears to exist. Thus, a short, single, well-defined sound was made, by attaching to the drum a pin with wax, which was struck by a lever of steel each time the cylinder was rotated. This stimulus was fixed in point of time, and variable. At the same moment that the sound was produced, just before or just after it, the finger of one hand was touched with the tip of a piece of whalebone, also rotating with
the cylinder. It was found that when the sound occurred before the contact of the lever with the finger, no error was ever made. The subject invariably heard before he felt. When the two were synchronous, the same result was observed; and even when the tactile stimulus was applied before the auditory, the latter was still first perceived, and this even when the former was ½ of a second before the latter.

From a consideration of all his experiments, the author finds that, of the three sensations he has studied, vision is the most rapid; to this succeeds hearing, the transmission of which lasts ½ of a second longer than visual transmission; and, lastly, touch, which in the case of the hand lasts ¾ of a second longer than visual transmission.

The Digestive System.—Investigations have been made by F. W. Pavy to ascertain the changes undergone by the four chief carbohydrate elements of food, viz., grape-sugar, cane-sugar, lactose, and starch, during digestion. Beginning with the stomach, the attempt was made to follow the changes in those substances as they proceed toward absorption up to their arrival within the portal system of vessels. The experiments were performed on the digestive organs of freshly-killed rabbits and other animals, portions of the stomach or intestines being left in contact, for a given time, with solutions of known weights of the carbohydrate in question, and the copper-reducing value of the substance, after this digestion, was compared with that which it had been found to have before contact with animal substance. Inasmuch as grape-sugar is characterized by the property of possessing the same reducing power after treating with sulphuric acid as before, while the carbohydrates, which represent steps in an operation of which glucose is the final product, are altered in reducing power by the action of the acid, the author took as a basis the reduction to be observed in a portion of the modified liquid with sulphuric acid in all cases before estimating the reducing power. The copper-reducing value of the digested liquid may thus be compared with that of glucose, while the relation of the modified product to glucose is also ascertained. The most striking result of these experiments is the indication that transformation of glucose into bodies of lower reducing power is possible under the influence of a ferment existing in the stomach and intestines. Boiling of the animal substance with water, previous to the experiment, was found to annul the action of this ferment. The latter body seems to exist rather within the walls of the vessels examined than upon the mucous surface. So far as the experiments have gone, the author regards them as indicating that the ferment is more abundant in the stomach and intestines of the rabbit than in those of the dog, cat, horse, sheep, or pig.

Drs. G. F. Yeo and E. F. Herrou have made investigations of the composition of human bile obtained from a fistula of a patient suffering from jaundice, with comparisons with that from the gall-bladder of the same person. Difficulty was met in making accurate estimations of the daily secretions of bile, as a count of the unavoidable leakage into the dressings of the wound. As nearly as could be determined, the mean quantity was about 150 ounces per twenty-four hours; this is considerably below what other authors have estimated for the daily secretions of a well man. No difference in the rapidity of secretion could be detected at any time, nor any increase after the small meals of which the patient partook. The total solid residue was determined on different occasions within a period of twenty days. The average was 1·3466 per cent. Combining this with other determinations made by Jacobson, 2·36 per cent., and Rahn, 3·14 per cent., we have a mean of 2·25 per cent. solid constituents in fistula-bile, as against a mean of 9·021 per cent. for gall-bladder bile, as determined by Trifanowski from persons who had died of various diseases, and 1·196 per cent., as determined by Gorup-Beanez, and 1·194 per cent., by Frerichs, from healthy persons who had died suddenly. These determinations indicate that the bladder-bile of healthy persons is only half as rich again in solids as that of persons who have died from disease, while bile from the gall-bladder, even of the latter, contains four times as much of solids as that obtained from a fistula.

Gauthier has found, in normal human saliva, an alkaloid-like, non-nitrogenous substance, forming a crystallizable compound with boric acid, and platinum, which, in its physiological action, resembles the pilonide, or the alkaloids developed in cadavers; injected into animals, it acts like a pungent. Bodan making experiments in the same line, obtained negative results.

A widely distributed coloring matter, which is regarded as beyond doubt a chlorophyll pigment, has been discovered in the livers of invertebrates by Mr. C. A. MacMunn, and has been called by him entero-chlorophyl. It appears to differ from plant-chlorophyl, in the treatment the acid makes the solution slightly greenish, although previously it may have been yellow. Mr. MacMunn's paper relates his researches with the spectroscope, and discovery of this pigment in oysters, crustaceans, and star-fishes. Much evidence has been adduced to show that entero-chlorophyl is synthetically formed in the body of its animal possessor.

The process of ruminating has recently been studied by Prof. Lischinger, in a course of experiments on the goat. As disturbance of the animal is very likely to interrupt the process, the goats experimented on were narcotized with morphia, which numbs painful sensations but interferes but little with reflex action. It was found that pressure with the hand upon the wall of the paunch readily initiated the act of ruminating. There was first
PHYSIOLOGY.

of the vocal cords tending to close
the diaphragm contracted so
upon the upper surface of the
at the same time the abdominal
eradicated energetically, and a morsel of
is thrown up into the mouth, any
ner in it being pressed out and
then the cud-chewing movements
with them a copious flow of saliva
; and, finally, with a swallow
, the masticated morsel was sent
fourth stomach for complete di-
size of the mass regurgitated was
the sphincter muscles at the
ing of the paunch, these relaxing
ing of the act, but closing again
quantity had been forced out. The
movements was readily brought
rical stimulation of the walls of
or when this organ was mechani-
distension with warm water
ice with the hand. The flow of
chewing movements followed in
when food was expelled from
even though the morsel did not
which it was prevented from
cases by a division of the osse-
rhath concludes that nervation
reflex action, the stimulus to
distention of the walls of the
accumulated food; the amount
on the wall being also, no doubt,
he motor nerves of the stomach.

Action of Drugs.—Investigations,
pounds of more than forty of the
the relations between the chemi-
un substances and their physi-
, have been made by Dr. James
Francisco. He has found a close
isting between the isomorphic
various salts and their effects
directly into the veins and ar-
articularly been able to announce
among the salts of the metallic
intensity of their physiological
ected with the atomic weight
, so that when the elements are
omorphic groups, the action of
in the same group is a function
weight; the greater being the
, the smaller is the quantity re-
the same physiological ac-
arranged ten isomorphic groups
concerning the physiological ac-
severally he has reached con-
stantly as follow : Salts of the
which are included lithia, soda,
ium, silver, caesium, gold, and
injected into the veins in suffi-
trated solutions to give rise to
physiological reactions, kill by
assage of the blood through the
ly by causing contraction of the
eries. When injected into the
quantity required to kill is much
then introduced into the veins.
The salts of gold and silver cause contraction
of the systemic arteries as well as of the vessels
of the lungs. The action of the substances in
this group as a whole, except of the potash
salts, is to keep up the irritability of the heart.
On the nervous system their action is but slight.

Of the magnesia group—including magnes-
ia, manganese, iron in ferrous salts, nickel,
coaltar, copper, zinc, and cadmium—the most
marked physiological effect in venous injec-
tions is suddenly to arrest the action of the
heart. Injected into the arteries, they gen-
erally arrest respiration before reaching the
heart in a sufficiently concentrated state to
stop its action. The effect on the nervous sys-
tem is well marked. Even in small quantities
they give rise to a state resembling catalepsy.

The salts of lime, strontia, and barya, con-
stituting the barya group, injected into the
veins, destroy the irritability of the heart, ar-
resting its pulsation in diastole. When they
are injected into the arteries, the heart's pul-
sations are quickened and the pressure in the
arteries is slightly increased. Action on the
nervous system is not marked.

Salts of the group including beryllium, alu-
mina, ferric iron, yttria, and cerium (Ce₂O₃),
injected into the veins, cause contraction of
the pulmonary arteries, resulting in death if
the quantities are large, slowing of the action
of the heart, with decided vagus pulsations
when the quantities are smaller. Injected into
the arteries, the first effect is generally inhi-
bition of the heart's action, followed by rapid
rise in the pressure in the arteries. The direct
action of these salts on the muscles of the heart
is to increase their irritability. After the in-
jection respiration is often suspended for one
or two minutes, and again goes on regularly,
but very slowly, and the action in the general
reflex functions of the medulla and spinal cord
is well marked. All the substances in this
group are very poisons.

The platinum and palladium salts, when in-
jected into the veins, act directly on the in-
trinsic nerves of the heart, slowing its action
with vagus pulsations and diminution of the
arterial pressure. When injected into the ar-
terias, the vagus center is immediately affected,
and the action of the heart is slowed. They
produce intermissions of respiration, which are
repeated till breathing stops for good.

The salts of thoric and cerous oxide (Ce₂O₃)
agree with the alumina group in acting prin-
cipally on the vagus and vaso-motor centers.

The salts of lead, when introduced to the
blood, exert an action on the pulmonary ar-
terias and capillaries similar to that of the soda
salts; and on the muscles an action analogous
to that of the barya salts, whereby muscular
movements continue for many minutes after
death. The toxic activity of lead is much less
than that of either of the elements with which
its physiological reactions connect it.

Phosphorus, arsenic, and antimony are all
distinguished by the absence of any well-marked
in either case the action is hesitant; for if a period after excitation, which amounts to a bradytropic summer temperature to about a cl, the leaf remains absolutely motionless, it is evident this interval an electrical disturbance takes place in the plant. Differences, as well marked, exist between the rhythm of plant-motion and that of animal movements; but they are not essential, for they arise not on difference of quality between the two fundamental chemical processes of plant and animal protoplasm, but merely on difference of rate or intensity.

Ischaemia of Nerves.—In a paper on the effects of lesions of different regions of the cord, read before the Royal Society, Dr. Ferrier and Gerald Teo give a detailed account of experiments conducted on monkeys, consisting in the removal under anaesthetics of certain limited areas of the cord. The regions operated upon were the teo-angular, temporal, Rolandic, frontal, and occipital lobes and angular gyri. The importance of vision varies with the extent of the lesion. Unilateral lesions of the occipital lobe and angular gyrus caused permanent blindness of the opposite eye and homonymous hemianopia of both eyes toward that opposite side. Experiments upon the superior temporo-sphenoidal convolutions were followed by complete and permanent deafness, other lesions of the temporal lobe producing no change in this sense. The auditory region—or the cortical layers around the fissure of Rolando—was again shown to be the center of motor impulses, lesions in this area producing motor paralysis without sensation, varying in degree and extent according to the size and extent of the lesion; and degeneration of the pyramidal tracts of the spinal cord followed these lesions. No other followed lesions of the frontal lobes, the gray matter of which only temporary anesthesia was produced; sensation recovered upon descending degeneration, traced from the center of the foot of the crus cerebri, of corresponding fibers of the internal capsule, but not passing into the anterior pyramids, upon the removal of the hippocampus or its convolutions and the neighboring pyriform cortex, without reference to the crus or the basal ganglia. It appears that calcium is present in the brain, and that the destruction of such amines depending upon the act of destruction of the hippocampal region.

Physiology of Aquatic Life.—Experiments made upon the bivalve and univalve mollusks are partly parallel with those of Prof. Ringer and supplement them. By reason of their different organization, the mollusks experimented upon gave very different results. The bivalves, which could shut themselves up between their valves, as a general rule showed greater resistance than the univalves. Of these, the periwinkles, whose operculum can close entirely, retired into the remotest coiled of their spirals, and were thus better protected than the buccins, whose opening does not shut tightly, and into which the water can easily enter. Salts of potassium die, when placed in distilled water, in a few hours, minnows, for instance, in an average of four and a half hours. The addition, however, of either a sodium or a calcium salt in minute proportions greatly prolongs their life. Sodium chloride, sodium bicarbonate, and potassium chloride, added singly to distilled water, sustain life for the same time, namely, from one to two days, sodium bicarbonate prolonging life rather longer than either of the other two salts. Calcium chloride added to distilled water sustains life much longer than either corresponding quantities of sodium or potassium salts. The addition of sodium carbonate greatly enhances the life-prolonging power of calcium chloride, the combination, indeed, appearing as capable of sustaining life as tap-water. Dr. Ringer finds that while a reduction of the relative quantity of sodium below a certain point renders water incapable of sustaining life, fish like minnows and sticklebacks can exist in fluids containing a considerable excess of salts over the amount common in river waters. He finds, too, that by gradually reducing the quantity of sodium salts, he can habituate minnows and sticklebacks to live in a fluid containing only a calcium salt or calcium chloride. Sticklebacks, which are anadromous, become much more readily habituated to a fluid of a different composition from that to which they are accustomed, and far more readily, than minnows. In some of his experiments the author noticed that one, two, or more of the minnows greatly outlived the rest. This was not because the fish in question became habituated to the distilled water, as they died speedily when placed in a fresh supply of it, and Dr. Ringer presumes, as a more tenable supposition, confirmed by circumstantial evidence, that the other fish were unable to live in the water in which they must contain a minute quantity of various salts, for instance one in from 5,000 to 10,000 parts of calcium and sodium salts; that in water containing a smaller quantity, fish languish and die, while they die still sooner in distilled water. On the other hand, they can live in a great excess of lime over the minimum essential to sustain life.
seem much less favorable than those of magnesia, and especially than those of soda. The favorable action of the salts of soda was shown by the endurance of the mollusks in Vichy water, some palourdes living forty days in that medium. Life was sustained longest in the sulphate of magnesia, and more strikingly in the sulphate of soda. It was also only in the solutions of these two salts that green algae began to make their appearance at the end of sixty days. This fact was regarded as corroborating the correspondence already observed between the conditions favorable to marine life and those which promote the development of vegetable life.

The question of the conditions under which gases occur in a state of absorption in the ocean-waters has been considered by Prof. Moseley, of the Challenger Expedition, as one the understanding of which is important to the physiologist. Prof. Ditmar's researches show that the presence of free carboxylic acid in ocean-waters is an exception. Oxygen is present in all sea-water, being derived from the surface, but the amount diminishes, on account of the oxidizing that is always going on, with increase of depth. M. Regnault's experiments on the effects on organisms of high pressures, corresponding with those of certain sea-depths, show that a fish without a swimming-bladder, or one with the bladder emptied of air, may be subjected to a pressure of 100 atmospheres, or 650 fathoms, without injurious effect; at 200 atmospheres, or 1,300 fathoms, it becomes torpid, but soon revives when the pressure is removed; while at 300 atmospheres, or about 2,000 fathoms, the fish dies. The results of these experiments would probably have been greatly modified if plenty of time had been given for the fish to accommodate itself to the change of pressure and the conditions in which it moves itself slowly from one depth to another to be imitated. M. Paul Bert's experiments upon the effect on aquatic organisms of water subjected to the pressure of compressed air—a very frequent result—show fatal results at fifteen and even at seven atmospheres. A large proportion of the food-supply of the deep-sea animals appears to be derived from life on the ocean-surface, or that which is brought to the surface by rivers from the land sinking to the depths.

Bibliography.—Among the new and valuable works published during the year in the departments of anatomy and physiology the London "Lancet," selects as worthy of special mention Yeo's "Manual of Physiology," Preyer's "Physiologie der Embryo" (Physiology of the Embryo); Vogt's "Anatomie Comparée" (Comparative Anatomy); Waldeyer's "Anatomie," Charles's "Physiological and Practical Chemistry," Hart's "Atlas of Female Polvic Anatomy," Roderger's "Anatomie des Prostate," Purser's "Manual of Histology," Fol's "Lehrbuch der vergleichenden mikroskopischen Anatomie" (Text-Book of Comparative Microscopic Anatomy); and Parker's "Hunterian Lectures on Mammalian Descent," Foster and Hur- rant Baker have published new editions of his works on physiology, and Mr. Power an elementary text-book on the subject. Wernicke and Hirsch have begun the issue of a Biographical Lexicon of conspicuous names in Medicine. Dr. Stirling has published a translation of Landon's "Physiology." Among the most important articles published in Fritsch's "Archiv" are those of Loeb on the "Disturbance of Vision after Injury of the Cerebral Cortex"; the researches of Cohnstein and Zuntz on the "Blood Circulation and Respiration of the Mammalian Fetus"; the essays of Worm Miller on "The Excretion of Sugar and the Extraction of the Sugar excreted by the Kidneys in Man," and of Karl Bohland on the "Quantitative Determination of Nitrogen in the Urine"; and Goltz's essay on "The Function of the Brain." In Foster's "Journal of Physiology," Burdon-Sanderson and Page have described the "Electrical Phenomena of the Excitatory Process in the Heart of the Tomato"; Klein has published an essay on the "Swine-Plague"; and Langley and Sherrington a paper on "Secondary Degeneration of Nerve-Tracts following Removal of the Cortex of the Cerebrum in the Dog." In Prof. Humphrey's "Journal of Anatomy," Dr. Barrett has discussed the cause of the first sound of the heart; Ainslie Hollis has described the "Histology of the Central Gray Substance of the Spinal Cord, Medulla Oblongata, and Pons Varolii"; and Dr. Youman the "Histology of the Vitreous Humor." Besides these, we notice in the catalogues published in the "Journal of Physiology," including works which appeared previously in September, 1884, Brucke's "Vorlesungen," a "Lectures;" Le Sage's "La Structure du Corps," and Martin's "The Human Body" (American); Wurtz's "Traité de Chimie Biologique"; Béc当地's "Traité Elémentaire," 4th ed.; Frédéricque and Nuel's "Elements de Physiologie humaine"; and Le Gros Clark's "Physiology"; James's "Aids to Practical Physiology"; Hoppe-Seyler's "Die Entwicklung der physiologischen Chemie und ihre Bedeutung für die Medizin" (The Development of Physiological Chemistry and its Significance in Medicine); and a total of fifty works and papers classified under the title "Text-Books, Methods," etc. Among the thirty-two works and papers on the general chemistry of tissues and of animal and vegetable substances, are Tschirche's papers on "Chlorophyll and its Derivatives"; Brieger's "Über giftige Produkte der Faulstoff-Bakterien" ("on the Poisonous Products of Putrefaction-Bacteria") and "Über Spaltungsprodukte der Bakterien" ("on Decomposition-Products of Bacteria"); Kühne and Chittenden's (American) Researches on Albumose; and Sturtevant's "Studies über Milch" ("Studies of Milk"). General Physiology is represented by Fros-
POISONS.

The custom-houses produced in 1892–93 from import duties $2,315,651, and from export duties $278,697.

Commercial Treaties.—Details relating to the preliminary treaty, and later the general reciprocity treaty, negotiated by Messrs. Foster and Eldayen, will be found under Cuba. In Cuba the main interest centers on sugar, while in Porto Rico a vast area in the uplands is devoted to coffee-planting, and all coffee enters the United States duty free. The committee report addressed to Congress by the New York

UNITED STATES PATENT OFFICE.

20 million. It is true, however, that the sale of these wines is not yet extensive in the United States, but it is expected that with the growth of the

POTRERO.

PORTO RICO.

663

The consumption of wines in the United States is increasing steadily, and it is

the analyst, it opens a loophole of escape for the guilty, such as an unscrupulous lawyer would not be slow to take advantage of.

Tuberculosis.—Since the promulgation of Koch’s parasitic theory of tubercular consumption, it has met with strong opposition from several quarters, though it is well to remind the reader that the doctrine has been accepted by the majority of the medical profession. The arguments against the theory are briefly these: It has been proved by numerous clinical observations and experiments that certain men and animals possess a decided “scrofulous habit,” and that only such individuals have pulmonary tuberculosis. Moreover, both men and animals that were previously healthy, may acquire a tendency to consumption through the agency of bad nutrition and hygienic surroundings. Whenever such individuals have an inflammation of the lungs, it is of a tuberculous nature, or, in other words, without inflammation there can be no tuberculosis. The presence of the microscopic organisms known as “bacilli” is not necessary for the causation of tuberculosis. They only occur secondarily, and after the lung-tissue has begun to break down rapidly. The diseased lungs merely form a favorable soil for these organisms. Lastly, it is asserted that Koch has not proved either the parasitic nature of phthisis, or that there is any special bacillus tuberculosis. It will be seen that the discussion turns upon the point whether the bacilli are the cause or the result of phthisis. As far as the evidence at present before us goes, the former theory may be regarded as still unshaken.

PORTO RICO, an island of the West Indies, a possession of Spain. (For details relating to area and population, see “Annual Cyclopaedia” for 1883.)

Government.—The Captain-General (since Nov. 28, 1884) is Don Luis Davan; the American Consul at St. John’s is E. Conroy.

Fisheries.—The revenue during the fiscal year 1893–94 was $2,683,576, and the expenditure $8,926,665, leaving a deficit of $62,669. The budget of the colony for the fiscal year 1894–95 estimated the outlay as follows:

<table>
<thead>
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<th>Department</th>
<th>Outlay</th>
</tr>
</thead>
<tbody>
<tr>
<td>General offices</td>
<td>$1,600,578</td>
</tr>
<tr>
<td>Department of Justice</td>
<td></td>
</tr>
<tr>
<td>War and Navy</td>
<td>$292,480</td>
</tr>
<tr>
<td>Finance</td>
<td>$241,899</td>
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<tr>
<td>Administration</td>
<td>$564,988</td>
</tr>
<tr>
<td>Public Works</td>
<td>$813,978</td>
</tr>
</tbody>
</table>

Total                                  | $8,926,665   |

The customs-house produced in 1892–93 from import duties $2,315,651, and from export duties $278,697.

Commercial Treaties.—Details relating to the preliminary treaty, and later the general reciprocity treaty, negotiated by Messrs. Foster and Eldayen, will be found under Cuba. In Cuba the main interest centers on sugar, while in Porto Rico a vast area in the uplands is devoted to coffee-planting, and all coffee enters the United States duty free. The committee report addressed to Congress by the New York

it has been discovered that there are developed within the cadaver certain volatile alkaloids, which have received from each toxicologist the name “poison alcohol.” The English term has yet been suggested. These “cadaveric alkaloids,” as they are sometimes called, can also be obtained experimentally from the decomposition of animal, muscle, brain, etc. They have even been found in the physiological excretions, such as saliva and urine.

It is of vital importance to remember that these substances may easily be mistaken for poisons that have been administered during life with felonious intent. If a toxic substance is found within the body within twenty-four to forty-eight hours after death, it is strong evidence that it is a real poison and not a cadaveric alkaloid. After the lapse of two days, however, there may be considerable doubt, and there is no sure test for distinguishing between a true and a false. Chemical must be supported by physiological tests.

It is supposed that these mysterious poisons may be the cause of many obscure pathological conditions, especially such as follow ingestion of bad meat, decayed fish, etc. It is important that this discovery is great, since it throws doubt upon many chemical analyses heretofore regarded as exact in their results, and still adding to the care and responsibility of
PORTUGAL.

by the citizens possessing a net
2 least $110. The number of peers
deputies is 175 by the new elect-
3 1884. The Cortes assembled at
without the intervention of the
who has no veto on a law passed
he has sent it back unsigned. New
3 held every four years. All laws
the army and to general taxation
3 the Chamber of Deputies.
king Louis I., born Oct. 31,
Queen Maria II and of Prince
Saxe-Coburg. He succeeded his
4 Nov., 1881. The Cortes net was constituted Oct. 24, 1883,
President of the Council and Min-
4, A. M. de Fontes Ferreira de Mello;
the Interior; A. C. Barjona de
 minister of Justice, Lopo Vaz de Sam-
o; Minister of Finance, Dr. E. E.
4 Minister of Marine and the
f. Pinheiro Chagas; Minister of
4, J. V. Barbosa du Bocage; Public
Works, Commerce, and Interior
A. de Aguiar. (For area, popula-
3 Annual Cyclopedia" for 1883.)
imports and exported of the
values of merchandise in 1882 were

<table>
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<tr>
<th>Commodities</th>
<th>Imports</th>
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</tr>
<tr>
<td>manufacture</td>
<td>848,000</td>
<td>874,000</td>
</tr>
</tbody>
</table>

The number of ordinary letters forwarded in 1882 was 12,066,315 internal
and 1,581,923 international received and 1,560,690 sent; the number of newspapers, 9,329,927
internal and 874,091 international received and 477,450 sent. The receipts of the post-office in
1879-80 amounted to 495,060 milres.

The Army.—The army is raised partly by con-
scription and partly by enlistment. The effective
on Jan. 1, 1884, was 2,195 officers and 24,450
men, besides 455 officers and 8,529 men sta-
tioned in the colonies. A decree providing for
a reorganization of the army was issued May
19, 1884. There are to be 34 regiments of in-
fantry, 12 of chasseurs, 10 of cavalry, 3 of
mounted artillery, a brigade of mountain artil-
leriy, a regiment and 4 companies of garrison
artillery, and a regiment of engineers. The du-
ration of service will be twelve years—three
with the colors, five in the first, and four in
the second reserve. The war effective under the
new organization is to be raised to 120,000 men.

The Navy.—The navy in 1883 consisted of 80
steamers with 108 guns, and 14 sailing-vessels.
The only efficient vessels were a ram and two
corvettes. A corvette and two gunboats are
building. The number of sailors in active ser-
vice in 1884 was 8,335.

Finances.—The closed accounts of 1878-79
make the total ordinary receipts 26,792,324
milres, the extraordinary receipts 2,152,330
milres; total receipts of the treasury, 28,944,-
484 milres; expenditures on the public debt, 10,732,938 milres; on public works, 7,187,886;
other expenditures, 16,292,887; total expendi-
tures, 84,118,700 milres.

The budget for 1884-85 makes the total re-
cceipts 31,436,067 milres, of which 8,300,890
come from the land-tax, industrial licenses, and
other direct taxes; 15,142,110 from import
duties, imposts on tobacco, cereals, wine, the
Lisbon octroi, and other indirect taxes; 8,348,-
000 from stamps and registry dues, 1,037,000
from additional taxes imposed by the law of
April 27, 1882; 8,606,530 from public works,
etc.; and 1,101,547 represent technical entries
balanced on the other side of the account. The
expenditures are set down at 88,447,706 mil-
res, of which 6,138,000 milres are extraordin-
ary outlay for public works, making the total
ordinary expenditures 32,309,706 milres. The
expenditure on account of the public debt is
18,098,704 milres.

The colonial budgets for 1884-85 foot up
2,759,452 milres of receipts and 3,163,809 mil-
res of expenditures.

The public debt on June 30, 1883, amounted
to 450,852,510 milres of new stock and 1,907,-
418 of old bonds still outstanding. The new
debt consisted of 295,661,808 milres of inter-
nal debt founded at 3 per cent. and the foreign
bonds amounting to £43,572,590, or 195,190,-
502 milres. The interest on the public debt in
1884-85 amounts to 18,497,530 milres. The
interest in arrears amounted to the sum of 5,-
703,928 milres, 2,827,883 milres remaining
unpaid on the refunded domestic debt and £600,995 on the sterling debt.

PRESBYTERIANS.

PRESBYTERIANS. 1. Presbyterian Church in the United States of America. — The following is a general summary of the statistics of this Church, as compiled by the stated clerk, and published in the "Journal of the Proceedings of the General Assembly" for 1884: Number of synods, 24; of presbyteries, 190; of ministers, 5,585; of candidates, 753; of licentiates, 275; of elders, 19,985; of deacons, 6,287; of churches, 5,975; of communicants, 615,949; of additions of members on examination, 34,988; of baptisms, 11,942 of adults, and 19,483 of infants; of members of Sunday-schools, 687,289. Total amount of contributions, $10,166,401; of this amount, $690,028 were for home missions, $550,330 for foreign missions, $118,956 for education, $83,548 for the freedmen, and $198,047 for church erection.

The following summaries embrace the principal items in the reports made by the several boards to the General Assembly concerning the condition of the various interests under their charge: The Board of Relief for disabled ministers and the widows and orphans of deceased ministers returned receipts from all sources of $119,875, with 498 persons enjoying the benefit of the relief funds. A "Presbyterian Minister's House," with eleven acres of ground, the gift of Dr. A. M. Bruné, of New York, had been opened at Perth Amboy, N. J., where eighteen persons were entertained while recovering health and strength.

The receipts of the Board of Education for the year had been $87,100. Five hundred and seventy-seven candidates had been under the care of the board, studying for the ministry in theological seminaries, colleges, and preparatory schools. Of these students, 86 were Germans, 5 Bulgarians, 46 negroes, 2 Spaniards, 3 Chinese, 1 Hindoo, and 1 Indian. The allowance to students had been raised to $130 each.

The receipts of the Board of Publication, including a balance of $328,681 from the previous year, had been $309,386. The publications of the board numbered more than 1,500, of which about 1,500 were volumes, and the rest tracts and pamphlets. The isues for the year comprised 302,000 copies of new publications, and 1,487,500 copies of reprints of former publications. The receipts of the board in its missionary department had been $59,159. Eighty-four colporteurs had been employed in this department, in the sale and gratuitous distribution of books, tracts, and periodicals. A "Bible Correspondence School" had been established in connection with the Sunday-school department, for thorough and systematic study of the Bible and of methods of Sunday-school teaching, and numbered 5,300 members.

The Board of Aid for Colleges, at the close of the first year of its operations, reported that its receipts from contributions of the churches had been $14,915; besides which $14,074 had been contributed by the donors directly to institutions. The means received by the board had been distributed among nine institutions; of these, three were new institutions, when the board had helped to found, viz.: the College of Emporia, Kan.; the Presbyterian University of Southern Dakota, Pierre, Dak.; and the College of Montana, Deer Lodge, Mont. The income of the Board of Home Missions had been: for the Home Missionary Department, $487,480; for the Sustentation Department, $30,146; for the School Department, $119,801; total, $830,428. The general summary of the work of the board includes the following items: Number of missionaries, 1,468; of missionary teachers (53 among the Indians, 26 among Mexicans, and 65 among the Mo monks), 144; number of members in mission churches, 71,383, of whom 6,216 had been received during the year on profession of faith; number of persons in congregations, 129,547; number of baptisms, 2,058 of adults and 3,918 of infants; number of Sunday-schools, 1,807, with 121,742 members; number of church buildings, 1,807, which were valued at $3,460,448. One hundred and thirty-five churches had been organized and 44 had become self-sustaining during the year. A mission at Wrangell, Alaska, engages one missionary teacher and returns a day-school of sixty pupils.

The Board of Church Erection had received $53,181, and granted $101,260 to 226 churches.

The 13 theological seminaries returned 55 professors, 7 other teachers, and 516 students, with 129 graduates. The entire value of their real estate was given at $2,112,481, and the amount of their endowment funds at $3,190,014. The seminaries are those of Princeton, Auburn, Alleghany or Western, Lane, Unisa, Danville, North-west, San Francisco, the German seminaries at Newark, N. J., and Dubuque, la., and the theological departments of Blackburn, Lincol, and Biddle Universities.

The income of the Board of Missions for Freedmen had been $121,521. The board had also received in the past few years $14,390 for permanent investment, of which $4,390 had been contributed by the United Presbyterian Church of Scotland for the African scholarship fund of Biddle University. The condition of the work among the Freedmen was exhibited in the report as follows: Number of preachers, catechists, and teachers employed, 304; whole number of churches under the care of the board, 179, of which 11 had been organized during the year; whole number of communicants, 15,806; of whom 1,199 had been added on examination; number baptized, of adults, 880; of infants, 999; number of Sunday-schools, 169, with 12,056 pupils; number of schools 87, with 183 teachers and 7,388 pupils. The five higher schools, Biddle University, Charlotte, N. C.; Scotts Seminary (for girls), Concord, N. C.; Wallingford Academy, Charleston, S. C.; Brainerd Institute, Chester, S. C.; and Fairfield Institute, Winnabow, S. C., returned 1,770 students, of whom 91 were...
PRESBYTERIANS.

The receipts of the Board of Foreign Missions had been $698,192, and the board closed the year with a debt of $10,723. The contributions of the various Women's Auxiliary Societies during the year had been $83,764; and since these societies had come to existence, fourteen years before, they had contributed in all, $1,707,484. The missions - - the board were among ten tribes of American Indians, in Mexico, Guatemala, South America, Africa, India, Siam, Japan, China, Arabia, and Syria, and among the Chinese in the United States. They returned altogether, 35 American ministers; 108 ordained native insisters; 145 native licentiates; 28 American and 281 American women as lay missionaries; 785 native lay missionaries; 19,218 communicants; and 25,914 pupils.

General Assembly.—The General Assembly of the Presbyterian Church in the United States of America met at Saratoga Springs, N. Y., May 15. The Rev. George P. Hay, D. D., was chosen moderator. Upon report of the committee having the subject in charge to that effect, the Revised Book of Discipline and the revision of Chapter X of the Form of Government, having been approved by the required number of presbyteries, were formally declared to have been adopted, and to be now part of the constitution of the Church. A resolution was adopted recording the determination of the General Assembly to continue correspondence with the General Assembly of the Presbyterian Church in the United States (Southern) by delegates. The committee appointed by the previous General Assembly to confer with a similar committee from the Southern Synod, in regard to plans of cooperation, reported that the committees had agreed upon provisions for the use and occupancy of Danville Theological Seminary in perpetual joint tenancy and the donation of the institution to Louisville, Ky., they had also agreed upon a resolution, to be recommended to the two General Assemblies, concurrent adoption; with regard to cooperation in home missions; that "this Assembly, while asserting its right to labor in every part of our common country, would most sincerely enjoin those charged with the direction of home-mission work, that they see that nothing be done through strife or vainglory; that in prosecuting this work the interests of one other Assembly already in occupancy, either with an organized church or missionary labor, shall be most carefully respected; and that the matter of consolidating feeble churches and the use of disagreement threatening the disturbance of fraternal relations shall be referred to the joint committee of the presbyteries having jurisdiction:" and with regard to comity in the matter of discipline, "that this General Assembly, as a matter of comity between our Church and the Southern (or Northern) Presbyterian Church, growing out of the fraternal relations so recently established, enjoins upon our church sessions, presbyteries, and synods, that they have due regard for the discipline of all the sessions, presbyteries, and synods of that Church." The Assembly's committee also reported that it had, after considering the many difficulties in the way of cooperation, deemed it proper to say to the joint committee, that "we feel constrained to report to our Assembly that in our judgment the only effectual method of removing these difficulties is through organic union between these two branches of the Presbyterian Church. We would, therefore, respectfully ask our brethren representing the Southern Church in this joint committee to make a similar representation to their General Assembly. We do this with the hope that both Assemblies may take such action as will lead to organic union." To this the Committee of the Southern Church replied that, by the action of their Assembly of 1888, they felt constrained to say that they were stopped from making any recommendation, and from considering the matter of organic union. The committee on the subject of reduced representation in the General Assembly reported that the returns of the votes of the presbyteries upon the overtures that had been submitted to them failed to give any evidence of any general desire on the part of the churches to reduce the size of the Assembly, but gave abundant evidence that the Church did not demand reduction, all plans to that end submitted year after year having been rejected by the presbyteries. A proposal to erect in the city of Washington a monument to the memory of the reformer, John Calvin, was approved, and members of the Church were encouraged to contribute in aid of the enterprise. In the matter of Sabbath observance, the use of the Sabbath-day, or of any part of it, for purposes inconsistent with its sanctity, was declared sinful; churches and ministers were urged to disseminate this view of the question; and the people of the Church were counseled not to be, as owners, managers, or employees of railroad and steamship companies, as shippers or passengers on the Sabbath, or as publishers, patrons, or writers for Sunday newspapers, participants in those forms of Sabbath-breaking. The habit of taking mail matter from the post-office on the Sabbath was disapproved of. On the subject of temperance, "the uniform testimony of past Assemblies, from the year 1812 down to the present time," was reiterated, the principles of total abstinence and prohibition and their application were approved, and systematic action in behalf of temperance was advised. The Assembly decided, in reply to an overture in which the questions were asked, that a minister who has been deposed from his office, or has demitted it, is reduced to the condition of a lay member, and must therefore be reordained in case he is restored to office.
II. Presbyterian Church in the United States, (Southern).—The following is a summary of the statistics of this Church, as they were reported to the General Assembly in May, 1884:

| Synods | 18 | Total communicants | 181,358 |
| Synod of Presbyterian | 68 | Adults baptized | 2,284 |
| Candidates | 284 | Infants baptized | 4,897 |
| Licensees | 54 | Registered non-com. | 34,870 |
| Ministers | 1,979 | | |
| Churches | 1,352 | Teachers in Sunday-schools | 8,380 |
| Ruling elders | 4,624 | Number in Sunday-schools | 81,688 |
| Deacons | 4,832 | | |
| Added on examination | 1,730 | | |

**CONTRIBUTIONS.**

| Sustentation | $48,710 | Presbytery | $10,000 |
| Pensions | 10,437 | Total in the same | 10,437 |
| Invalid fund | 10,649 | Congregational | 569,192 |
| Foreign missions | 50,281 | Miscellaneous | 60,415 |
| Education | 87,944 | | |
| Publications | 8,418 | Total | $1,306,661 |
| Tuscaloosa Institute | 5,078 | | |

The Committee on Sunday-Schools made report of 1,146 Sunday-schools, excluding about thirty "union" schools, with 10,168 teachers and 77,937 scholars.

The total receipts of the Committee on Education for the year had been $14,817. The committee returned 187 candidates enrolled, to whom $15,700 had been remitted.

The business of the Publishing House for nine months, the period during which it had been under the care of the General Assembly's committee, had amounted to $14,620, indicating a business of $50,000 for the year. Books had been granted for distribution to the needy and destitute to the amount of $1,061. The Union Theological Seminary had been attended by forty-eight and the Columbia Seminary by thirty-four students. In the Tuscaloosa Institute for the Education of Colored Ministers, the course of study had been extended to four years. The number of students in attendance was thirty-one. The Executive Committee of Home Missions returned its total receipts at $51,076. The amount received in direct contributions from the church (183,905) was greater than had been reported in any previous year. The receipts for sustentation had been $25,602, while $34,900 had been spent in building and repairing houses of worship, in aiding the support of 1,938 ministers, and in behalf of work among the colored people. The evangelistic fund had received $3,479, and $17,555 had been paid out from it to aid 71 evangelists. The receipts of the invalid fund had been $9,823, and the payments from it $10,552, for 24 infirm ministers, 72 widows, and 7 cases of children of deceased ministers. The receipts to the Committee for Colored Evangelistic Work had been only $227; but the amount applied to that work, through the committee and other agencies, was $3,231. The sum of $41,000 was invested in the relief fund, and $3,800 paid to the families of eleven deceased ministers.

The receipts of the Committee of Foreign Missions had been $370,187. The committee reported an indebtedness of $1,577. The following is a general summary of the missionary work under the charge of the committee:

- Number of missions... 4
- Number of stations and out-stations (about)... 20
- Number of ordained missionaries... 25
- Number of female assistants... 5
- Whole number of laborers from this country... 33
- Number of native presbytery... 15
- Native Scriptures... 1
- Native teachers and other native helpers... 30
- Whole number of laborers... 34
- Number of organized churches... 2
- Number of church-members (approximate)... 15
- Added during the year, approximately... 1
- Number of theological training-courses... 1
- Number of pupils in the same... 1
- Boarding-schools for boys... 1
- Number of pupils in the same... 1
- Day-schools... 1
- Number of pupils in the same... 1
- Whole number of pupils... 1

**General Assembly.**—The General Assembly of the Presbyterian Church in the United States met in Vicksburg, Miss., May 15. The Rev. T. D. Witherspoon, D. D., was chosen moderator. The question whether fraternal deacons should again be sent to the General Assembly of the Northern Presbyterian Church and to the General Synod of the Reformed Church in America was considered. The previous General Assembly had decided that correspondence with the general courts of sister churches with which it would maintain fraternal relations should be by letter, except that deacons should be sent to the Northern Presbyterian General Assembly and the General Synod of the Reformed Church in America "at the next ensuing sessions in 1889 and 1890 respectively; for the amount of one body in June, 1888, and of the other in May, 1884. The Assembly decided to abide by its action of 1883. In transmitting its decision to the Northern General Assembly, it added the assurance that in taking this course it would not be understood "as receding in the least from any former expression of fraternal regard." A paper was adopted with respect to co-operation with the Presbyterian Church in the United States of America, and in which the interests of the two churches may come in contact. It decided that it was impracticable to adopt a plan for co-operation in home missions that should be universally applicable throughout the Church, and that the whole matter should be left "to the working of those broad principles of justice and Christian charity which alone will restrain either Church from encroaching upon the natural territory of the other." For comity in matters of discipline, the several courts of the Church were enjoined to have regard to the discipline of all the sessions, presbyteries, and synods of the Northern Church, expecting a reciprocal regard from them. The attention of the presbyteries and sessions was directed to the importance of taking notice of violations of the law of the Church on Sabbath observance, and it was advised that the sessions be enjoined to administer discipline, "at least so far as admonition and reproof are concerned," whenever it should be necessary. An opinion was expressed adverse to the recognition of the validity of Roma.
Indie baptism. A pastoral letter was ordered drafted for bringing the subject of family prayer before the congregations, and for impressing upon pastors the obligation of urging upon the churches. A decision was given the Assembly adverse to the right of a pastor to instruct its delegates to presbytery how to vote on a given question.

III. United Presbyterian Church of North America.

The statistical committee of this church reported to the General Assembly in May that the number of ministers was 759; of congregations, 858; and of members, 87,687. The returns show an increase of 2 ministers, 19 congregations, and 2,194 members. An immense of 739 members was also returned from two presbyteries in India and Egypt.

The Board of Ministerial Relief reported that its endowment fund now amounted to $45,080, having increased $15,000 during the year. Aid to the amount of $5,800 had been contributed to 28 persons.

The Board of Home Missions had received $8,357, besides $181,919 of special funds from the Quarterly-Centennial Commission, while its pean tit amounted to $41,803. This showed a deficiency on the general account of $1,145. Aid had been granted to 209 stations, surprising, so far as was reported, 11,324 members and on which there had been a net gain of 1,353 members. Among the missions of high special notice was made one to a Chinese in Los Angeles, Cal., and one to a Warm Springs Indians in Oregon.

The Board of Publication reported that the amount of the business done during the year in that department was $54,309. The Committee on Sunday-Schools reported 1 schools, with a total enrollment of 78,695, and an average attendance of 49,940 for the year. The schools had contributed toward their own expenses and for the enterprise of Church, $55,387.

General Assembly.—The General Assembly of the United Presbyterian Church in North America met in St. Louis, Mo., May 28. The Rev. W. H. French, D.D., was chosen moderator. Memorials were received on the question of the use of instrumental music in worship, which a previous General Assembly had ordained to tolerate, some asking that no further action be taken on the subject, others declaring passage of this clause was an admission of the principle. The minority report, that they be refused. The minority report was rejected by a vote of 83 to 128, and the majority report was adopted.

The Judiciary Committee, to whom the memorial on the subject had been referred, made a report advising that “the request of memorialists asking the Assembly to decide that, according to the standards of our Church, the use of instrumental music in worship is unlawful, be not granted.” This resolution was adopted by a vote of 113 to 84, while an amendatory resolution committing the General Assembly to the declaration that the standards of the Church authorize the use of instruments received only two votes. The Committee on Bills and Ordinances reported on the subject, recommending that the Assembly treat the present settlement as final. This was adopted, while an amendment sending the question down in order to the presbytery was rejected. A committee was appointed to meet in conference at Pittsburgh, Pa., Sept. 25, 1864, with representatives of the different psalm-singing churches in America.

IV. Reformed Presbyterian Church, Synod.—The following is a summary of the statistics of the Synod of the Reformed Presbyterian Church in the United States:

Number of presbyteries (New York, Vermont, Philadelphia, Rochester, Pittsburg, Ohio, Lakes, Illinois, Iowa, Kansas, and New Brunswick and Nova Scotia), 11; of ministers, 110; of congregations, 124; of communicants, 10,671; of persons in Sunday-schools, 1,196 teachers and 9,777 scholars. Amount of contributions, $218,898, divided as follows: for foreign missions, $18,364; for home missions, $3,940; for the Freedmen’s Mission, $3,985; for national reform, $4,764; for the Theological Seminary, $4,901; for the educational fund, $18,273; for church erection, $31,949; for pastors’ salaries, $33,926; miscellaneous, $56,926.

The Board of Church Erection reported to the Synod at its meeting that it had given aid to five churches. The Synod’s Committee on Finance returned the endowment funds of the various institutions and benevolent enterprises of the body at $140,059. Ten ministers were engaged in domestic missionary work under the direction of the Synod. Ten persons were employed, as missionaries or teachers, in the Southern mission, which returned 38 communicants and about 580 pupils. A Chinese mission is sustained at Oakland, Cal. The foreign mission is at Latukieh, Syria, with two stations and a mission at Tarsus. It returned 144 communicants and 25 schools, with 688 pupils.

Synod.—The Synod of the Reformed Presbyterian Church met at Northwood, Ohio, May 28. The Rev. P. H. Wylie was chosen moderator. The Synod is identified with the national reform movement, or the agitation for the adoption of an amendment to the Constitution of the United States embodying a definite recognition of the Christian religion. Three ministers had been laboring throughout the year, and four others, for a shorter time, under its direction, in advocacy of that measure. Ministers were again exhorted to press the position of dissent from the Constitution of the United States on the attention of the congrega-
tions and those around them. A question was presented to the Synod regarding the consistency with its position on this subject of voting on amendments to State Constitutions, amendments embodying the prohibition of the liquor-traffic being particularly referred to. The committee to which the subject was referred presented two reports of opposite tenor, on which action was deferred till the next meeting of the Synod. On the subject of temperance, resolutions were adopted, declaring that "duty requires us in the observance of the Lord's Supper to use a cup that contains as much as possible of the pure fruit of the vine, and as little as possible of that which intoxicates"; and that "we bear testimony to the fact that those who incorporate with the Government of these United States have fellowship with the throne of iniquity in this great sin."

V. Reformed Presbyterian Church, General Synod.

The statistics of this body are incomplete. The number of communicants under the care of the General Synod was estimated at about 6,700; of these about 8,500 are in the three presbyteries East, and the remainder in the three presbyteries West. The scholars in the Sunday-schools are in the proportion of about three to five. The salaries of the pastors range from $700 to $2,500.

The General Synod met in Pittsburg, Pa., May 21. The Rev. William J. Smiley was chosen moderator. The treasurer of church extension reported that his receipts had been $2,789, and his expenditures $2,884. The treasurer of the theological seminary returned the amount of the endowment fund of the institution as $34,791. Its receipts for the year had been $2,610, and its expenditures $2,904. The Lamb fund, the revenue of which is to be appropriated in aid of the education of young men preparing for the ministry, was represented by real estate having an assessed value of $12,800. The amount of the sustentation fund was returned at $5,810. The receipts of the Board of Domestic Missions had been $1,627. Four ordained ministers and four licentiates were employed in the work of the board. The receipts of the Board of Foreign Missions had been $3,615. The mission in India had been reopened at Roorkie, in the Northwest Provinces, under the charge of the Rev. Mr. Scott, who was assisted by five licentiates. A letter of greeting was sent to the Eastern Reformed Presbyterian Synod in Ireland. A communication was adopted to be presented to the National Conventions of the political parties about to meet for the nomination of candidates for President and Vice-President of the United States, inviting consideration of the doctrine of the supremacy of Jesus Christ, and asking them to recognize it.

VI. Cumberland Presbyterian Church. — The General Assembly of the Cumberland Presbyterian Church met at McKeesport, Pa., May 15. Mr. John Frizzell, a ruling elder, was chosen moderator. In response to a number of overtures, asking changes to be made in the "Confession of Faith" and the "Book of Discipline," a minute was adopted declaring that, whereas, the "Revised Confession of Faith" and "Form of Govern-
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at had, within two years, been approved
in great unanimity by a large majority of
presbyteries, thereby becoming the faith
and government of the Church, it was the
use of the Assembly that it was unwise to
taste the subject of change so soon after this
1 been done. The Assembly, therefore, ad-
ced all its judicatures and individual members
3 (at least for the present) from motions
ring that end in view.

VIII. Canada Presbyterian Church.—The General
sembly of the Canada Presbyterian Church
in Toronto, June 4. The Rev. Prof.
Laren was chosen moderator. The Home
mission Committee (Western section) reported
progress of their work in the Province of
Saskatchewan, as well as in Montreal and in the
Northwestern settlements. The Committee of
the Eastern section, whose jurisdiction covers
the maritime provinces, returned an increase
twenty-five per cent. in the number of
ministers connected with the stations. The
Evangelization Committee reported
that it had employed 64 missionaries of all
countries, including 11 colporteurs, 19 ordained
ministers, and 22 missionary teachers; and
that they had 17 mission-schools with 537
pupils, 42 mission-fields, and 78 preaching-sta-
tions, with 905 families and 984 persons
of mixed origin in full communion with the
Church. It had also a mission to the Italian
people in the city of Montreal. A paper in
French language was published under the
auspices of the committee. The mission was
viewed to be one of the most difficult in the
world. The Foreign Missionary Committee re-
ted on the condition of the missions in
Africa, New Hebrides, where the gospel
preached in every part of the island, with
schools and 195 adult members: Trinidad
and the coolies), where 1,800 children were
enrolled in the schools, and the people contrib-
able an average of $12.60 for each communi-
y; and in Central India was appointed to manage
a plan for the union of
missionary Committee (those
the Eastern and Western sections) into one.
ong the more important questions discussed
was the Assembly was one concerning the pow-
er if the Assembly in the matter of the insti-
tution of new theological colleges and theo-
cal professorships. An overture was pre-
fore the Synod of Hamilton and Lon-
f that no new college be instituted,
no new chair be founded in an existing
gate by the Assembly alone. The Assembly
saying the overture, expressed its approval
the part relating to new colleges, but de-
ed to deal with the question of power to
stitute new professorships. A declaration
adopted to be submitted to the presby-
ters, but without committing the Assembly
t to its conclusions, embodying the following
facts on the subject of marriage with a de-
ed wife’s sister: That the Mosaic law of
et is of permanent obligation, and marriage
ought not to be within the degrees of consan-
guinity or affinity forbidden in the Word; that
the proposition that “a man may not marry
any of his wife’s kindred nearer in blood than
he may of his own,” is not sufficiently sustained
by the authority of Scripture; and that church
discipline shall not be exercised in regard to
marriage with a wife’s sister, wife’s aunt, and
wife’s niece. An overture was received from
the Synod of Montreal and Ottawa, deprecating
the evils of party politics. It declared that
partisanship, by interfering with the exercise
of fair-mindedness in regard to public men and
public questions, and by inducing a spirit of
distrust, tends to undermine the love for truth
and loyalty to truth in the community; that
by engendering and fostering a spirit of strife
in connection with political issues, it seriously
disturbs the exercise of the love and good-will
that ought to prevail in a Christian land; and
that, by demanding unswerving obedience to the
interests of party, it prevents the free and
honest expression of opinion at the polls and
in the halls of the Legislature. The Assembly
expressed its general sympathy with the spirit
of the overture. A deputation was appointed
to wait upon the Government of the Dominion,
with reference to the violation of the Lord’s
day by the postal department, in forwarding
and distributing mails, by railway companies,
and by military companies and other
organizations in public parades. The Assembly,
expressing a hope for the ultimate total ex-
termination of the liquor-traffic, reiterated its
approval of the principle of the Canada Tem-
perance Act of 1878, and recommended its
adoption. It also advised the formation of
temperance societies in congregations, and in-
structed the presbyteries to hold annual con-
ferences on temperance. A congratulatory
resolution was adopted relative to the union
of the Methodist churches in Canada.

VIII. Church of Scotland.—The Committee on
Christian Liberty of the Church of Scotland
reported to the General Assembly that apart
from seat-rents the contributions and legacies
amounted in 1888 to £310,420, as compared
with £306,201 in 1882. The condition of the
more important funds of the Church, as shown
in the reports of the committees having them
severally in charge, was in brief as follows: The
income reported by the Committee on Education
on the aggregate accounts was £65,854, and
the total expenditure was £26,734. Favorable
reports were made of the training colleges for
male and female teachers. The total receipts
of the aged and infirm ministers’ fund had been
£8,493. The capital fund at the close of 1888
was £14,355. The Endowment Committee re-
turned a revenue of £11,396, and reported that
six new parishes, having a population of 9,800,
had been endowed and erected. The Commit-
tee on Patronage Compensation had paid dur-
ing 1888, £1,773, and in the whole term of its
work, £10,723, to presentees in payment of
reductions made by patrons from them. Of
343 parishes in which compensation had been claimed, 88 had become vacancies. The Home Mission Committee returned its year's receipts at £10,430. It had sustained 41 mission-stations, with a certified attendance of 4,777, and 75 mission churches, with 15,780 attendants; and had aided in the building, enlargement, or acquisition of 12 places of worship. The income of the Committee on Small Livings for 1888 was £4,743; and the sum of £8,073 had been distributed in July of that year.

The Committee in Aid of the Highlands and Islands of Scotland had received £345, and had paid out £229. The Christian Life and Work Committee had received £389, and had expended £473. Its operations are of the nature of mission-work in Highland parishes and at fishing-stations. The whole income for the colonial department work for the year had been £5,803 and the whole expenditure £5,906. The report related what had been done for the support of colonial churches in India, Ceylon, Cyprus, Africa, Canada, the West Indies, British Guiana, the Argentine Republic, Australia, and Fejee. The income of the Committee for the Conversion of the Jews had been £5,164, and the expenditure £5,548. The committee sustained schools at Constantinople, Smyrna, Salonica, Monastir, and Alexandria, and carried on a work of visitation to adult Jews.

The income of the Foreign Mission Committee for 1888 was £29,507, besides which £1,029 had been received up to the time of making the report for the proposed new mission to the aborigines in India. The missions are in India and China, and at Blantyre in Africa. The committee asked authority for beginning a mission among the Santals in India.

General Assembly.—The General Assembly of the Church of Scotland met in Edinburgh, May 22. The Rev. Dr. Peter Mackenzie, of Urquhart, was chosen moderator. The attention of the Assembly was largely taken up with difficulties that had arisen in connection with the mission in Calcutta. Notice was taken of the agitation in favor of disestablishment, which the committee having the subject in charge declared had failed. The Assembly resolved, concerning the divisions of Scottish Christianity, that "the General Assembly desire again to place on record their steadfast adherence to the principles expressed in the letter sent to other Presbyterian churches in 1875, in which the Assembly gave expression to their deep sense of the manifold evils arising from the ecclesiastical divisions of Scotland. The General Assembly renew the expression of their hearty willingness and desire to take all possible steps consistent with the maintenance and support of an establishment of religion to promote co-operation in good works and the reunion of churches which adhere to the same Confession of Faith. They renew their injunction to ministers to cultivate in their work the spirit of unity and habit of co-operation with the ministers of all evangelical churches."
PRESBYTERIANS.

it saw no reason for reopening

Concerning the question of dis-

The Assembly resolved that, re-

considered that the settlement

the Assembly, it declares the conviction

sivism, and healthy action of

iety, and healthy action of

; as well on their own members

ject of national affairs, disestab-

essential." It

it considered that the settlement

immunity, it declares the conviction

view to justice, peace, reunion

by a representation in which nothing shall be missed,

the one hand; and set down to unsatisfactoriness or

and charged to blind traditionalism and insensibility to modern progress. But there are

ines and in fact, two kinds of definition, the one of

which would be merely historical, and the other the

uations of a new and living creed by the Alliance.

The Council, with a reservation against commit-

mitting itself to all the reasoning by which the

The Cumberland Presbyterian Church, which had sent delegates to the

Previous session of the Council, had been de-

inexpedient at the present time to attempt a defi-

ition of the doctrinal consensus of the Re-

formed Churches." The Cumberland Presby-

terian Church, which had sent delegates to the

The Cumberland Presbyterian Church into the Alliance," and

The opening sermon was preached Prof. Watts, of Belfast. The

Statistics presented a report it was acknowledged to be in-

owed that there were included churches designated in the title of

63 organized bodies, 1,507 pres-

ynods, 20,691 congregations, 1-

tations, 21,851 ministers, and 6-

nunciantas. The missions of the

return in the aggregate 1,065 for-

,655 native agents, and 72,396

The functions of presiding of-

charged by different members at daily sessions. The committee

been appointed at the council

Philadelphia in 1830, to con-

ability of defining the consensus

Med Confessions, as specified by

ion of the body, made a report,

record of its deliberations and

its correspondence with vari-

Presbyterian bodies, and

conclusions to be adverse to the

such a consensus. The re-

warding the grounds on which this

which might arise from a satis-

if the consensus seem to the committee;

as the problem of translating the

ace of documents that have become

into the phraseology of the nineteenth

all in form without change of spirit,

es that are not in all things identical.

lxxiv—43 A
objects of the Alliance, during the intervals between the meetings of Council. This commission is to be divided into two or more sections—viz., a European section and an American section, each of which, again, shall have power by a majority vote to add to its number and fill vacancies. They shall also endeavor to secure the organization of auxiliary Alliances. It shall be for the consideration of the Executive Commission whether separate auxiliary Alliances shall also be formed for the Colonies of Europe and the colonies of Britain, or whether these shall be included in sub-sections under the other two. The commission shall report to next meeting of Council, giving an account of all its sub-sections and operations.

The financial scheme contemplates an ordinary revenue to be derived from the gifts of individuals and churches and from legacies, each church being invited to contribute one pound, or five dollars, per annum, for each delegate it is entitled to send to the Council and individuals what they are able and willing to give. An enterprise for the publication of translations of the Latin writings of John Wycliffe, now deposited in Vienna and Prague was commended. The next session of the Council was appointed to be held in London. Papers were read and addresses delivered during the meetings of the Council, in accordance with a programme previously prepared, which was intended to include various subjects relating to the condition, interests, and progress of the Christian churches in general, and particularly of the Presbyterian and Reformed churches and their missions.

PREMIA. See CANTAMARAN.

PROTESTANT EPISCOPAL CHURCH IN THE UNITED STATES. This Church derives its origin from the Church of England, and is in communion with that Church and its branches throughout the British Empire. The year 1864 was marked by anything specially noteworthy, and the Episcopal Church has simply moved forward in its usual work and with its usual success. The following is a general statistical summary:

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<td>Baptisms—outside</td>
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<td>6</td>
<td>5</td>
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| Total | 5,605 | 2,988 | 49,059 | 29,864 |

Missions.—The Board of Missions consists of the bishops of the Church, of the chairman of the House of Deputies, and of the Board Managers. It holds its sessions at the time and place (viz., every third year) at General Convention. The Board of Missions consists of the bishops, the treasurer of the Board, and fifteen clergymen and fifteen men appointed triennially. The managers
now committed to the care of the Christian ladies constituting that league. The prospect for the future is cheering in a high degree.

Building Fund.—The American Church Building Fund Commission, established in 1860, continues its work, and the year 1884 furnishes some encouragement to persevere in the efforts to secure the $1,000,000 named as its capital with which to work in the future. The commission has rendered invaluable service in investigating the titles to church property, and adding to its security in all time to come. Applications for loans, amounting to $60,350, were received, and thirty-six loans were granted, amounting to $35,700. These were mostly in dioceses in the South and Northwest, and to missionary jurisdictions. Gifts aggregating to about $1,500 were made during the year. Cash balance in hand, $38,970.80. Total amount received for permanent fund, $54,226.95.

Work among the Jews.—The Society for Promoting Christianity among the Jews (auxiliary to the Board of Missions) reports encouraging progress. During the year twelve new missionaries were appointed; two mission-schools were established, making six in all; seven industrial schools were in full operation; the result being a total of two hundred and ninety-one workers, reaching Jews in two hundred and sixty-one cities and towns, forty-three dioceses, and thirteen missionary jurisdictions.

Receipts, etc., Sept. 1, 1884. $37,148.01
Expenditure for schools, etc. 28,862.80
Trust fund 5,985.00
Total 67,648.81

General Conditions.—During the year 1884 two bishops died, viz., Bishop Smith, the presiding bishop, and Bishop Clarkson (see Overview, Akron). Fifty-seven others of the clergy. Three new bishops have been consecrated, viz., Alfred A. Watson, Bishop of East Carolina; William J. Boone, Missionary Bishop for Shanghai, China; and Nelson S. Bulson, Assistant Bishop of Central Pennsylvania. In addition to those named above, there are various other societies and organizations for carrying forward church work, as the Church Temperance Society, the Society for the Increase of the Ministry, the Church German Society, the Free Church Association, the Fund for Relief of Widows and Orphans of deceased Clergymen, and of Aged, Infirm, and Disabled Clergymen, the twelve Sisterhoods and Deaconesses, etc., all of which have done good service in the year 1884. The Episcopal Church has also under its control nine colleges, in different parts of the country, and it secures sound training for its clergy in the sixteen theological seminaries and divinity schools devoted to this end. In the way of periodicals, there are eight weekly church papers, five monthly magazines, and one quarterly, which strive to promote the interests and defend the truth as it is held and taught in this branch of the Church of Christ.
QUEBEC. PROVINCE OF. The year 1884 opened in Quebec after one of exceptionally "hard times" in business, and continued in the same line as its predecessor. In January Montreal held a magnificent winter carnival, which was visited by hundreds of thousands from all parts of America. The special attractions were: The Ice Palace, a massive structure built of huge blocks of ice frozen together; the Tower, also of ice; tobogganing, or sliding down the mountain-side on flat-bottomed sleighs; snow-shoeing, skating, and curling. The success attending the 1884 carnival has encouraged the merchants of the city to make it an annual affair. One of the most picturesque views in connection with the carnival was the torch-light procession of snow-shoers in Indian file. This procession extended over seven miles, and wound in serpentine form up one side of the mountain, thence down another slope, and still downward through the city, till the ice tower was reached; thence up the tower by a spiral footpath, till the leader stood, torch and banner in hand, on the pinnacle.

Legislation. One important act was the taxing of banking institutions, capital, etc. The act was contested by the banks, but the Supreme Court ruled it to be within the jurisdiction of the province. An appeal to the Privy Council of Great Britain has been entered.

Lively interest in provincial politics was aroused during the year by disaffection or disagreement among the Ultramontane or Blue party in the Legislature. Some startling revelations of a questionable nature, which implicated prominent members of a wing of that party, became public, but the questions were dropped, and the breaches were closed up.

The New Territory. Attention has been much centered on the northern portion of the province, from the fact of Ontario's having won her case against Canada. Exploring parties have reported immense tracts of farming, mining, and timber lands within easy reach of either James's Bay or the St. Lawrence. A railway is partly constructed, leading from Quebec northward to and beyond Lake St. John. The priests and French Canadians in general have been endeavoring to repatriate the thousands of their fellow-countrymen living in the New England States and the other Canadian provinces, and to settle them in the fertile districts toward the northern part of their province. Several thousands of French Canadians returned home during the year. There were also some thousands who departed to the United States for the winter.

Elections. An attempt to blow up the new Provincial Parliament buildings was made during the summer of 1884. One wing was badly wrecked. Fortunately, no lives were lost, there being no one in the wing at the hour of the explosion. Various cases were assigned, but the result of the investigation was no one. Little political importance was attached to the event.

The Lyman Lunacy Case. Great interest centered in a case of lunacy, or of puerile lunacy, in Quebec, during the latter part of the year. A Mrs. Lyman, in an asylum under provincial care, pronounced by a board of surgeons entirely sane. An attempt was made to have her case investigated, but the storm of public opinion was met, and she was discharged.

The British Association honored by holding the annual meeting for that city. (See Associations for the Advancement of Science.)

Crops. The crops from Quebec were few and unreliable, but from general observation the year's returns have been somewhat better than the previous year. The crops of wheat, oats, and corn are exceptionally good, the rice crop being exceptionally fine.

The Scott Act advocates, make Quebec one of the last places in Canada where the army attacked Montreal, subjected to considerable persecution, and the leaders of the Salvation Army leaders were brought to trial in Montreal, and the ornate clause (which was not in the original) specifying the Army's duty, was rejected. The judges held that the Army was justified in acting, but that it was not in sympathy with Catholicism, and charged the leaders. The case was supported on behalf of the Army by the most prominent Protestant great in Montreal, which may have caused a general interpretation of the old laws to be used against the Army.
RAILWAY SERVICE OF THE UNITED STATES.

RAILWAY SERVICE OF THE UNITED STATES, since there were less than 1,000 railway in operation in the United States in 1830.

At the close of the civil war the number of miles had reached a little over 88,000. In 1861, 1866, we have over 125,000. The cost of the service has been over $7,000. The actual cost has doubtless been over $6,000,000,000. At the latter sum it is over 100 per cent, of the value of all the land of the country. That is to say—omit the increase in the capital that is placed upon a use to which it is put, and by the facilities for the present value of all the railroad property, mines, dwellings, farm-machinery, and improvements, together with all goods and wares of every description on sale, and including household furniture, mechanics' tools, and all railways, canals, improvements of mines, oil-wells, and the like, can not exceed $30,000,000,000. Neglect the land for two or three years, and it reverts to a state of nature; the warehouse of twenty-five years' date is hardly suitable for purposes of modern commerce; close the dwellings and it will soon be ruined; neglect the mill for a single winter, and its wheels may never start again; what moth, rust, and frost do not destroy, the inventor, more destructive than either, renders valueless by substituting improved works or machinery by which more work can be done with less labor. Even the superstructure of the railroad may be destroyed, but the opening of the

Miles of Railroads in Operation on the 1st January in Each Year and the Miles Added in the Year Therein.

<table>
<thead>
<tr>
<th>Year</th>
<th>Miles in Operation</th>
<th>Miles Added</th>
</tr>
</thead>
<tbody>
<tr>
<td>1830</td>
<td>33,908</td>
<td></td>
</tr>
<tr>
<td>1831</td>
<td>1,177</td>
<td></td>
</tr>
<tr>
<td>1832</td>
<td>35,065</td>
<td></td>
</tr>
<tr>
<td>1833</td>
<td>1,712</td>
<td></td>
</tr>
<tr>
<td>1834</td>
<td>36,801</td>
<td></td>
</tr>
<tr>
<td>1835</td>
<td>3,449</td>
<td></td>
</tr>
<tr>
<td>1836</td>
<td>39,250</td>
<td></td>
</tr>
<tr>
<td>1837</td>
<td>2,979</td>
<td></td>
</tr>
<tr>
<td>1838</td>
<td>42,229</td>
<td></td>
</tr>
<tr>
<td>1839</td>
<td>4,615</td>
<td></td>
</tr>
<tr>
<td>1840</td>
<td>46,844</td>
<td></td>
</tr>
<tr>
<td>1841</td>
<td>6,070</td>
<td></td>
</tr>
<tr>
<td>1842</td>
<td>53,916</td>
<td></td>
</tr>
<tr>
<td>1843</td>
<td>7,979</td>
<td></td>
</tr>
<tr>
<td>1844</td>
<td>60,298</td>
<td></td>
</tr>
<tr>
<td>1845</td>
<td>5,878</td>
<td></td>
</tr>
<tr>
<td>1846</td>
<td>66,171</td>
<td></td>
</tr>
<tr>
<td>1847</td>
<td>4,107</td>
<td></td>
</tr>
<tr>
<td>1848</td>
<td>70,978</td>
<td></td>
</tr>
<tr>
<td>1849</td>
<td>2,105</td>
<td></td>
</tr>
<tr>
<td>1850</td>
<td>72,358</td>
<td></td>
</tr>
<tr>
<td>1851</td>
<td>1,718</td>
<td></td>
</tr>
<tr>
<td>1852</td>
<td>74,096</td>
<td></td>
</tr>
<tr>
<td>1853</td>
<td>2,713</td>
<td></td>
</tr>
<tr>
<td>1854</td>
<td>76,808</td>
<td></td>
</tr>
<tr>
<td>1855</td>
<td>2,881</td>
<td></td>
</tr>
<tr>
<td>1856</td>
<td>78,999</td>
<td></td>
</tr>
<tr>
<td>1857</td>
<td>2,687</td>
<td></td>
</tr>
<tr>
<td>1858</td>
<td>81,776</td>
<td></td>
</tr>
<tr>
<td>1859</td>
<td>4,731</td>
<td></td>
</tr>
<tr>
<td>1860</td>
<td>86,497</td>
<td></td>
</tr>
<tr>
<td>1861</td>
<td>70,48</td>
<td></td>
</tr>
<tr>
<td>1862</td>
<td>98,545</td>
<td></td>
</tr>
<tr>
<td>1863</td>
<td>9,789</td>
<td></td>
</tr>
<tr>
<td>1864</td>
<td>108,334</td>
<td></td>
</tr>
<tr>
<td>1865</td>
<td>11,591</td>
<td></td>
</tr>
<tr>
<td>1866</td>
<td>114,525</td>
<td></td>
</tr>
<tr>
<td>1867</td>
<td>4,618</td>
<td></td>
</tr>
<tr>
<td>1868</td>
<td>121,443</td>
<td></td>
</tr>
</tbody>
</table>
way is permanent, and it is almost the only permanent result of human labor. The only work that remains of the Roman Empire, except ruined buildings, is the Roman road that opened the way to the conquest of nations, and may even now serve the peaceful ends of commerce.

We may date the process of completing the through lines of railway of this country, both North and South, as well as East and West, since the end of the civil war. The consolidation of Eastern and Western lines was begun by the late Cornelius Vanderbilt in 1866, when the New York Central and Hudson River line was united under one control with the Lake Shore and Michigan Southern, making a through line from New York to Chicago under one administration. Our progress in railway construction since 1864 may be comprehended most fully by the use of graphical tables.

It will be observed that this progress in construction has been affected by what may be called great waves, culminating at two dates, to wit, in 1871 and in 1882, which years were followed by periods of great commercial depression. These waves may be shown more effectively if the construction be shown separately.

The construction of a railroad represents in greater measure than almost any other form of capital a given and measurable amount of direct human or manual labor, coupled with but a moderate application of labor-saving machinery or capital. It represents more than almost anything else a conversion of human labor, but little assisted by capital in labor-saving machinery, into one of the most effective forms of fixed capital. It is the work of the farmer and the lover, of the navvy, the trolly, the operative in the rolling-mill, and the woodman that cuts the ties, as of the iron and coal miner, the men who make for the railroad the work of a relatively small amount of mechanics in building stations and equipment. We may only reduce the construction of railroads to terms of so many men's labor for a period in a very broad and general way, even in this manner we may make a substantial estimate of the force employed on each mile. If we assume that, with any regard to the nominal amount of security issued, each average mile of construction has cost $25,000 in gold, that represents, or might be converted in the work of 50 men for one year at $500 of 65 men at $400 each. A fairly approximate measure of the number employed varies midway, or 55 men. If the average per mile the number of men will be greater per year. At this high ratio of wages, employed in the construction of railroads, the proportions set against this data, the railroad construction of years may be represented by the following diagram:

```
Year | Number of Men
-----|----------------
1865 | 1,177
1866 | 3,718
1867 | 2,448
1868 | 2,978
1869 | 4,618
1870 | 6,070
1871 | 7,729
1872 | 5,808
1873 | 4,107
1874 | 2,105
1875 | 1,712
1876 | 2,711
1877 | 3,381
1878 | 3,687
1879 | 4,731
1880 | 7,176
1881 | 9,789
1882 | 11,581
1883 | 8,618
1884 | 4,000
```

The relative gain in comparison with population is as follows:

1865, Jan. 1. $4,000,000. (Substantially 1 mile to 1000 people.)
1882, Jan. 1. $8,000,000. Estimated. (Substantially 1 mile to 450 people.)
RAILWAY SERVICE OF THE UNITED STATES.

above basis, there were, in round 3,000 men employed in the construc-
tions in 1889. The number of miles
in that year was also, in round 1,000. Upon the data of the special
ory of 1,800, compiled by Mr. Schup-ppears the number of employed in
of railroads, including laborers, in
was five a mile. At this ratio, the
ge in the operation of railways a 500,000. Total force engaged in
or in the service of existing lines
0,000. According to the census
extent of all persons en-
very kind of gainful occupation in
year was 17,392,000, divided as fol-
lagriculture, 7,670,468; in professional
1 service, 4,074,338; in trade and
om, 1,810,566; in manufacturing,
, and mining industry, 8,587,112.
g that the large immigration of
caused an abnormal increase of
sion, the number of persons in all
ations in 1888 may be computed at
crease, giving the following result:
, 8,207,428; professional and per-
ce, 4,859,582; trade and transporta-
tons; manufacturing, mechanic arts,
, 4,100,709; total, 18,809,642.
is basis it would appear that in the
one person in sixteen and a fraction,
were occupied in any kind of gain-
tion, was employed either in the
or operation of a railway; or one
all engaged in all other occupations
will be observed that not fewer than
those engaged in the construction
were thrown out of that employ-
88, or 20 per cent. of all
occupied in other employments than
in 1889, or 20 per cent. of all
bers aside from farm laborers.
force seeking other work has
88, one mile to each 400 persons. Europe
has one mile to each 3,000 inhabitants, if Rus-
a be included; about one mile to each 2,540,
exclusive of Russia.

The United States had substantially one
mile of railway to each 540 inhabitants in 1881; in
1888, one mile to each 420 persons. Europe
has one mile to each 3,000 inhabitants, if Rus-

is one mile to each 420 persons. Europe
has one mile to each 3,000 inhabitants, if Rus-

has not been profitable to its owners. In the
same way, nearly every mile of the still greater
construction of 1883 will be justified in use, if
not in value to its owners, except such specu-
"artative absurdities as the names that have been
built parallel with the New York Central and
Lake Shore, from the Hudson River to Chicago.
It has been the speculative method, rather than
the measure of railway construction, that has
provoked disaster. This country is not yet half
served with the railway mileage that will soon
be necessary to its use, especially in the prairie
sections, where the "dirt-roads" are utterly
inadequate to the traffic, and the material for a
solid highway suitable for wagons is wanting.

We have passed through the period of rail-
road inception and of detached sections or lines,
through the period of consolidation, through
the period of needed extension of through
lines, through the period of speculative con-
struction of useless parallel lines, and we have
now reached the period of adjustment to whole-
some conditions, and of construction limited
to the necessity for cross-ways, side-lines, spe-
cial local roads, and the more complete con-
exion of the entire system of the country.
This latter necessity may soon require new
construction at the rate of 6,000 miles or more
per annum.

Soon after Jan. 1, 1881, the writer prepared
the following table (see page 690) in order
to show the inadequacy of the railway service
of the country, then numbering 32,546 miles,
as compared with the adequate service of the
State of Massachusetts. To this table is now
added a column showing the number of miles in
each State on the 1st of January, 1884. The
mileage added in 1884, computed at 4,000, has
not yet been subdivided. I have no data for
computing the additions in other counties or
other countries, but they are relatively very small as compared to
this country.

The United States had substantially one
mile of railway to each 540 inhabitants in 1881; in
1888, one mile to each 420 persons. Europe
has one mile to each 3,000 inhabitants, if Rus-

is one mile to each 420 persons. Europe
has one mile to each 3,000 inhabitants, if Rus-

in this treatise of 1881, the writer ventured
to forecast the probably necessary construction
of railways, in order to give other sections of
the country a service in some degree commen-
surate with that of Massachusetts, and for this
purpose he prepared the following tables, for
which no claim could be made, except as an
approximation to the probable need. In es-

a rough-and-ready
way, consideration has been given to the gen-
eral configuration of the several States and
Territories, to the probability of diversity of
occupation, to climate, and in some measure to
relative fertility. Of course, the divisions are
very general, and can only give an approximate
idea of the future construction. It will be seen
that about 117,500 miles of new railroads may
be required, which, at the rate of construction
<table>
<thead>
<tr>
<th>Rank</th>
<th>State/Region</th>
<th>Miles in operation Jan. 1, 1898</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>New Hampshire</td>
<td>1,300</td>
<td>1,300</td>
</tr>
<tr>
<td>2</td>
<td>New York</td>
<td>1,005</td>
<td>1,005</td>
</tr>
<tr>
<td>3</td>
<td>Massachusetts</td>
<td>820</td>
<td>820</td>
</tr>
<tr>
<td>4</td>
<td>Pennsylvania</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td>5</td>
<td>Ohio</td>
<td>520</td>
<td>520</td>
</tr>
<tr>
<td>6</td>
<td>Illinois</td>
<td>480</td>
<td>480</td>
</tr>
<tr>
<td>7</td>
<td>Missouri</td>
<td>440</td>
<td>440</td>
</tr>
<tr>
<td>8</td>
<td>Michigan</td>
<td>380</td>
<td>380</td>
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<tr>
<td>9</td>
<td>Wisconsin</td>
<td>320</td>
<td>320</td>
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<tr>
<td>10</td>
<td>Indiana</td>
<td>300</td>
<td>300</td>
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<tr>
<td>11</td>
<td>Ohio</td>
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<td>280</td>
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<tr>
<td>12</td>
<td>Missouri</td>
<td>240</td>
<td>240</td>
</tr>
<tr>
<td>13</td>
<td>Illinois</td>
<td>220</td>
<td>220</td>
</tr>
<tr>
<td>14</td>
<td>Michigan</td>
<td>200</td>
<td>200</td>
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<tr>
<td>15</td>
<td>Wisconsin</td>
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<td>180</td>
</tr>
<tr>
<td>16</td>
<td>Indiana</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>17</td>
<td>Ohio</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>18</td>
<td>Missouri</td>
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<td>100</td>
</tr>
<tr>
<td>19</td>
<td>Illinois</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>20</td>
<td>Michigan</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>21</td>
<td>Wisconsin</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>22</td>
<td>Indiana</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>23</td>
<td>Ohio</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>24</td>
<td>Missouri</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>25</td>
<td>Illinois</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>26</td>
<td>Michigan</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>27</td>
<td>Wisconsin</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>28</td>
<td>Indiana</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>29</td>
<td>Ohio</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>30</td>
<td>Missouri</td>
<td>7</td>
<td>7</td>
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<tr>
<td>31</td>
<td>Illinois</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>32</td>
<td>Michigan</td>
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<td>4</td>
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<tr>
<td>33</td>
<td>Wisconsin</td>
<td>3</td>
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</tr>
<tr>
<td>34</td>
<td>Indiana</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>35</td>
<td>Ohio</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>36</td>
<td>Missouri</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>37</td>
<td>Illinois</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>38</td>
<td>Michigan</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>39</td>
<td>Wisconsin</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>40</td>
<td>Indiana</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4,956</td>
</tr>
</tbody>
</table>

Note: Total 4,956 miles includes 300 miles of trackless B & O.
RAILWAY SERVICE OF THE UNITED STATES.

Undertaking these railways to be completed, the States to which the new mileage assigned, or in some others, the proof of the total mileage (209,000) to the United States (omitting Alaska) a be only one mile to about fifteen miles. In other words, the United States (omitting Alaska) would then be about as well served as Massachusetts average construction called for in this was 6,250 miles a year from the 1st of 1881. The actual construction from 1881, to Jan. 1, 1885, estimating 1884 miles, has been 28,047 miles, or at the 000 miles a year.

To be asked, What inducement will there be the construction of the additional milk will be required in order to justify action, if existing lines fail to pay a their operation? To this question replies may be given: 1. Had all the now in existence been constructed on lines, and had they been represented by bonds that had been subscribed and in good money, they would as a whole presented a profitable investment to others, and would even now yield a real income on their cost. 2. Railways are the necessary substitute for common local or cross-country traffic, and they constructed for such purposes, even if they fail to pay in income directly, indirectly they give value to otherwise useless land, and they create the very at will sustain them. How this traffic by the railways can best be shown during the increase of the grain-crops of the United States with the extension of the railway mileage; and, although during the past four years the railway mileage has been forced in apparently too great a measure, yet the same rule may hold in each period of ten or twenty years:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Pounds.</th>
<th>YEAR</th>
<th>Pounds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1865</td>
<td>1,197,666,187</td>
<td>1870</td>
<td>2,082,235,800</td>
</tr>
<tr>
<td>1866</td>
<td>1,649,057,568</td>
<td>1871</td>
<td>1,962,561,500</td>
</tr>
<tr>
<td>1867</td>
<td>1,325,729,400</td>
<td>1872</td>
<td>2,176,924,648</td>
</tr>
<tr>
<td>1868</td>
<td>1,450,700,000</td>
<td>1873</td>
<td>2,902,596,469</td>
</tr>
<tr>
<td>1869</td>
<td>1,450,700,000</td>
<td>1874</td>
<td>2,902,596,469</td>
</tr>
<tr>
<td>1870</td>
<td>1,450,700,000</td>
<td>1875</td>
<td>2,902,596,469</td>
</tr>
<tr>
<td>1871</td>
<td>1,450,700,000</td>
<td>1876</td>
<td>2,902,596,469</td>
</tr>
<tr>
<td>1872</td>
<td>1,450,700,000</td>
<td>1877</td>
<td>2,902,596,469</td>
</tr>
<tr>
<td>1873</td>
<td>1,450,700,000</td>
<td>1878</td>
<td>2,902,596,469</td>
</tr>
<tr>
<td>1874</td>
<td>1,450,700,000</td>
<td>1879</td>
<td>2,902,596,469</td>
</tr>
<tr>
<td>1875</td>
<td>1,450,700,000</td>
<td>1880</td>
<td>2,902,596,469</td>
</tr>
</tbody>
</table>

Another example of the way in which the extension of the railway service may build up a single State, and thereby ultimately become profitable to its owners through the increase of local traffic, may be found in the conditions of the railway service of the State of Ohio. The data are taken from the report of Commissioner Sabine. This State lies midway between East and West. In 1888 it contained 8,897 miles of railroad, against 3,324 in 1869. In 1869 the actual tons moved over all the railways reporting in the State numbered 14,559,704, of which 53 per cent. represented local traffic and 45 per cent. through traffic. In 1888, 63,688,433 tons were moved, of which 66 per cent. represented local traffic and only 34 per cent. through traffic, showing how the local traffic gains, both absolutely and relatively. The charge per ton per mile in 1869 was 2.443 cents; in 1888, only 875 cents per ton per mile. Graphically the Ohio railroad traffic may be represented in this way:

<table>
<thead>
<tr>
<th>Tons Moved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1869</td>
</tr>
<tr>
<td>1888</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Charge per Ton per Mile</th>
</tr>
</thead>
<tbody>
<tr>
<td>1869</td>
</tr>
<tr>
<td>1888</td>
</tr>
</tbody>
</table>

Actual freight charge on all the railroads in Ohio in 1888 was, in round figures, 300. Had this traffic been subject to a charge of 1869, the sum would have been $1,600,000. The difference between the two sums is, in currency, $34,600,000; $89,400,000. Since two thirds of this is local, the saving in the cost of the transportation of the commodities used by the Ohio themselves, on their local traffic is $60,000,000 in gold in a single year. Banking of a single year would suffice to construct 2,000 additional miles of railway in that State at a cost of $30,000 a mile; i. e., to increase the mileage of the State 30 per cent. It is therefore apparent that the indirect profit of railway service is so great as to compel the rapid extension of the work, even if the new lines may yield no immediate income to their owners.

In the introduction to the "Railway Manual" of 1870-71, Mr. Henry V. Poor made this statement: "Over ordinary highways, wheat and Indian corn, the most valuable of
RAILWAY SERVICE OF THE UNITED STATES.

our cereals, will bear transportation only 250
and 150 miles, respectively, to markets where
the value of the former equals $1.00 and the
latter 75 cents a bushel. Beyond such limits,
and with no other modes of conveyance, the
more important products of the farmer have
no commercial value. To-day wheat can
be carried 5,000 miles by rail and sea and sold
at $1 a bushel, and corn can be carried 1,500
miles by rail and sold at 50 cents a bushel, and
yet leave a profit to the farmer whose indus-
try is mainly devoted to these crops.

Reverting again to the census of 1880, the
absolute necessity for adequate railway service
may be implied from the ratio that the value of
railway property then bore to the capital
specifically represented by farms and manufac-
tories. In respect to these figures it must be
premised that the valuation of farms is proba-
ably underestimated, that the capital in rail-
ways included the "water" that is now being
squeezed out, and that the capital in manufac-
tories was probably overestimated. In con-
sidering the relation or proportion that these
great branches of industry bear to each other,
we may therefore assume: 1. That the pro-
portion of the national capital in improved
lands and farm-buildings, i.e., in the instru-
mentality of primary production, is herein
stated too low. 2. That the capital in manufac-
turing, i.e., in the instrumentality of conver-
sion of crude materials into finished goods, and
the capital in railways, i.e., in the chief instru-
mentality for distribution, are herein stated
too high, but that the figures of the census
fairly represent their relation or proportion to
each other. Omitting fractions, the respective
capitals in these three great departments of
industry were in 1880 as follow, as given in
the census:

| Farm-lands and farm-buildings | $10,300,000,000,000 |
| Railway | $2,000,000,000 |
| Manufacturing (under 283 heads) | $8,000,000,000 |

Graphically represented, the relative pro-
portion of these capitals is as follows:

| Farms | Railways | Manufacturing |

It will be observed that the valuation of the
farms includes the land. If we separate farm-
buildings, machinery, tools, and appliances from
land—that is to say, separate all the actual capi-
tal upon the farm from the land—and add this
sum to the capital in manufactures, the total
productive capital in both agriculture and
manufactures was about the same as, perhaps
a little more than, the single capital in railways.
This brings into the clearest light the relative
importance of distribution. In this country
there is always enough for all; but where is
it? Our productive capacity is unlimited, and
the maintenance of the railroad has solved a part of this problem; but
there are more complex questions yet to be
solved. It costs a third of the price of the
farmer's loaf to get a loaf of bread away from
the oven, after it is baked to the mouth of the
consumer; but this is a side issue, affecting
the cost of distribution in detail, which can
not be taken up in this connection, as it
has no part to play in a treatise on railways;
but we may well consider.

Food, fuel, and materials for shelter,1 con-
tinue 80 to 85 per cent. of the merchandise
moved over the railways of the country; then
clothing, metals and metal-work, and manufac-
neous articles, 15 to 20 per cent. The
which the production and distribution of are pro-
duced by the construction of railways, and in which
they contain them in their use, must be shown by dia-
grams of a sectional order, because the great
sections of this country represent very
different conditions of soil and climate, and
also different conditions affecting the pro-
duction and use of grain, fiber, fuel, metal, and
fiber. In the following table the proportional
movement of passengers and merchandise is
shown by sections, divisions being made ac-
cording to the nature of the traffic:

| SECTION | Miles of rail-
road | Passengers carried | Passengers per mile |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. N. E. States</td>
<td>6,920</td>
<td>79,277,540</td>
<td>11,246</td>
</tr>
<tr>
<td>2. Middle States</td>
<td>7,131</td>
<td>120,364,047</td>
<td>1,234</td>
</tr>
<tr>
<td>3. Western States</td>
<td>80,535</td>
<td>99,026,126</td>
<td>1,234</td>
</tr>
<tr>
<td>4. Southern States</td>
<td>94,185</td>
<td>17,650,079</td>
<td>46</td>
</tr>
</tbody>
</table>

The possibility of moving merchandise long or short dis-
tances by rail at low rates of traffic can only exist upon
lines that carry large quanti-
ties; and the quantity to be carried is a mat-
ter of section, soil, climate, and other
natural conditions, over which Congress can exert
influence. For instance, the grain-crop of an
average year weighs 75,000,000 tons, but the
cotton-crop and the wool-clip combined weighs
less than 2,000,000 tons. The products of the
forest weigh 25,000,000 tons. The product of
metal of all our mines of iron, copper, and
lead and zinc, weighs less than 6,000,000 tons.
The annual output of coal, most of which is
moved to some extent by the railway, is be-
tween 90,000,000 and 100,000,000 tons. Meat
we have no present means of comparing, but
by comparisons of the quantities consumed
with those of grain and other kinds of food,
and salted meats can not be less than 1,000 tons, and are probably moved by duplication in the way of freight. It therefore follows that very few defects for carrying freight by the only possible on the lines that coal, timber, or provisions in bulk. Intend to say that this is the sole question of low rates, but it is a factor. In order that the work of may be done at the lowest possible must be enough work to keep the yeild up to the full measure of its hether it be the force of men, loco- cars.

given, in the following table, both tons moved by railroad in each also the tons per mile moved in—that is to say, the actual tons distance, long or short, i.e., the of merchandise carried any dis also what is called the ton-mileage, the traffic that would represent if were moved exactly one mile:

<table>
<thead>
<tr>
<th>Miles of railroad</th>
<th>Tons carried</th>
<th>Tons per mile</th>
<th>Tons carried one mile—portion to each mile.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5,000</td>
<td>4,000</td>
<td>2,000</td>
</tr>
<tr>
<td>2</td>
<td>10,000</td>
<td>8,000</td>
<td>4,000</td>
</tr>
<tr>
<td>3</td>
<td>15,000</td>
<td>12,000</td>
<td>6,000</td>
</tr>
<tr>
<td>4</td>
<td>20,000</td>
<td>16,000</td>
<td>8,000</td>
</tr>
<tr>
<td>5</td>
<td>25,000</td>
<td>20,000</td>
<td>10,000</td>
</tr>
</tbody>
</table>

he has been made to the paramount of articles of food in the traffic of ys. Grain, meats, dairy products, articles of food, constitute not less the quantity of merchandise that is the various lines; but, as a matter, the railway lines of the Middle s by far the larger part of this traffic. ion put upon the products of agricu the census year by Mr. J. R. Dodge, statistician of the Department of Agriculture, was as follows, for the crop of 1879:

Meats, dairy products, and eggs, valued at the farm. $1,299,000,000
Grain, valued at the farm. 1,984,580,000
Hay, valued at the farm. 468,346,718
Vegetables, valued at the farm. 190,966,569
Sugar, sirup, and honey, valued at the farm. 60,000,114

Total food. $5,215,989,719

Flour, cotton, wool, hemp, etc. 944,489,584
Tobacco. 86,726,215
Flax and other seeds. 22,473,483
Wines and brandy. 12,884,877

Total. $6,584,383,498

There are some duplications in this estimate, as of hay and grain, which are in part converted into meat; but these are farm values. Transportation by rail to points of final distribution or export added not less than $200,000,000 to this sum, and before the food reached the consumers a very large addition must be made for the final cost of distribution. An approximate estimate of the ultimate value of the food consumed by man within the limits of the United States may be made from the ascertained facts in respect to the cost of the food of a given number of persons. The following table may serve for this purpose.

The respective quantities of food served to the eighty adult women working in factories in Maryland, and of seventeen mechanics and eight women in Massachusetts, are first given, and it may be assumed that the average of the two tables represented in the third column would be no more than a fair daily ration for all adults. Such an average would represent a cost of 23-55 cents per day, or $1.67 per week. In the following table the two rations are given, and the average per day. The weekly and yearly average per person and the sum and proportions of the average if served to a population of 57,000,000 are computed as equivalent to 10,000,000 adult consumers, as our population is now or soon will be:

<table>
<thead>
<tr>
<th>Per day, Maryland.</th>
<th>Per day, Massachusetts.</th>
<th>Average</th>
<th>At average week.</th>
<th>At average year.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-50</td>
<td>5-90</td>
<td>3-70</td>
<td>2-00</td>
<td>1-60</td>
</tr>
<tr>
<td>7-84</td>
<td>6-90</td>
<td>5-00</td>
<td>3-00</td>
<td>2-40</td>
</tr>
<tr>
<td>8-50</td>
<td>7-10</td>
<td>5-50</td>
<td>4-00</td>
<td>3-20</td>
</tr>
<tr>
<td>9-50</td>
<td>8-15</td>
<td>6-50</td>
<td>5-50</td>
<td>4-20</td>
</tr>
<tr>
<td>10-50</td>
<td>9-15</td>
<td>7-50</td>
<td>6-50</td>
<td>5-20</td>
</tr>
<tr>
<td>11-50</td>
<td>10-15</td>
<td>8-50</td>
<td>7-50</td>
<td>6-20</td>
</tr>
<tr>
<td>12-50</td>
<td>11-15</td>
<td>9-50</td>
<td>8-50</td>
<td>7-20</td>
</tr>
<tr>
<td>13-50</td>
<td>12-15</td>
<td>10-50</td>
<td>9-50</td>
<td>8-20</td>
</tr>
<tr>
<td>14-50</td>
<td>13-15</td>
<td>11-50</td>
<td>10-50</td>
<td>9-20</td>
</tr>
<tr>
<td>15-50</td>
<td>14-15</td>
<td>12-50</td>
<td>11-50</td>
<td>10-20</td>
</tr>
</tbody>
</table>

| 12-70              | 13-85                   | 11-50   | 10-50           | 9-20            |
| 13-70              | 14-85                   | 12-50   | 11-50           | 10-20           |
| 14-70              | 15-85                   | 13-50   | 12-50           | 11-20           |
| 15-70              | 16-85                   | 14-50   | 13-50           | 12-20           |
| 16-70              | 17-85                   | 15-50   | 14-50           | 13-20           |
| 17-70              | 18-85                   | 16-50   | 15-50           | 14-20           |
| 18-70              | 19-85                   | 17-50   | 16-50           | 15-20           |
| 19-70              | 20-85                   | 18-50   | 17-50           | 16-20           |

tion is above the average, both in and variety, especially in respect to a poor white population of the it will be observed that this supply presents purchases made in consistencies, and substantially at wholesale can be readily proved that the less articles which are purchased at retail do bring the total cost of food up to $5,000,000,000, to which must be drink not less than $400,000,000.

Upon this basis the proportionate expenditures of the people of this country for food and clothing, and also for the shelter of the increase of population, may be approximately deduced, and will be found in the following table:

1. Food on the basis of the ration served to factory operatives in Maryland and New England. Drink as recently computed by David A. Wells:

Food. $4,849,000,000
Drink. 474,000,000

Total. $5,323,000,000
8. Clothing ready for use—carpets, blankets, lace, and all other articles made from vegetable or animal fibers, on the basis of a computation from the census returns, the figures of the imports, and an estimate of the cost of converting clothing, etc.

Clothing

\$1,470,000,000

8. Shelter for the increase of population, now approximating 3,000,000 per year, on the basis of one dwelling or part of a dwelling to each five persons, at an average cost of $500, or $100 per capita:

Shelter

\$800,000,000

The relative importance of food, as compared with other important articles of production, may be realized most fully by contrasting the value of dairy products and eggs at the ratio of the consumption of the factory operatives, whose ration has been given in the previous table, with other commodities which assume a more conspicuous place in public estimation.

At the standard of the average consumption of adult men and women who are engaged in factory-work in Massachusetts and Maryland, the average sum expended for dairy products, carefully purchased in considerable quantities, for milk, butter, cheese, and eggs is five and six tenths cents per day (5.6c), for which sum expended each one is supplied with about half a pint of milk, one and a half to two ounces of butter, one half an egg per day, and a scrap of cheese. These proportions vary slightly, but are substantially consistent with the facts. The present population of the United States is about 57,000,000, and if we reckon two children under ten as one adult, their consuming power is that of 50,000,000 adults. At the ratio of five and six tenths cents' worth to each adult, the annual cost of milk, butter, cheese, and eggs is $1,019,000,000. The annual value of eggs was computed separately for 1873 for the census at $60,000,000. On this basis, the value of eggs is now $92,500,000, and we are also importing largely even from Denmark and Holland:

Dairy and eggs in 1854, as above...

\$1,019,000,000

Domestic eggs separately, in 1854...

\$5,000,000

Pig-trough in 1854, not over 4,000,000 tons, at not over 20c to consumers...

90,000,000

Wood in 1864, domestic production, estimated...

$80,000,000

Silver product, valued in gold...

40,000,000

But, in order that the importance of the railway as a prime factor in the mechanism of distribution may be fully comprehended, consideration must be given to the occupations of the people that are to be subsisted. These occupations must, again, be considered with respect to the place in which they are or must be carried on. This classification may be made with very great accuracy from the census of 1880, because the occupations of the people were stated by themselves to the same enumerators that counted the number.

In the census year there were 17,992,099 persons employed in gainful work. Each one of these persons sustained a little less than two others. The value of their product may be fairly estimated at $600 for each person occupied, or at a little less than $300 for each man, woman, and child. In the distribution of this product must be found the source of profits, taxes, and wages. In the following classification, the specific numbers in each separate occupation are sometimes given exactly, sometimes by computing those whose occupations are analogous:

<table>
<thead>
<tr>
<th>Class</th>
<th>Number in 1000</th>
<th>Estimated total value in 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clergymen, lawyers, physicians and surgeons, teachers and literary, periodicals, editors, musicians, teachers of commerce, banks, railroads, insurance, others</td>
<td>668,000</td>
<td></td>
</tr>
<tr>
<td>Merchants and tradesmen, hotel-keepers, clerks, salesmen, commercial travelers, brokers, and all others engaged in the purchase and sale of goods</td>
<td>921,490</td>
<td></td>
</tr>
<tr>
<td>Multi-commodity factory-work: Tires, printing, and bleaching, 500,000; metal and machinery, 800,000; clothing, 450,000; boots, shoes, and hats, 210,000; all others 20,000</td>
<td>1,740,000</td>
<td></td>
</tr>
<tr>
<td>Hand and mechanical tools</td>
<td>1,061,000</td>
<td></td>
</tr>
<tr>
<td>Agricultural, not collected</td>
<td>3,279,000</td>
<td></td>
</tr>
<tr>
<td>Service: Express, railroad, and telegraph employes and laborers, 800,000; domestic servants, 1,000,000; laundry, 120,000; waiters, 200,000; dressmakers, bakers, etc., 100,000; all others 200,000</td>
<td>4,250,000</td>
<td></td>
</tr>
</tbody>
</table>

It will be apparent that all the members of Class I that are occupied in mental or manual work must perform some several functions within the limits of, but must be scattered over all parts of, the United States. The same rule applies to Class II, merchants, traders, and other distributers; to Class IV, persons engaged in mechanical work that is individual rather than collective; to Class V, employes of transportation companies, domestic servants, and the like; and to the whole of Class VII, laborers, except a small portion of those engaged in mining. The product of perhaps one third of those that are engaged in Class III, collective factory-work, and of perhaps 21 per cent. of the farmers and farm-laborers, being the proportion occupied on sugar, hemp, barley, and flax; and, lastly, of 10 per cent. of the miners, might, perhaps, be imported from foreign countries as a matter of choice. The rest of these occupations must
RAILWAY SERVICE OF THE UNITED STATES.

The necessity in the country, and even in important sections of the country, according to soil, climate, and condition, the supply of meat and bread can be obtained at a cost of 15 cents per thousand miles by railroad at the cost of 7,392,099 persons engaged in all kinds of agricultural occupation in the census year, there were 23,000,000 thus employed, of whom 1,000,000 a-choice that is, in the place of the in other words, it is work that might be in this or in some other country, as be most advantageous. On the other out of the products of agriculture, valued farms by Mr. Dodge at $3,736,531,402, which must be added, for transportation to whole of wholesale distribution or export, of $200,000,000, making a total of $3,531,422, the proportion exported was $2,561,421, or 174 per cent. of the... If we apply this percentage to the of farmers and farm-laborers, we find the census year, there were 1,550,000 best market was outside the United States. More than two thirds of this was food sold not have been sold for export but a service of the railroad in moving it seaboat at constantly decreasing rates. the quantity of provisions, repres... thirteen tons, were worth in gold the per cent opposite the respective from 1869 to 1883 inclusive, during period (1884 not yet given) the average on all merchandise moved over the the New York market of 20 bar... in gold and the Middle States, 30,000 miles, at the rates charged by New York Central and Hudson Railroad, 1869 to 1883 inclusive:

<table>
<thead>
<tr>
<th>Cost in gold</th>
<th>Decrease in the charge per ton per mile.</th>
<th>Dollars, thousand tons, 1,000 miles.</th>
<th>Per cent. of freight charge to value in New York.</th>
</tr>
</thead>
<tbody>
<tr>
<td>848.68</td>
<td>1.78</td>
<td>231.60</td>
<td>86.61</td>
</tr>
<tr>
<td>785.93</td>
<td>1.00</td>
<td>218.30</td>
<td>74.61</td>
</tr>
<tr>
<td>753.92</td>
<td>1.41</td>
<td>198.40</td>
<td>71.21</td>
</tr>
<tr>
<td>629.50</td>
<td>1.35</td>
<td>190.40</td>
<td>68.98</td>
</tr>
<tr>
<td>868.40</td>
<td>1.11</td>
<td>201.60</td>
<td>82.60</td>
</tr>
<tr>
<td>651.74</td>
<td>.94</td>
<td>217.20</td>
<td>76.90</td>
</tr>
<tr>
<td>721.95</td>
<td>.97</td>
<td>205.10</td>
<td>70.90</td>
</tr>
<tr>
<td>948.99</td>
<td>.93</td>
<td>192.90</td>
<td>66.90</td>
</tr>
<tr>
<td>848.84</td>
<td>.79</td>
<td>189.70</td>
<td>64.61</td>
</tr>
<tr>
<td>686.82</td>
<td>.75</td>
<td>187.10</td>
<td>62.90</td>
</tr>
<tr>
<td>774.95</td>
<td>.75</td>
<td>184.50</td>
<td>61.50</td>
</tr>
<tr>
<td>952.64</td>
<td>.75</td>
<td>181.10</td>
<td>59.61</td>
</tr>
<tr>
<td>891.75</td>
<td>.75</td>
<td>177.90</td>
<td>57.61</td>
</tr>
</tbody>
</table>

The rates for 1884 are not yet given, but are estimated at less than 1888, and perhaps as low as 1893. Although the average rates on all merchandise are higher than the specific rates upon grain and provisions, yet these are the rates on the line that is worked at the lowest rates; and those average rates, without question, accord with the changes made on other lines over which provisions are moved to Chicago, Cincinnati, and other Western centers. They indicate, in the surest way, the vast benefit that the farmers have gained from the constant improvement of the railroad service by consolidation and by the reduction of the charges to the lowest point consistent with any effective service; which point was reached on the main through lines in 1879-80, so far as Western traffic is concerned.

Having thus considered the details of the occupations of the people of this country, we may now turn to the census classification, which is of a broader and more general kind, and, by applying this classification to sections, we may deduce some valuable inferences with respect to the future of the railway service.

The census classification of the employment of all persons engaged in every kind of gainful occupation was as follows:

<table>
<thead>
<tr>
<th>Industry</th>
<th>Per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>7.076,476</td>
</tr>
<tr>
<td>Professional and personal service</td>
<td>4,076,289</td>
</tr>
<tr>
<td>Trade and transportation</td>
<td>1,858,236</td>
</tr>
<tr>
<td>Manufacturing—mechanical arts and mining</td>
<td>86,212</td>
</tr>
<tr>
<td>Total</td>
<td>12,895,099</td>
</tr>
</tbody>
</table>

Classifying by sections, we get the following results:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Per cent.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole country</td>
<td>441</td>
</tr>
<tr>
<td>Southern States</td>
<td>442</td>
</tr>
<tr>
<td>N. England States</td>
<td>443</td>
</tr>
<tr>
<td>Middle States</td>
<td>444</td>
</tr>
<tr>
<td>Western States and Territories</td>
<td>445</td>
</tr>
</tbody>
</table>

Referring to the previous table, in which the freight and passenger traffic are calculated on the same plan, we observe that the greatest number of passengers is moved in New England, where the manufacturing and mechanical arts have been developed in the greatest measure. The greatest number of tons of freight are moved on the railroads of the Middle States, through which such traffic is carried to the East or for export, and from which it is distributed; while the least quantity of merchandise is moved on the Southern roads in the States in which cotton, hemp, and tobacco are the chief products of agriculture; these products being of high value but of light weight, and in States where the diversified occupa-
tions that are born only of liberty are now being rapidly established. While the traffic is small, as it is in the South and in the far West, the rates of charge must be relatively high, or else the railways will not be built, or, if built, may cease to be operated. The present contests for the regulation of railway traffic by national statutes covering or entering into the minute details of the work, presents another of the many examples of futile attempts to alter the nature of things. It seems to be another effort to overcome what are considered hardships, which can only be remedied by the slow progress of events, and not by the enactment of what may be called meddlesome statutes. Low rates of traffic can not be enforced unless the volume of business is large enough to sustain the roads at such low rates.

Thus far, attention has been directed to what has been accomplished. We have spent not less than $6,000,000,000 in the construction and equipment of 125,000 miles of railway; but such figures only confuse the mind—they must be reduced to units in order to be comprehended. In another part of this article, each mile of railway is estimated as representing the continuance of work of 560 men for one year, but this is the representation of only a mile of single track at a computed cost of less than $25,000. A large proportion of our lines are double-tracked and heavily equipped, and cost the labor of a much greater number of men in the past than they would now. If they have cost only $5,000,000,000, which would be a little over 60 per cent. of the outstandings securities, they represent the labor of 10,000,000 men for one year, or of 500,000 men working continuously from the end of the civil war to nearly the present time. In this view of the matter, the work accomplished has cost us but little, if we compare it with what has been wasted in Europe in war or in preparation for war. Had not the South been subdued by the principle of liberty upon which this nation was founded by the common ancestors of the people, the Potomac might have become the Rhine upon whose borders two hostile camps would have been arrayed, waiting and watching while consuming the substance of both sections, keeping them poor and wretched like the peasantry of France, Germany, Italy, and Austria, whose standing armies in proportion to their population are about the same as an army of 500,000 men would have been for the people of this country had the two sections been separated from each other. In place of this burden, our peaceful army of 500,000 stalwart men have leveled the mountains, filled up the valleys, opened the mines, and laid down the iron bands over which the abundance that comes from peace, order, and industry is carried to the remotest point of our country, rendering each and all interdependent under the beneficent law of mutual interest and of mutual service, which forever forbids war and makes armies useless, except as a border police. Not only do we feed and clothe ourselves with all the necessaries of life, but with the excess of grain that we can not consume, and the excess of cotton that we can not spin and wear, we buy all our tea, coffee, sugar, spices, and fruits such measure that what are the honors of many lands are but the common comforts of our own. Yet what we have accomplished is but a tithe of what remains to be done. The following table shows the relative portions of our soil that are now occupied by grain and cotton crops, or that would suffice for the production of meat, dairy products, and wool if methods were adopted in their production which the success is already absolutely certain. As we stand at the parting of the ways, the adjustment of the prices of the necessaries of life upon a lower plane has been made, and when constructive enterprise is about to be resumed under such conditions that the working people of this land will be better off than ever before, perhaps we may summon or whole population to judgment. They say number, or soon will number, 58,000,000, or that they could all stand at ease on the ten square miles of waste land that are within the limits of the city of Boston.

The area of the United States, omitting Alaska, is substantially 8,000,000 square miles. In the following table will be found a comparison of the areas actually under cultivation in grain and cotton (given in round figures, disregarding fractions), and the areas that would suffice for meat, dairy products, and wool, if special modes of agriculture now in use should become general:

<table>
<thead>
<tr>
<th></th>
<th>Square Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total area</td>
<td>8,000,000</td>
</tr>
<tr>
<td>Indian corn</td>
<td>111,000</td>
</tr>
<tr>
<td>Dairy and eggs</td>
<td>80,000</td>
</tr>
<tr>
<td>Wheat</td>
<td>80,000</td>
</tr>
<tr>
<td>Mutton and wool</td>
<td>40,000</td>
</tr>
<tr>
<td>Beef</td>
<td>40,000</td>
</tr>
<tr>
<td>Cotton</td>
<td>20,000</td>
</tr>
<tr>
<td>Total assigned</td>
<td>292,000</td>
</tr>
</tbody>
</table>

Corn, wheat, and cotton, actual, on our present wasteful modes of agriculture. Dairy products, beef, mutton, and wool, possible, but not probable, for many years.

The area assigned to beef, and to mutton and wool, is potential rather than probable.
for a century, or until the pressure
of dense population has rendered economy
and profitable. At present, the only use
we can make of a large section of our
country is to devote it to grazing, without ret-
ducing it.

Conclusion, we may ask, What will be an
rate mileage of the railways of the United
States in the first decade of the next century,
when our population has reached about 100,000,000, and when 500,
square miles of our area of 5,000,000 may
be more space for each square mile than the present average, or than the modi-

cases that have been adopted in the
construction of the last table?

Charles Reade, an English novelist, born at
London, Oxfordshire, June 8, 1814; died in
London, April 11, 1884. He was descended
from an ancient family, the seventh and young-
ner of a country squire, John Reade, of Ip-

R. He was educated at
Trinity College, Oxford, taking a bachelor’s degree with a third
class in classics in 1835, and was

lected to a Vinerian scholarship

1837. The university conferred upon
him subsequently the degree of
D.C.L. He was called to the bar
Lincoln's Inn in 1843, but devoted his
attention to literature, writing
sensively but anonymously for
fictional and magazine. In
1837, was published under his own
name the novel of "Peg Woffing-
t", which at once made his repu-
tion. About this time he wrote

pective. These works
served as a foundation for the
plotted and disposed of inci-
dents by a dramatic quality such as
characterizes the works of French
authors who, like Charles Reade,
shine the arts of the playwright
and the novelist. He began writing
tales and plays about the same
time. "Gold," a five-act drama,
produced in 1850; in 1854,

Charles Reade.

chased the productions of other writers to work
over. These practices subjected him to fre-
quent charges of plagiarism, and involved him
in many angry controversies. In this way he
was enabled to describe with scientific cor-
rectness the circumstances of all phases of life,
and to introduce effectively many realistic in-
cidents and details; but his characters are too
typical and poetically true to nature to be realistic, while the occurrences from actual life that he sometimes worked into the mechanism of his stories seem unnatural. The third part of the novel is never too late to mend is taken up with a graphic depiction of the cruelties and horrors of prison discipline. The novel went through many editions on both sides of the Atlantic, though critics assailed him not only for his breach of the canons of art, but for presenting an overcharged picture of this evil. In 1859 he published a statement of "Proofs drawn from prison revelations." In "Hard Cash" he directed an attack against private lunatic asylums; and in "Put Yourself in His Place" (1870) he held up to execration the violent practices of the early trade-unions in Sheffield. "A Woman - Hater," published in 1887, dealt with the woman - suffrage movement. His only historical novel, "The Cloister and the Hearth" (1881), is one of his masterpieces, as is also "Love me Little, Love me Long" (1859). Another of his most powerful novels is "Griffith Gaunt" (1866), "The Wandering Heir" (1872), "A Terrible Temptation" (1871), "White Lie" (1857), and "The Course of True Love" (1857), all achieving success, although some of them were sharply criticised. In 1888 he published a short, graphic narrative entitled the "Autobiography of a Thief." Cuthbert Bede was easily provoked into a controversy, and did not hesitate to defend with his pen the artistic value of his work. A collection of controversial writings was published in 1888 as "Readiana." He was a man of strong impulses and firm convictions, which he asserted in a determined manner. He was a resolute champion of the rights of authors. In 1863 he won a suit against a London manager named Conquest who had put upon the stage a version of "It's Never Too Late To Mend," which he afterward dramatized himself. He also took a vigorous stand against violations of literary property by American publishers. His novel of "Foul Play" attacks the abuses that are said and Chamberlain have sought to remedy by legislation. It was dramatized as "A Scuttled Ship," a successful play in which he had the co-operation of Dion Boucicault. A drama founded on Tennyson's poem of "Dora" was brought out in 1867. His last dramatic adaptation was "Drink," founded on Zola's novel "L'Assommoir." One of his latest stories, "A Simpleton" (1874), is a powerful work, though overloaded with realistic episodes. His last stories were "The Picture," published in 1888, and "A Porlions Secret," published just before his death. Among his minor stories are "Proprua que Maribus" and "The Box Tunnel" (1887), "Jack of All Trades" (1858), "A Good Fight, and Other Tales" (1859), "The Eighth Commandment" (1869), "A Hero and a Martyr" (1875), "Mutilum in Parvo," "The Jilt," "Good Stories," and "The Coming Man." Mr. Reade never married, but for many years Mrs. Seymour, the actress, lived in his house and sat at the head of his table until her death, a few years before his own. He had held, and had married, he would have been obliged to relinquish his fellowship at Oxford, which gave him an income of a thousand dollars each year, per annum.

REFORMED CHURCHES. L Reformed Church in America.—The following is a summary of the statistics of the Reformed Church in America as they are given in the "Acts and Proceedings of the General Synod for 1864.

Number of classes, 88; of churches, 189; of ministers, 549; of communicants, 6,183; total number of additions during the year of confession, 4,888; of baptisms, 1,084 of infants and 4,397 of infants; number of baptized non communicants, 80,456. Amount of contributions for benevolent purposes, $220,383; for congregational purposes, $958,190. Fees hundred and sixteen Sunday-schools were reported to the General Synod, with 90,908 members.

The Board of Direction reported to the General Synod that the amount of assets and cash in the hands of the treasurer on account of the educational enterprises and benevolent funds of the church was $717,160.

The amount of the widows' fund, which was included in the above statement, was $23,388. The gifts from churches and individuals during the year had been $2,122, and the annual receipts from ministers $1,285. Amounts had been paid from the income the aggregate sum of $3,769. The amount of the disabled miners' fund invested was $55,267; from its income had been paid during the year $1,126. The education fund (endowed scholarships, etc.) amounted to $118,110; the parochial school fund, to $11,137; and the permanent sanitary fund, to $188,507.

The receipts of the Board of Publication for the year had been $22,141. The assets of the Publication-House were returned at $14,976, with no liabilities. Including regular annual documents, 12 publications had been issued. The receipts of the Board of Education had been $18,235. The board returned 44 students on its roll of beneficiaries.

The receipts of the Board of Domestic Missions had been $44,795, besides which the treasurer returned $20,038 as received on account of the church - building fund. The board had aided 90 missions and churches, of which 55, served by 51 missionaries, were in the East, and 40, with 85 missionaries, were in the West and South. Connected with these churches were 6,380 members, 685 of whom had been received on confession; 4,658 families; and 97 Sunday-schools, with an average attendance of 6,747 scholars. Seven new churches had been organized, and six churches had become self - sustaining. The mission churches had contributed $889 to domestic missions, and $3,970 to other objects.

The Board of Foreign Missions had received $98,727, of which $12,183 had been contributed
The Woman's Board. The mission in China, India (classis of Arra), returned in all, 11 stations, 20 missionaries, 24 assistant native ministers; 159 catechists, assistant catechists, readers, schoolmistresses, and Bible churches, with 2,953 communities, with 399 scholars; 89 day scholars; and 20 theological contributions of the native to $5,379.

The General Synod of the church in America met at Grand Haven, June 4. The Rev. David Cole resident. The Committee on view of the request of six classes, he submission to the classes of of members intended to give significance to the expression, of the Christian religion," as usual forms. In answer to request that they be allowed to exceed for licensure, where it had important for them to attend the Reformed Church, upon certain seminaries as those of the committee reported that the General Synod right to grant such request, contrary to the constitution of dispensations in particular by special vote of the Synod. The Synod of the Holland med Church in America was rand Rapids at the same time, the Synod, and an exchange of actions was made between the wishes was also expressed in the, as they had the same faith, same fundamental principles, eventually become one. Arrangements for the publication of a codification of the Reformed and the same during the next years, which has been procured by E. T. Corwin, D.D.,

Reformed Church in the United States. The total summary of the statistics presented to the General Synod in May, 1883: 52 of ministers, 788; of members, 169,530; of members, 108,118; of infant baptisms, 8,089; of communicants, 198,897; 31,878; of Sunday-schools; of students for the minister of contributions: benevolent, educational, $2,138,018.

Foreign Missions reported to the Board that its receipts for three years, $20,041, and its expenditures as the balance of $3,280 on the this board had on hand legates of $1,700, bearing interest. 

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The Board of Home Missions had raised and expended in support of the missions under its charge, during three years, $77,889. The present number of the missions was 145. The board had not been able, for want of funds, to appoint a missionary for immigrants at the port of New York.

General Synod. The General Synod of the Reformed Church in the United States met in Baltimore, May 7. The Rev. Dr. B. Bausman was chosen president. The most important action of the Synod was that taken upon the report of the commission which had been appointed at the previous meeting of the body, in 1881, to prepare a Liturgy and Directory of Worship. The commission was appointed in connection with the completion of the "Peace Measures," which were enacted at the same time for reconciling the two divergent schools of thought within the Church, and putting them upon a common basis of action; and the resolution appointing it called for "the preparation of a Liturgy and Directory of Worship suitable to the demands of the case and to the wants of the Church." The report of the commission was adopted, and the directory it had prepared was approved, by a unanimous vote. The directory will still have to be submitted to the classes for their action, after which it will come before the General Synod again for adoption. The third Sunday of January in each year was fixed upon as the day to be observed in all the churches as a "reformation festival." This was selected as the most suitable time, because it comes near the 19th of the month—the day on which, in 1555, the Heidelberg Catechism was first published. The text of the tercentenary edition was designated as the standard to which the phraseology and punctuation in the German Liturgy and other books containing the Creed, the Lord's Prayer, and the Ten Commandments, should be edited to conform. The Rev. J. H. Dubbe, who had been appointed by the General Synod in 1881 to "prepare a manual of the origin, history, doctrines, government, and customs of the Reformed Church in the United States," reported progress, and was requested to complete it.

III. Reformed Churches in Germany. A meeting was held in Marburg, Germany, in August, to form a confederation of the various Reformed Churches of the German Empire. These churches, having in all a million and a half of adherents gathered in some eight hundred congregations, were divided in organization by the old state lines, and had no bond of union except the Heidelberg Catechism. An organization was effected, the basis and object of which are defined in the first two articles of the constitution adopted, as follow:

1. This Bund grounds itself on the Word of God, of the Old and New Testament, and acknowledges the confessions of the Reformed Church of Germany, especially the Heidelberg Catechism, as right and pure declarations of its teachings. 2. This Bund aims at the preserva-
REFORM IN THE CIVIL SERVICE.

The competitive system was applied to the East India civil service in 1856, under a plan drawn up by a committee of which Lord Currie was chairman. The competitive system now applies to almost the entire civil service of Great Britain. The chief exceptions are the Foreign Office and the diplomatic service.

A civil-service act similar to that of the United States was passed in Canada in 1866, and during 1886, 1,086 candidates for the public service were examined under it. The system is declared to have had a beneficial effect.

In the United States—the first provision requiring some evidence of qualification for civil servants of the United States is found in the act of Congress of 1833, which provided that no person should be appointed to any of the four grades of clerkships in the departments in Washington until he had been examined and found qualified by a board of examiners, none of whom should be the head of the office in which he was to be appointed. The examination provided for was only a pass-examination. This too often became a mere form, and sometimes consisted of asking the candidate what his name was, or what he had had for breakfast! Frequently, even the presence of an examination was lacking, the formal certificate of qualification being signed without the candidate's even being seen by any other member of the board than the head of the office. The pass-examinations in the Treasury Department were, however, very thoroughly conducted under Secretary Boutwell, who entered office in 1869, and the experience gained in applying them was afterward of great value in establishing the competitive examinations under the civil-service regulations.

The first popular demand for a reform in the methods of appointment to the civil service was heard soon after the close of the civil war. The immense increase in the number of civil servants during the war period had been made under the system of congressional patronage, and the necessity of increasing efficiency and extravagance. The agitation of the question of reform bore fruit in the appointment by the two houses of Congress, in July, 1866, of a joint select committee on reformation, who were directed to inquire whether the public expenditures could be reduced by lopping off useless officers or cutting down excessive salaries, and to consider the expediency of providing for the selection of subordinate officers after due examination by proper boards; their continuance in office during specified terms...; and for withdrawing the public service from being used as an instrument of political and party patronage. This resolution, which covers the whole field of civil-service reform, was introduced by Thomas A. Jenckes, a representative from Rhode Island. As a member of the reformation committee Mr. Jenckes made two reports (in 1867 and in
Dec. 18, 1871, the commission submitted a report, accompanied by a set of rules for the improvement of the civil service. These rules provided that all vacancies in the lowest grade should be filled by the open competitive examination of applicants, conducted by a board of three examiners for each department; that all vacancies in upper grades should be filled by competition among those in the lower grades; that three persons should be certified for each vacancy; and that all original appointments should be made for a probationary period of six months. Further regulations, promulgated in April, 1872, prescribed the mode of selecting postmasters, the chief officers of the customs, consuls, and similar officers.

The new system was put in force in the departments in Washington in June, 1872, and in August of the same year it was extended to the custom-House and sub-Treasury in the city of New York. In the spring of 1873 Mr. Curtis resigned the chairmanship of the commission, and was succeeded by Dorman B. Eaton. An additional set of regulations was promulgated by President Grant in August. These regulations provided for the division of the country into five civil-service districts, in each of which examinations were to be held from time to time by a chief examiner, to be employed or designated by the President. Edward O. Graves was designated for this service, and a series of examinations under the new regulations was held in the various districts in the following winter. The chief examiner reported in January, 1874, that, in all, 194 examinations had been held for the departmental service, of which 82 were for admission to the service, and 123 for promotion; and that 3,817 candidates had been examined, and 710 vacancies filled, of which 293 were in the lowest grades and 428 in upper grades, ranging in importance from woman-clerks to the head of the various offices for which examinations had been held. The testimony was overwhelming in favor of the new system, especially as applied to original appointments. The heads of the executive departments agreed in saying that the new system had "given persons of superior capacity and character to the service of the Government, and had excluded unworthy applicants"; had "developed more energy in the discharge of duty," and had "diminished the solicitation and pressure for office," as well as "the intrigue and pressure for the removal of worthy persons." Notwithstanding this ample demonstration of the merits of the new system, Congress refused the modest appropriation that the President had asked for the work of the commission for the next fiscal year. The chief examiner ceased his functions June 80, 1874, and no district examinations were held after that
made it their duty to distribute documents interrogating candidates as to their views, and to discuss measures for the reform into effect. One of the most was the New York Association, which put up a bill for the reformation of the civil service. This was introduced in the Senate in 1880, and again on Dec. 6, 1881, George H. Pendleton, of Ohio, and known as the "Pendleton Bill." It was taken up at the next session and was defeated. The bill was recommitted on Civil Service and Retrenchment which it was committed, twice recorded its passage, but it remained pending in the Senate until the strength of the reform movement of the country made itself felt in elections of 1882. The long-neglected was taken up at the next session and passed through both houses by overwhelming majorities. An ineffectual attempt was made to pass Civil Service Committee of the House to plant it with the "Kasson Bill," providing for a fixed but limited tenure of office. This became a law by the President's approval of June 16, 1888. (For the full text of the bill, see "Annual Cyclopaedia" for 1888, page 642.) It provides for open competitive exams for admission to the public service in Western and in all custom-houses and post, where the official force is as many as six apportionment of the appointments in the various departments in Washington among the Territories. In proportion to their population, and for the appointment of a Civil Service Commission of three members, not two of whom shall be adherents of any political party, and other officers under these provisions into execution. It has bids assessments on public employees for local purposes by any one in the service in the United States, or in any public building, prohibits Congress from making mandates for offices to be filled under except in the character of residence. Dorman B. Eaton, of New York; J. Gregory, of Illinois; and Leroy D. Thompson, Ohio, were appointed members of the commission, and Charles Lyman, chief clerk of the Treasury, the United States Chief Examiner. A set of rules and regulations was approved by the President, an into force July 16, 1888, six months after passage of the act. (See "Annual Cyclopaedia" for 1888, page 688.) They apply to the places in those branches of the public service covered by the law, above the machine, watchmen, and messengers, on the one hand and below the officers confirmed by the other, with certain exceptions in rule 19.

The rules provide for admission to the public service in the departments in Washington and in the custom-houses and post-offices within the law, only through open competitive examinations on the elementary basis of an English education. The general nature for admission embraces orthog
REFORM IN THE CIVIL SERVICE.

Applying, fundamental rules of inspection, percentage, interest, division of book-keeping and accounts, English language, letter-writing, construction of sentences, and history, geography, and government. For places re degrees of education, a simpler prescription. Provision is made in technical subjects for such as law clerks, examiners in Pension Offices, type-writers, mechanical draughtsmen, copyists, proof readers, scientific engravers, Signal-Office, etc. Special all of these classes of places held, with satisfactory conditions have also been held for clerks in post-offices, and for inspectors, and assistant weighers.

For the years ending Jan. 16, 16, 1888, show that the new and successful operation, and permanent part of our administration. The whole number of persons the latter date was 9,889, number of appointments made was 2,022. Of 109 whose promotions in the departmental red, 107 had been reappointed the year ending Jan. 16, 1888, were examined for the department from whom 1,742 were men and 438 were appointed, of whom 47 women. For the cases of 119 appointed were men. For the 338 were examined, of whom 298 women, and 1,249. The examinations extend to the customs, of which, as originally 0 were in the departmental 2,573 in the customs 0 were appointed. Theiae extracts from reports made and the heads of customs operation and effect of the ports are almost unanimously

he rules were extended to the finneapolis, St. Paul, Jersey haven (the number of officials been increased to more than department of Agriculture, n, while recognizing that some promotions ought to be the earliest practicable moment, rk so exacting that it has not in its last report thus summary results:

1 and prescriptive tests, long in the departments and great of the people, be rejected, and that in their place tests of character and capacity, irrespective of political or religious opinions, may be substituted.

That with the growing approval of Congress itself, shown by increased appropriations for the commission, and with great relief and advantage in the departments and offices declared by those who preside over them, the old system of congressional influence and official favor for securing appointments may be arrested if not destroyed.

That a system of open, free, public examinations, under a non-partisan commission, may be successfully conducted for testing the character and capacity needed in the public service, without extending the examination, except for a small number of special places, beyond the subjects which are deemed so essential to success in private business, and for the discharge of the common duties of citizens, that they are required to be taught at the public expense in the common schools throughout the country.

President Arthur, in his last annual message, referring to the first annual report of the commission, said:

The results therein foretold have been more than realized. The system has fully answered the expectations of its friends in securing competent and faithful public servants and in protecting the appointing officers of the Government from the pressure of personal importance and from the abuse of the claims and pretensions of rival candidates for public employment. The law has had the unqualified support of the President and of the heads of the several departments, and the members of the commission have performed their duties with zeal and fidelity.

Two bills for the repeal of the civil-service act were introduced into the House during the last Congress, and referred to the Select Committee on Reform in the Civil Service. The committee unanimously reported against the bills, and heartily commended the Civil-Service Commission, declaring that they were "entirely satisfied" with its "thorough, conscientious, and non-partisan work."

In the State of New York—the act to regulate and improve the civil service of the State of New York, passed May 4, 1883 (see "Annual Cyclopedia" for 1883, p. 566), conforms very closely to the national law. It also authorizes the adoption of regulations for admission to the civil service of cities having a population of 50,000 or more. Only seven cities were subject to these provisions under the original act, and in these the mayor was given a very limited authority, the exercise of which was entirely optional. Similar authority was given to various heads of departments. The commission called attention to the obvious imperfection and incongruity of this system in its first report. Two acts were accordingly passed, on May 24 and 29, 1884, making the system mandatory in all the cities of the State, and vesting in the mayors sole authority to establish regulations for every department of municipal government, except the educational. The commission, the members of which are John Jay, Augustus Schoonmaker, and Henry A. Richmond, with Silas W. Burt as chief examiner, has made two reports, Jan. 28, 1884, and Jan. 28, 1885. The estimated number of persons subject to the civil-service regulations to
REFORM IN THE CIVIL SERVICE.

The decision of the courts that persons employed by the excise boards, the officers and employees of the various courts, and health officers, are officers of the State, brought under the civil-service regulations of the State a large and important class of public officers, who were at first supposed to be in the municipal or other local service, and added largely to the duties of the commission.

One effect of the rules has been to arrest all changes in the State civil service. From an eligible list of candidates examined on April 24, 1884, for the higher grades of clerkships, not a selection has yet been made. Though there has been during the same period an excellent special list for the prison service, no appointment has been made on the commission. Many examinations have been held during the year for professional places.

The duties and responsibilities of the commission were greatly increased by the provision of the amendatory acts requiring their approval of the municipal regulations. All of the cities in the State had complied with the law at the date of the last report except Hudson, Watertown, Oswego, Rome, Elmira, Schenectady, Newburg, and Lockport. The municipal regulations are in harmony with the State rules in all essential matters. As the police and fire departments have no equivalents in the State service, special regulations were prepared for them.

In the City of New York.—The Supervisory Board of Commissioners appointed to assist the Mayor of New York in carrying the civil-service law into effect, consists of Everett P. Wheeler, E. L. Godkin, and E. K. Robinson. In accordance with a request from the State Commission, a report was made to the mayor, Dec. 10, 1884. The earlier regulations of 1883 were replaced on Aug. 29, 1884, by the present regulations, sixty-six in number, under the mandatory provisions of the amended act. The city service is divided into seven schedules, as follow:

A. Deputies authorized to act for their principals, and other persons necessarily occupying a strictly confidential position.
B. Clerks, copyists, recorders, book-keepers, and others rendering clerical service.
C. Policemen of the Police and Park Departments, and the uniformed force of the Fire Department.
D. Persons whose duties require expert knowledge, not included in E.
E. Physicians, chemists, nurses, orderlies, and attendants in city hospitals and asylums.
F. Persons not included in the above, and not laborers.
G. Laborers.

There are three boards of examiners, each composed of two persons: one for positions in Schedules B and C, one for positions in Schedule D, and one for positions in Schedules E and F. There is also the Supervisory Board above mentioned, to aid the mayor in preparing civil-service regulations, to consider inquiries respecting the examinations, to control the examinations and the general administration of the system, and to decide all questions arising under the mayor's revision, all questions under the regulations. Appointments in Schedules A may be made without examination, but the appointing officer must have the secretary of the boards present at the examinations, and, within a period of one hundred and twenty days, give a notification giving full particulars concerning the appointee. Vacancies in Schedule B, C, D, E, and F, not filled by sale of selection from the list who have passed highest in open competitions, Applications for positions in Schedule B, D, E, and F, must be accompanied by affidavit of the applicant, showing that he is of eighteen years of age and a citizen of the United States, giving his residence, education, training, and experience, and saying whether he has ever been in the civil service of the city or in the military or naval service of the United States. It must also be accompanied by the certificate of not less than three or more than five respectable citizens of the city, as to his moral character, sobriety, industry, and fitness. Candidates for professional, technical, or expert positions must show the training and education they have undergone to qualify them for such situations. The general examination for places in Schedule B embraces handwriting, writing, reading, dictation, spelling, addition, subtraction, multiplication, and division of whole numbers and fractions, condensing a document, and information relating to the city of New York and its government. There are also seven optional subjects, including geography, typewriting, and bookkeeping. All examinations must relate to such matters as will fairly test relative capacity and fitness. No person is less than seventy-one or seventy-six can be placed on the eligible list. For vacancies in places in the above schedules, which it is desired to fill but which can not be filled by promotion, the highest three names on the appropriate eligible list are certified, one of which must be selected.

Applicants for places in Schedule D, in addition to furnishing evidence in regard to age, health, and character, must undergo an examination in reference to the special qualifications required by the office, expert or otherwise, required. Applicants for places as nurses, matrons, etc., are examined as to age, health, moral character, sobriety, personal habits, temper and temperament, and ability to read, write legibly, and work under pressure.

For the posts of physicians, surgeons, etc., the Supervisory Board may institute non-competitive examinations. All appointments except those in Schedule E are for a probation of six months, and are published in the "City Record," with the names of the persons that have certified the character of the appointee.
reform in the civil service.

The Advisory Board was asked by the Assembly to report "the re-established by them as conditions in the Police and Fire Department of New York city." From its report, it appears that all applications for places in the service of the departments have to be made upon forms prescribed by the respective departments, and that all applications are to be accompanied by testimonials as to the moral character, sobriety, and good behavior of the applicant. The applicant is required to submit himself to an examination in intelligence, dexterity, and the qualifications of the department. Applicants for positions as firemen are required to prove their fitness by a competitive examination in strength and capacity. Applicants for positions as boarders are required to pass an examination in the same manner as those for firemen.

Promotions are made from the ranks of the lowest grades within the department. Promotions are made for a probationary period of three years. Candidates found to be duly qualified are placed upon the list in the order of merit as shown by the examination, except that those who pass the examination in the highest grade are to be preferred over other candidates of equal standing. All examinations must relate to matters that will fairly test the capacity and fitness of the candidates. Vacancies in the city are filled, but which are not filled by promotion, must be advertised for the vacancies so that the highest in the special subjects designated, or a special examination may be held. No person is to be certified for appointment more than three times, except upon the request of the appointing officer. When the employment of any person in Schedule B is terminated, and the head of the department certifies that he has satisfactorily performed his duties, his name is returned to its proper place on the list. All appointments except upon the approval of the department are required to serve a probationary period of

...
In the State of Massachusetts—"An act to improve the civil service of the Commonwealth and the cities thereof," became a law June 1, 1884. Its provisions are in general conformable with those of the national act. The three Civil-Service Commissioners authorized to hold office for three years, their term having so arranged that one commissioner goes out of office each year. They are directed to prescribe rules for the selection of persons to fill offices in the government of the Commonwealth and of the several cities thereof, which are required to be filled by appointment, and for the selection of persons to be employed as laborers or otherwise. The commissioners are to supervise the administration of the rules.

The examination of March 8, 1884, for building inspectors, the commissioners believe to have been "the first municipal examination for places of this practical kind. . . . The success of this examination led to a competitive examination for street-inspectors, inspectors of plumbing, and foremen of street-repair gangs on April 17, 1884. The examination for foremen of street-repair gangs was deemed an extreme application of the competitive test." The result of the examination was very successful. In an examination for watchmen in July, 1884, the examiners first tried the experiment of selecting the testimonials furnished, as well as the physical merits of the candidates. The experiment was highly successful.

The number of salaried places included in Schedule A and exempted from examination is 81. The number of places in Schedule B, filled solely by competitive examination, is 1,418. The entire expenditure upon the civil-service work for the first year was about $1,400.
RHODE ISLAND.

he army or navy, his present occupation. When la-
ered, the head of the depart-

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a large number of applicants,
, the selection is by lot.
vice Commissioners submitted

t to the Senate and House of

Jan. 9, 1885, giving a sketch

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tion of Boston, New Bedford,

for places in the fire service

the police service of New Bed-

Lowell, Taunton, and Haver-

as cover about 440 places in

of the Commonwealth and

444 in the police and prison

monwealth and cities; the

ice service of Boston, and an aver-

10 in the labor service of Bos-

presented to the Supreme Ju-

Feb. 10, 1885, certain

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of the civil-service rules.

that the Legislature has the

t to provide for the appoint-

Civil-Service Commission-

to them the power to make

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ions can make rules applica-

of Boston. This opinion was

ers of the court, except

who was prevented by illness

the questions. An elaborate

port of these conclusions was

lished by a committee of the

vice Reform Association.

Davos, N. Y.

1. State Government.—The fol-

State officers during the year:

us O. Bourn, Republican;

, Oscar J. Rathbun; Sec-

Joshua M. Addeman; Treas-

; Auditor and Insurance

Samuel H. Cross; Railroad

Siegles, succeeded near

year by Walter B. Stimers;

; Samuel P. Colt; Commissi-

Schools, T. B. Stockwell.

e Court: Chief - Justice;

; Associate Justices, Pardon

harlen Matteson, John H. Sti-

M. Carpenter.

he treasury Jan. 1, 1884; $385-

3, 1884, were $825,708.

432.61; payments, $823,930.06; balance in the

treasury Jan. 1, 1885, $388,306.41. The re-

receipts were from the following sources:

State and other taxes ....... $384,226.05

Licenses ....... 90,741.80

Courts and jai

81,442.17

Shall fiscaries ....... 11,739.00

State institutions, Creations ....... 50,061.71

School fund ....... 12,193.00

Miscellaneous ....... 23,191.95

Total ....... $382,708.66

The payments were for the following:

Principal and Interest of State debt and sinking

fund ....... $192,560.60

Salaries ....... 60,581.03

Courts and care and support of offenders and de-

endent persons ....... 282,044.87

Military ....... 17,129.00

Educational purposes ....... 19,200.00

Erection of buildings and purchase of land ....... 45,063.79

All other expenses ....... 157,358.79

Total ....... $382,000.00

The bonds of the State outstanding Dec. 31,

1884, aggregated $1,372,000. The amount of the

sinking fund Jan. 1, 1885, was $371,237.07.

Education.—The following are the school sta-

istics for 1884:

Number of children enumerated, from five to fif-

teen years ....... 96,838

Increase ....... 409

Number that attended more than twelve weeks ....... 42,908

Increase ....... 2,446

Number that attended less than twelve weeks ....... 2,446

Decrease ....... 175

Number that did not attend any school ....... 12,394

Decrease ....... 67

Number of day-schools ....... 830

Average length of school-year ....... 8 months 4 days

Number of different pupils enrolled ....... 45,641

Average number belonging ....... 24,128

Average attendance ....... 20,747

Teachers regularly employed ....... 349

Amount paid teachers ....... $412,905.84

Number of different pupils enrolled in evening-

schools ....... 8,514

Average attendance ....... 1,649

Total receipts ....... $420,541.90

Current expenditures ....... 500,586.77

Permanent expenditures ....... 103,701.40

These figures are practically the first that have

been collected since the new civil-service act went into effect. A comparison of the results here revealed with those of pre-

vious years will show that a very decided gain has been made, both in the number enrolled and in the attendance. For the first time since

the census was first taken, the increase of at-

dendance at school is greater than the increase in the number of children. One marked feature in the results of this increased attendance

has been a decrease in the per-capita cost.

Although the law increasing the annual appro-
priation for public schools to $120,000, which

was passed in the winter of 1884, does not take
effect till 1885, the commissioner's returns show

that several of the towns have already responded
to this call from the State, and have, in advan-
tage of the receipt of the increased allowance,

raised their own appropriation.

The action of the Assembly in placing a

thousand dollars at the disposal of the State

Board of Education for the purpose of foster-

ing and promoting mechanical and industrial
art through the Rhode Island School of Design has met with good success. A small class of teachers has been formed for the special purpose of training them to give instruction in this branch in the common schools.

The State Normal School had a prosperous year. The attendance was never larger.

School for the Deaf and Dumb.—The last census showed that there were eighty-nine deaf and dumb persons in the State. The number of pupils during the year was thirty.

Charities and Corrections.—The appropriation for this board for 1884 was $100,000, with the sums collected for labor, board of inmates, sales of farm produce, etc., to be added thereto. These receipts amounted to $50,091.71. The total amount available by the board was therefore $150,091.71, all of which was drawn from the treasury. At the beginning of the year there were unpaid bills to the amount of $292.14. The amount of unpaid bills Dec. 31, 1884, was several thousand dollars. There was also appropriated the sum of $20,000 for erecting and furnishing a new building at the Sockanosset School for Boys, and completing the grounds, in addition to which there was an unexpended balance of former appropriations of $318.40. From these appropriations there was drawn the sum of $16,216.29. The total amount appropriated for the buildings and grounds of the boys' and girls' school is $150,000. The new building is nearly ready for occupation. It will accommodate seventy boys. At the May session an appropriation of $40,000 was made for new buildings for the incurable insane. The time named in the contract for the completion of the new buildings is May 1, 1885, but they probably cannot be completed by that time.

The number of inmates in each of the departments, Dec. 31, 1884, was as follows: In the State Prison, 118; in Providence County Jail, 218; in Sockanosset School for Boys, 164; in Oaklawn School for Girls, 41; in State Almshouse and House of Correction, 264; in State Almshouse, 206; in State Asylum for the Incurable Insane, 314; total, 1,351. This is an increase in all the institutions of 102 since the beginning of the year.

State Home and School.—At the January session an act was passed establishing a State Home or School for neglected and dependent children, to be under the control of the Board of Education. The Governor was authorized to appoint three commissioners to lease or purchase. By advice of the board, they purchased about forty-five acres of land in the city of Providence. There are a stone dwelling-house, two cottages, and a barn on the premises, all of which will be needed. "With a small appropriation," says the Governor, "to put the buildings in repair and to furnish them, the school can be begun in a very short time on a small scale. It will be necessary, however, to make an appropriation for the erection of additional buildings during the present year."

Divorce.—On this subject, the Governor says:

Our courts continue to grant divorces as fast as ever. In 1883 there were 297 divorces in our State, or one to every 1016 marriages. The past ten years there have been $8,084 applied for divorce, of which 2,262 were granted. It is possible that our citizens are content to continue... I trust that our laws are adjusted so that at least, Rhode Island may have the enviable reputation it now has to divorce, and may not longer be a resort for the more bountiful States of parties who can not be divorced there.

Colonial Town Records.—With reference these, the Governor remarks:

I desire to call your attention to the taking some steps to preserve copies of the town records. Some of them are in a safe place, but others do not and have no proper care. The value of these records is incalculable, and should by accident any of them be destroyed, a large amount of valuable history will be forever lost. The expense of such copies and indexes is not to be considered, and the office of the Secretary of State would be greatly small.

State Beecherists.—The State provided education and maintenance of its indigent feeble-minded, and deaf-mutes. Total for the blind is $300 per annum for each feeble-minded, $300 per annum for each deaf-mute, $175 per annum. The 8 superintendents of the institutions at present on the salaries are as follows: Perkins Institution for the Blind, E. W. Beecher School for the Feeble-minded, American Asylum for the Deaf and Dumb. Savings of $18,000.

Hours of labor.—The Governor says:

In my message of last year I called the attention of the Legislature to the fact that, owing to section 26 of chapter 149 of the Public Statutes, there was no limitation on the time that children employed in manufacturing establishments relative to the same time children were permitted to work in manufacturing establishments of any age. It also forbids the employment under fourteen years of age, unless they attended school twelve weeks in the year. It is probable that the employment under fifteen years of age, unless the children employed within thirty days of such employment. It is therefore probable that the limitation in the number of hours that children may be employed in manufacturing establishments is the same as it was in 1825. In other States the exemption has been tried of limiting the hours of labor and the number of hours in any one day that children may be employed in manufacturing establishments.

Political.—The State election occurred on the 2d of April. The Republicans renominated the officers, who were re-elected. The Democratic nominees were: For Governor, H. S. Slocum; Lieutenant-Governor, George A. Mathewson; Secretary of State, M. Wheeler; Attorney-General, J. S. O'Reilly; Treasurer, George T. LeRoy; Auditor, Robert E. Beatty; Engineer, J. E. Gable; Senator, John J. O'Brien; Representative, John S. White.

The Legislature consists of 32 Republicans and 6 Democrats, the Republican majority, 30. The House of Representatives consists of 29 Republicans and 8 Democrats, the Republican majority, 21. The Senate, and 57 Republicans and 2 Democrats, the Republican majority, 55.
ors on the 4th of November was as fol-

: Republican, 19,080; Democratic, 18,

Cheney, 429; Prohibition, 292. Two

blican Congressmen were elected. On
ember 2 United States Senator Henry B.
ony died, and on the 10th of November
Governor appointed William P. Sheffield,
ubican, of Newport, to fill the vacancy.

OMNIA CATHOLIC CHURCH. The year 1884
led with an event that agitated the Roman
holic Church throughout the world. On
uary 29 the Supreme Court of Cassation
ed by the Italian Government declared that
regarding the property of religious orders
congregations applied to the various de-
tments of the Pontifical Government, com-
ly called congregations, although they had
ing of a monastic character, nor the slight-
resemblance to a religious order. Under
decision, the extensive properties in which
Congregatio de Propaganda Fide had in-
ded moneys given to it by individuals for
support of Catholic missions in all parts of
world were ordered to be sold, the pro-
ods, after large deductions, to be assumed
as of the Italian Government to the Con-
gation de Propaganda, on which the Gov-
ment was to pay such interest as it saw fit.

This Pope Leo XIII., through Cardinal Siene-
sued a note, addressed to the Papal repres-
atives at the various courts, in which he
:
opaganda is a most important creation of the Pa-
intended to be always at the disposal of that
power for the accomplishment of the Divine
ion, intrusted to the Holy See, of propagating
and civilization among all nations. And as ra-
et the manner in which Propaganda has answered
purpose, the annals of missions are ready with
witnesses.

is such an institution as this, an institution bear-
s its origin, in its Constitution, in its actions, in
strengths, and, in its history, a character so essen-
cosmopolitan and universal, that it is now to be
cted to the private and particular laws of an iso-
government, to the judgment of a local tribunal
which immediately after declaring it in-
possessing legally, proceeds to despoil it of
erty. It was not enough to cut off Propaga-
loger during long years, passing from tri-
t trial, and bearing the heavy expenses of
lawsuits. It was not enough to force it to
ayment of enormous taxes, which absorbed the
part of its yearly revenues, thus snatched from
destination of beneficence. No regard was paid
a good office of persons worthy of consideration;
efforts to make the legal position more tolerable
for nothing. No attention whatever was paid to
refutable arguments which had won from pro-
tribune a favorable decision, and one approved
by all upright minds. The very will of the
at dead was slighted over the tomb. It might al-
be said that some power had decreed the spoli-
of Propaganda precisely because it is the most
aid expression and representative of the Papacy,
that before the decree of this strange power all
as of right and arguments of justice were vain.
rendering Propaganda incapable of holding its
powers, the state reduces it to a position be-
that of any class of citizens.
ast would be the situation of Propaganda if the
wage to suffer a reduction or if the payment were
suspended, as has happened in other coun-
tries? Who shall insure that it will be paid whole-
and punctually in circumstances of financial crisis, or
of war, or on other unfortunate events? Is it forgotten
that already, merely by way of "reprisal," the
payment of ecclesiastical pensions attached to the se-
quarsted religious property has been suspended by
the Piedmontese Government? The ever-increasing
development of Catholicism among the heathen, and
the increasing facility of communications, demand the
foundation of new centers of missions, and, in conse-
quence, the creation of seminaries, colleges, university-
ties, apostolic vicariates, and prefectures. Finally,
it is right to observe that Propaganda is not merely
the principal center of the government of missions, but
also that of an immense educational and scientific in-
istitute of the highest order, composing a college of
more than a hundred pupils with inestimable stores
of literature, philosophy, theology, and philology; a
library of extreme value, a most precious museum, and
a polyglot printing-press.

Taking these considerations as your guide, your
lordship will have the goodness to call the attention of
the Minister of Foreign Affairs to the gravity of this
new attack on the rights of the Holy See; on the ex-
ercise of Pontifical power; on the free exercise, so
indispensable in the propagation of the faith. Your
lordship will take the opportunity to speak of the
multiplied outrages and vexations which render the
situation of the chief of the Church daily more pain-
ful. If reasons of right, and honorable influences,
have been powerless to prevent a sentence so injuri-
ous and prejudicial to the Papacy, and so impolitic in
the opinion of the judicious, it may well be feared
that the judiciousness of the revolution may gain still
more, and
reduce the Sovereign Pontiff to most difficult straits.

This was followed by a circular letter of the
Sacred Congregation de Propaganda Fide to the
Bishops throughout the world, in
which it was said:
The Holy Father, most deeply grieved by this new
overbearing attack on the imprescriptible rights of
his apostolate, and foreseeing the deplorable conse-
quences which will arise from the conversion of the
present patrimony of the Sacred Congregation—a patri-
mony, moreover, already alienated for the greater part
by the Government "his pendens"—feels it his duty

to provide in the best possible manner for the future
security of so deserving an institution. With this
object, he has, therefore, deigned to command me to
decree, as I now do by this present circular, that hence-
forth the administrative seat of the Propaganda, for
donations, legacies, and offerings by which the
pity of the faithful may wish to meet the constant
and considerable expenditure of the institution, is
transferred out of Italy. And for the greater general
convenience, he has decided to establish in different
parts of the world centers of procurations, where the
offerings of the faithful may be put out of all danger,
and be at the free and independent disposal of the Sa-
cred Congregation for the benefit of the missions.

The action of the Italian Government,
through a court in its pay, to sell property
in which all the Catholic churches in mission
countries throughout the world were interest-
ed, and to deposit the proceeds in the national
treasury, excited protests in all countries. As
the American College at Rome was directly
menaced, Cardinal McOsker, Archbishop of
New York, at once addressed President Ar-
thur to claim the protection of the United
States for the college. Secretary Frelinghu-
ysen, through Mr. Astor, the American minister
at Rome, laid a protest before the Italian Gov-
ernment, which in March annulled, so far as
the American College was concerned, the judg-
ment of the Court of Cassation. As the question still remained in regard to other property, meetings were held in various parts—notably in the United States, Canada, Great Britain, and Ireland—at which protests were made, and the episcopate in many countries appealed to their governments to protect their rights menaced by the Italian Government.

On April 20 Pope Leo XIII issued an en-cyclical renewing the condemnation of the Freemasons made by his predecessors, which was followed, May 10, by a circular of Cardinal Monaco. Pope Leo encouraged devotion, especially prayers for the prosperity of the Christian religion, and the devotion of the rosary, though he disowned an attempt to celebrate a centennial of the birth of the Blessed Virgin Mary. He received several bodies of pilgrims at Rome, and when the cholera ravaged southern Italy, exerted himself to afford temporal and spiritual relief to the sufferers. On the Ist of May, by a motu proprio, he established a school of paleogra-hy, gave canonical erection to the American College, and presided over theological and philosophical debates. Decrees were issued in several causes from the Congregation of the Holy Office. On May 24, he elevated Jean Baptiste Delassus, Archbishop of Cadiz, O. S. F., and Ven. Gertrude Saldanoni, O. S. D. (February 9), and Queen Maria Cristina of Naples (July 1). Early in the year he addressed an encyclical to the bishops of France, on the trials of the Church in that country, and sent envoy extraordinary and delegate apostolic to Brazil, Peru, Ecuador, and Bolivia. The matter of church music was treated in a circular to the bishops of Italy.

During 1884 the Sacred College lost Cardinals De Luca, Billo, Hassoun de Pietro, and Falloux, and the Pope created as cardinal priests Joseph Sebastian Neto, Patriarch of Lisbon, and William Sanselice de Acquarelle, Archbishop of Naples, on the 24th of March; Anthony Monseillou y Viseo, Archbishop of Valencia; Celestino Ganghamburger, Archbishop of Vienna; Zephryin Gonzales y Diaz Tunon, Archbishop of Seville; Peter J. M. A. Celesis, Archbishop of Palermo, and William Massella, on the 10th of November; and created cardinal deacons, Carmine Merosi-Gori, Ignatius Masotto, and Isidore Verga, on the same day.

In Prussia, though the attempts of the Catholics to have the May laws absolutely repealed failed, their severity was greatly abated. At the beginning of the year the government authorized 119 priests in the single diocese of Breslau to say mass, thus exempting from fine and imprisonment; priests that had been debarred by the law from officiating for their flocks were restored to their salaries in the diocese of Kulm, Ermeland, and Hildesheim, but in other dioceses the laws were enforced.

In Austria a mob invaded a church where a preacher was denouncing socialism, and great excesses followed.

In Belgium the Catholic spirit was revived by the freedom given to education, and by the honors paid on March 3 to the blessed Charles the Good, Count of Flanders, who had been beatified Feb. 9, 1882.

In France, Government showed an ame-nity in reducing the appropriations for maize of the Catholic clergy, and in passing an act allowing divorces.

Catholic interest in the United States turned on efforts in Rhode Island, Kentucky, New York, and Pennsylvania, to obtain for Catholic inmates of State penal and elementary insti-tutions the privilege of having Catholic vis-i-sion on Sundays and exemption from compulsory attendance at Protestant services. The awakening of an historical interest was shown on the centenary of Father Juniper Serra in California, and on the establishment of Catholic Historical Societies in Philadelphia, New York, and Pittsburg. The great event was the assembling (November 9) of the third Henry Council at Baltimore, which continued its sessions to December 11. It was presided over by Archbishop Gibbons, of Baltimore, who had been appointed by the Pope Apostolic delegate. There were present fourteen archbish-ops, sixty bishops, and one prefect apostolic from the United States, with five visiting bishops from other countries, and thirty abbots or superiors of religious orders. The decrees were not made known, but were reported to embrace the establishment of rectors irresolvable except for cause, who were to have the selection of candidates for the episcopate when a vacancy occurred; the adoption of the catechism for the whole country, and the erec-tion of a Catholic university.

The Catholic missions suffered in Sodoma, where they were broken up in consequence of the fanaticism excited by El Mahdi. Seven priests and four sisters died of exposure or were massacred, according to reports the French Consul at Tonquin, which resulted in hostilities with China, led to massacres of Christians in the Annamite districts of Phanhoa and Npira. Christians were also persecuted in Cochinchina, and in China itself.

ROUMANIA, a kingdom of eastern Europe, formerly a province of Turkey. Absolute in-dependence was proclaimed May 22, 1877, and was recognized by the powers at the Congress of Berlin, June 12, 1878. The principality of Roumania was erected into a kingdom March 26, 1881. The Constitution was elaborated by a Constituent Assembly in 1886, and modified in 1884 by the Chambers. It delegates the legislative power to the Senate, of 120 mem-bers, and the Chamber of Deputies, of 181 members, chosen by electoral colleges in each district. Every taxed citizen is a voter.

The King, Carol I, the son of Prince Ebenzollern-Sigmaringen, was born April 20, 1838. He was elected Prince of Roumania in 1886, after the abdication of Conza, who was elected Hospodar of Moldavia and Wallachia in 1859, and assumed the title of Prince Alex-
ROUMANIA.

John I upon their union into the pri-
r of Roumania in 1861. The executive
ity is exercised by a council of eight.
ministry is composed of the following
ers: President of the Council and Minis-
the Interior, J. C. Bratiano; Minister of
struction and Worship, G. Kitz; Min-
Foreign Affairs, D. Sturdza; Min-
Finance, G. Lecca; Minister of Agri-
Commerce, and Domains, J. Campi-
 Minister of Justice, N. Voion; Minis-
War, Gen. E. Falcoiano.
and Population.—The area, as fixed by
ary of Berlin, is about 48,979 square
The latest census taken in Roumania
be number of inhabitants at 4,424,961.
upital, Bucharest, contains 221,000 in-
is; Jassy, 90,000; Galatz, 90,000. The
of marriages in 1888 was, exclusive
Dobrudja, 44,114; births, 265,897;
25,677.
the accounts for the fiscal year
March 30, 1888, state the total receipts
378,333 lei, or francs, and the expendi-
tes 200,090,715 lei. The budget for
35 makes the receipts 130,260,483 lei,
ich 24,380,000 are derived from direct
58,300,000 from indirect taxes, 20,075,
 the domains, 9,617,926 from public
, and the rest from the other ministries,
of the surplus of 1882-88, and from
sources. The expenditures are made to
 the receipts, 50,180,064 being devoted
requirements of the public debt, 30,551,-
military expenses, 12,786,389 to instruc-
 worship, and the remainder to the
ministry and various expenses. The
divided into two classes—the
loans and railway construction loans,
urer and the paymaster, 1,184,411 lei,
 largest part bearing interest at
ent. and provided with sinking funds
 the last bonds in 1896. The latter
ed to 206,842,379 lei, the main loans
f the annual budget, and the rest, con-
 the debt, redeemable before 1923.
 one third of the public debt is held in
, and the rest mainly in Germany.
Army.—The military force is composed
standing army with its reserve, the ter-
army, with its reserve, the militia, and
y in mass. The law of 1876, modified
 and 1888, obliges every Roumanian
of bearing arms to serve, in person,
ears in the standing army and four years
 territorial cavalry or four in the terri-
fy. The effective strength of the
army on the peace footing is 1,300 offi-
d 18,532 soldiers, with 2,945 horses and
 The territorial army can muster
0,000 men. The fortification of Bu-
y ring of nineteen forts was author-

Two.
the total value of the imports in
in 1880; the total value of the exports in
was 220,850,379 lei, against 244,730,199
1882, 206,518,817 in 1881, and 216,918,878
in 1880. Of the total imports in 1885, 123,973-
000 lei came from Austria-Hungary, 78,743,000
from Great Britain, 48,887,000 from Germany,
36,491,000 from France, and the rest from
Turkey and other countries; of the total ex-
ports, Great Britain received 88,649,000 lei,
Austria-Hungary 71,475,000, and France 19,-
080,000. The imports and exports of the
principal classes of merchandise were valued in
1886 at the following amounts in lei:

<table>
<thead>
<tr>
<th>CLASSES OF COMMODITIES</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals</td>
<td>7,000,000</td>
<td>136,500,000</td>
</tr>
<tr>
<td>Animals</td>
<td>4,000,000</td>
<td>12,000,000</td>
</tr>
<tr>
<td>Hides and leather</td>
<td>45,700,000</td>
<td>6,600,000</td>
</tr>
<tr>
<td>Timber and wood manufactures</td>
<td>10,580,000</td>
<td>8,700,000</td>
</tr>
</tbody>
</table>
| Textile materials and manufact-
 ures                           | 1,500,000| 117,500,000|
| Metals, and manufactures thereof| 45,800,000| 3,000,000  |
| Oils, fats, etc.                 | 2,500,000| 200,000   |
| Total                           | 257,350,000| 406,900,000|

The exports of milk and cheese averaged
5,000,000 francs a year, those of fruits and
vegetables 7,500,000 francs, those of timber
5,000,000 francs, those of live animals 17,000,-
000 francs. The timber of the Roumanian
forests is exported in large quantities at very
low prices and is consumed without stint for
fuel.

Agriculture.—The Roumanians are almost ex-
clusively engaged in agriculture. The popula-
tion is only forty to the square kilometre, and
the method of cultivation is expensive. Nearly
half the area of the kingdom is cultivable s-oil,
but of the tillable land not much more than a
third part is under the plow, nearly half lying
in pasture, a twelfth part being meadow, and
a twenty-fifth vineyard and garden. Of the
lands not suitable for cultivation, two thirds
are sterile and unproductive, and one third is
covered with forest. The pasture-lands are
mainly leased from the large proprietors by
the sheep-growers. The country is rich in
both sheep and cattle, possessing 5,000,000
head of the former and 3,000,000 of the lat-
er, besides 500,000 goats, and over 1,250,000
swine. The lowlands in Roumania, as in the
neighboring parts of Austria and Russia, are
covered with a black humus a metre deep on
the average. Manure is never used, yet the
wheat-lands show no sign of exhaustion. The
creation of a peasant proprietor has long been
the aim of the Roumanian statesmen. Eman-
cipated from serfdom in 1848, but not endowed
with lands, the peasants were left in the same
dependence on the boyars as before. In 1844
Prince Cazul issued an edict making them the
owners of the lands that they held in actual
possession, giving the proprietors an indemnity
amounting to 14,000,000 francs. By this act
400,000 peasant families were made the own-
ers of about the eighth part of the land. They
were prohibited from alienating their posses-
sions for a period ending in 1884. This term
RUOMANIA. 703

The Constitution of the National Guard was formally abolished, as incongruous in the new military system. The Liberals carried through an amendment guarding against the revival of the Council of State, which was abolished by the Constitution of 1866, in the guise of an administrative council; yet they agreed to a provision for the eventual establishment of a permanent commission with advisory powers for the preparation of legislative bills and administrative decrees. The proposition to appoint under-secretaries to represent the ministries in Parliament was also approved. The amendment, which prolongs for thirty-two years the period during which the former serfs are forbidden to sell lands allotted to them by the state, applies likewise to the peasant proprietors of the Dobrudja who received their holdings through the intervention of the state.

General Election.—In the beginning of October Parliament was called together for the purpose of receiving the decree of dissolution, in order that the elections for a new Parliament, chosen under the revised electoral law, might take place before Nov. 27, the date appointed by law for the opening of the regular session. The Government party achieved a complete victory. On December 5 the Bratiano ministry handed in their portfolios, in order that a new Cabinet might be formed which would represent the majority lately returned by the constituencies. In accordance with a resolution passed by Parliament in secret session, they recalled their resignations and continued in office.

The Disabilities of the Jews.—Under the pressure of the powers at the Berlin Congress, the Roumanian Government undertook to rescind the article of the Constitution 1874 excluding Jews from civil rights. The Constituent Assembly of 1879 accordingly modified the article in such a way as to remove the religious disabilities, and yet leave its provisions still effective against the numerous Jewish community in Roumania. To do this, it substituted the word “foreigner” for “non-Christian,” thus incapacitating the citizens of other states from acquiring land and the other rights that had previously been withheld from the Hebrews. This enactment shut foreign capital from the agricultural development of the country. In certain cases it worked hardship for heirs of Roumanian estates who were citizens of other countries. The Jews of Roumania, though their ancestors for centuries had resided in the country, were legally foreigners. Their petitions for naturalization were not granted, except in the rarest instances. The Jews were worse off than before, because, when they returned from a sojourn abroad, the officials began to demand their passports. Jews who wished to go out of the country were provided with emigration certificates, and prohibited under severe penalties from returning. Fresh disabilities were imposed on Jews, or,
value of merchandise imported in countries through the ports of 1888 was 190,500,000 rubles, ex-
1,000 rubles; imports by way of tieries, 268,785,000 rubles, exports
rubles; imports by way of the
ts 55,950,000 rubles, exports
rubles; imports through the ports
Sea 826,000 rubles, exports
same with European countries
exports of cereals amounted to
rubles; imports, 5,957 rubles; the
liquors amounted to 16,194,000, the
9,000 rubles; imports of grocer-
exports 270,000 rubles; exports
d and fruits, 47,877,000 rubles;
exports of animals, meat,
26,856,000 rubles, imports 11,
; total imports of articles of
112,816,000 rubles, total exports
rubles. The imports of fuel
18,173,000 rubles, exports 70,000;
neral products 93,880,000 rubles,
,000; imports of raw metals 11,
exports 16,694,000; imports of
hair, and of 127,400,000 rubles;
exports 19,000 rubles, exports 35,044,000 rubles;
imports of raw materials 192,372,
total exports 180,905,000 rubles.
ob glaze and pottery amounted to
es, exports 800,000; the imports
ufactures and clothing to 27,
exports 5,926,000; imports of
ctures, machinery, time-pieces,
ables, exports 1,327,000; im-
ufactures of wood 5,950,000
727,000; total imports of man-
icles 106,409,000 rubles, total ex-
rubles. The imports of drugs,
colors were of the value of 54,
exports 46,000; imports of
fats 28,175,000 rubles, exports
ports of other articles 24,170,000
14,358,000; total miscellaneous
rubles, total exports 30,
the imports of specie in 1882
9,149,000 rubles, and the exports
to 76,620,000 rubles, making the total import
commerce with Europe 537,512,000 rubles, and
the export commerce 867,848,000 rubles. Of
the imports from Finland in 1882, reported as
15,088,000 rubles, 9,678,000 rubles represented
manufactured products, 8,505,000 raw and
partly manufactured products, and 1,910,000
articles of food and consumption; of the
exports, amounting to 13,214,000 rubles, 8,394,
000 rubles represented articles of consumption,
2,888,000 manufactured objects, and 2,062,000
raw materials and partly manufactured prod-
ucts. The total merchandise imports from
Asia amounted to 82,858,000 rubles, consisting
of tea, of the value of 19,188,000 rubles, fruits
and legumes, textile materials and manufact-
ures, leather and peltry, cereals, etc. The
exports to Asia amounted to 12,738,000 rubles,
the leading articles being textile manufactures
of the value of 3,618,000 rubles, textile mate-
rials of the value of 2,196,000 rubles, and
cereals of the value of 1,585,000 rubles. The
exports of the precious metals from Asia were
825,000, and the exports to Asia 8,888,000 rubles,
making the total import trade 33,478,
000 rubles, and the export trade 17,696,000 rubles.

Petroleum.—The naphtha production of Rus-
sia increased from half a million poods in 1875
(1 pood = 86 pounds) to 25,000,000 poods in 1880,
30,000,000 in 1881, 50,000,000 in 1882, and
60,000,000 in 1883. The manufacture of pet-
roleum increased from 7,588,750 poods in 1880
to 11,630,988 in 1881, 12,471,715 in 1882,
and 14,252,825 in 1883. In the first six months of
1884 the production of both the raw and the
refined oil in the Baku district was 50 per
cent greater than in the corresponding part
of the preceding year. The industry was greatly
stimulated by the opening, in 1888, of the
Transcaucasian Railroad from Baku to Tiflis,
through Batoum and Poti, by means of which
petroleum can be exported to western Europe
by way of the Black Sea. The exports to Eu-
rope increased 300 per cent. in 1886, and in
a much greater proportion in 1884. The ship-
ments to European countries by way of the
Black Sea of illuminating oil during the first
eight months of 1884 amounted to 2,175,000
poods. Including lubricating oil and other
petroleum products, the exports by this route
were valued at 3,385,000 rubles. The exports
across the Russian land frontiers were only
387,000 poods of illuminating oil. From the
waste products a fuel is obtained which is
cheaper than coal. It is used on the steamers
of the Caspian and the Black Sea, and in a
large number of factories that have been start-
ed on the banks of the Volga. Russian petro-
leum has driven American oil out of the Rus-
ian market. In 1872 nearly 16,000,000 gallons
of American petroleum were exported to Rus-
ia. In the first eight months of 1888 the ship-
ments were 1,287,513 gallons. In the same
part of 1884 they fell off to 108,961 gallons.
The exports to Austria declined from 7,889,-
440, of which number 1,084,505 were and 1,076,735 females. The number were adherents of the Lutheran con-
ferences 2,069,730, of the Greek Orthodox,
of the Roman Catholic 2,899.

The speaking Finnish was in 1880 1,756-
swedish 294,876, Russian 4,195, German
Lapps, etc., 961. Helsinki, the prin-
cipally, has a population of 46,919 souls.

The number of marriages in 1893 was 15,928,
the 78,945, of deaths 49,018; excess of
29,927.

The total value of imports in 1889 was 167,-
O gold marks (the Finnish mark is the
1,500,000 marks from Norway
x, and 13,700,000 marks from Norway
waids; from the United States 2,500,000
marks. The total value of the exports was 119,-
O marks; to Russia 54,000,000 marks, to
Britain 24,000,000 marks, to France 10,-
O marks, to Germany 8,000,000 marks,
and Norway 2,800,000 marks. The
is entered at Finnish ports in 1882 was
90 tons, of which 932,695 were under
nish flag, 62,624 under the Russian, and
I under foreign flags. The tonnage on
with cargoes was 724,995, cleared with
3,179,080; total clearances, 1,589,907. The
The merchant navy consisted, Jan. 1,
0 vessels, of 243,420 tons, using
ower, and 253 steamers of 11,093 tons.

railroad mileage in 1888 was 1,981 kilo-
, of which all but 36.5 kilometres belonged
The number of letters carried in
ils during 1882 was 8,078,893, includ-
als, etc.; the receipts of the post-office
635 marks; the expenses, 800,360.

of war, and the total receipts
11 marks, of which 6,859,700 are de-
from the property of the state, 7,411,-
1 direct taxes, 7,049,800 from indirect
1,104,000 from stamps, 2,631,192 from
erv, and 1,598,400 from the service
public debt, 2,789,009 to public works
struction, 3,139,000 to railroads, 1,286,-

1,279,871 to prisons, and
55 to dotations and pensions. The pub-
was, on Jan. 1, 1894, consisted of an inter-
2,871,600 contracted to relieve
of feudal dues, and foreign loans, pay-
most part 4%. cent interest, amount-
the sum of 59,784,034 marks.

Army.—The effective strength of the field
in the peace footing in 1884 was 19,774
and 832,764 rank and file, including
non-combatants, with 838 batteries of
of 1,815 guns and 74,631 horses.

The troops numbered 6,506 officers and 68,-

The army was organized in 768
battalions of infantry and 54 of riflemen, 280
squadrons of cavalry, 308 batteries of artillery
with 4 guns each, and 30 of flying artillery
with 6 guns each, and 394 troops of engineers.

The Garrison and local troops in time of peace
numbered 1,625 officers and 39,625 men, the
depot troops 851 officers and 11,884 men, the
troops of instruction 59 officers and 1,133 men,
making the total peace effective of the regular
army 293,516 officers and men, with 139,796
horses. The war effective is reported as 1,-
766,248 officers and men, with 292,936 horses
and 3,644 pieces of field artillery. The Cos-
sack troops have an effective of 61,946 officers
and men, with 38,707 horses, in time of peace,
and of 145,832 officers and men, with 138,030
horses, in time of war. The irregular troops
number 5,776 men, with 3,872 horses, on the
peace footing, and 6,821 men, with 5,988 horses,
on the war footing. The total strength of the
Russian army is 737,238 men in time of peace,
and 1,017,904 in time of war. The disposable
materials not entered in the reports would raise
the effective to about 800,000 men in time of
peace and 3,000,000 in war time. The number
of soldiers under arms on Jan. 1, 1886, exclu-
sive of the Cossacks and irregular troops, was
reported as 662,449, with 39,889 sailors.

The distribution of the principal part of the
standing army among the military districts about
the beginning of 1884, having a total strength
of 38,074 officers and 836,145 men, was as fol-
low: St. Petersburg 82,470, Finland 48,445,
Wilna 104,568, Warsaw 70,507, Kiev 89,864,
Odessa 66,436, Khar'kov 63,146, Moscow 84,-
835, Kazan 39,862, Caucasus 99,604, eastern
Siberia 17,058, Turkistan 26,079.

The Navy.—The Russian fleet in the Baltic
consisted in 1888 of 81 ironclads with 285 guns,
97 armed steamers with 312 guns, 18 armed
steamers, 8 sail-ships, and 95 torpedo-boats;
the Black Sea fleet of 7 ironclads with 61 guns,
97 armed steamers with 106 guns, 59 other
steamers, and 16 torpedo-boats. In the Caspian
there were 12 steamers, 2 with guns, 4 unarmed,
and in the Lake of Aral 6 steamers
with 18 guns. The Siberian fleet comprised 8
armored steamers with 42 guns, 18 unarmed
steamers, and 6 torpedo-boats. The navy was
manned by 8,930 officers and 35,806 sailors.

Two new armor-plated vessels, the Tcherniga
and Sinope, were expected to be completed in
the spring of 1885. They are built entirely of
steel, and lined throughout with water-tight
compartments. They are alike in every re-
pect. The length is 339 feet, displacement
10,181 tons, armament 6 12-inch and 76-inch
guns, engines 9,000 indicated horse-power.

Finances.—The financial accounts for 1888
state the total receipts as 708,712,000 rubles,
77,329,000 more than the estimates. The direct
imposts produced 112,970 rubles, the license-
taxes 19,704,000, the liquor-tax 251,887,000,
the tobacco-tax 14,311,000, the sugar-tax 5,-
050,000, customs duties 94,451,000, stampes 15,-
519,000, registry dues 9,877,000, passports 5,
dickt a book or a periodical. In
ority to intervene in affairs of
vested in a committee of four,
place of the full Ministerial
another enactment the prevent-
the case of newspapers was re-
another form. The Minister of
issue secret orders to editors
ertain news or to alter the tone
ents under pain of suspension or
umberless circulars of this de-
 prevented the publication in
ny of the events of greater or
nce, or of comment on public
cept in praise of governmental
press in Russia, with the ex-
a dozen semi-official organs,
Liberal. The provincial papers,
submit their proofs to a censor-
tion, and which were less de-
amination of opinions they could
less than the metropolitan press,
ly by official persecution, and all
m disappeared during the last
apers of the two capitals kept
arity by varying servile praise,
one recognized as perfunctory,
icism and satiric. In 1851
ceeded to crush them alto-
editors were deprived of matter
by ministerial ordonnances, and
ings, penalties, and sus-
the few tame journals that still
ist were wound up by their
arly a newspaper continued
published in Russia except the
organisms, which have never found
ship of books was carried by Connt
ill more extravagant pitch. Fre-
ere given for the confiscation
had entered into circulation
matar of previous censors. In
weeping decree than any that
prohibited from circulation
Russian and foreign authors,
 supplied the chief intel-
the Russian educated class for a
be most popular and influential
were included in the interdict,
nish writers as Lyell, Hazley,
 Smith, J. S. Mill, Herbert
, and Bagehot. The same or-
c police to suppress the circu-
lization of periodical literature.
books are confiscated when
ellers' shelves, are destroyed in
ulating libraries, and can be
houses. A subsequent enact-
y youths under sixteen years of
ng or reading any work with-
permission of their teachers.
he new reaction against educa-
nated after the student disturb-
In consequence of Karakov's
Life of the Emperor, Count
Tolstoi was empowered to purify the secondary
schools. The intellectual life of the universi-
ties was blighted by placing professors and
students under the censorship and discipline of
military martinet. The school-boys in the
classical and scientific preparatory schools were
subjected to police surveillance, and held ac-
countable for their political opinions. In Sep-
tember, 1885, traces of a criminal propaganda
were reported in thirteen gymnasiurns, one
pro-gymnasiurn, and ten real-schools, and "col-
lective disorders" in fourteen gymnasiurns and
four real-schools. In the gymnasiurns, which
are the schools of the aristocracy, the system
of instruction was altered for the distinct pur-
pose of stunting thought and knowledge. All
studies were practically banished from the
curriculum in favor of the classics, and clas-
sical training was reduced to a sterile drill in
grammar. The literature and history of Greece
and Rome were not studied, for fear of their
contaminating political influence. The train-
ing is as severe as it is irrational. As the re-
sult of the examinations of 1879 the number
of students that completed the course was
6,511, while 51,406 had failed during the seven
years. The real-schools are intended to pre-
pare young men for practical life, or for the
higher technical schools, and are attended by
sons of the middle class and of the lesser no-
bility. There are only 39 of these, as com-
pared with 180 gymnasiurns. The instruction
is purely theoretical, conducted from text-
books. Only one fifth of the students that
qualify themselves for admission to the supe-
rior professional schools can be received.
The ministry have rejected all petitions for the es-
 tablishment of new technical colleges at Khar-
kov and other places. In 1881 the Zemstvo
petitioned the Government to allow graduates
of the real-schools to enter the universities.
The ministers appointed a commission to con-
sider the question, but, when the date arrived
for the meeting of the commission, postponed
the inquiry indefinitely.
A new regulation for the universities was
issued in the autumn. A special police was re-
instituted in every university for the oversight
of both professors and students, in charge of an
inspector directly appointed by the Ministry
of the Interior. The autonomous system by
which the rector and four deans were elected
for three years by their colleagues was abo-
ilished, and the rector was made a Government
official, appointed by the minister, with power
to convokc and divide the university council
at his pleasure, and to annul its decisions if he
sees fit, and with disciplinary authority over
the professors and the right to take any mea-
 sures he deems proper for the maintenance of
order. The character of the body of teachers
is destined to be transformed by the new regu-
lation. Henceforth no man will be eligible to
a professorship unless he has served three
years in the subordinate capacity of a tutor,
and he can only be appointed a tutor on the
Russia. 711

lox rite was consecrated at Riga.

The Latvian and Estonians

t in the Russian Church in large

earnest efforts are made to con-
nan Lutherans.

ons with the Vatican greatly im-
ging the pontificate of Leo XIII.

andment of a modus vivendi in

ish bishops have displayed a

story and loyal disposition. The

seion of the Uniate Catholics

and the relations with the Curia,

of Polish Catholics laid before

petition with 9,000 signatures on

Uniates. Pope Leo promised to

petition to the Oza, and to inter-

one of the most vivid and charm-

This interruption of friendly re-

the Russian Government to leave

regulations relating to the acquire-

by Russians in the old Polish

which have been one of the main

cesses since the rebellion.

The revolutionaries were gener-

Arrrests took place more fre-

and a great number of

spectable position, many of them

k., were imprisoned. About sev-

ers of the army were arrested at

holding socialist opinions. The

decided, in consequence, to create

mission, under the presidency

d Duke Nicholas, charged with

propagation of socialism in the

suggestions of the Grand Duke

igorous a nature that they failed

approval of the chief of police.

series of political assassinations

inning with that of Colonel Striel-

une 22 Captain Gezhby was mur-

man-servant and a woman. On

Mary Kalogyn, the daughter of a

y of a year and a half, who

Terrorists after the deportation

er in 1879 and had been a com-

r, attempted to shoot Captain

the Odessa police. After her re-

ten months' imprisonment she

able living by teaching, until the

supervision of the police goaded

erate on. In October, the trial

Nihilists took place in St. Peters-

bf a tribunal composed of

The principal culprit was Col-

enner, commander of a regiment

of Russia, who was one of the

ists in the army, and was a

or for the party. Another was

and talented Vera Figner, who

ead the spirit in nearly every plot

the Caucasus and elsewhere

exceedingly active and successful

Nihilism among the troops. Two

other women, two sons of priests, two sons of

merchants, a nobleman, and five other officers

were the other persons tried. The officers

were a staff captain of artillery, two naval

lieutenants, and two lieutenants of the army.

The women Figner and Wolkenstein, and the

six officers were condemned to death, and the

others to hard labor in Siberia. Their crimes

date back to the beginning of terrorism in 1875

and 1876. Figner took part in the first serious

demonstration before the Kazan cathedral.

After the murder of the Oza she offered shel-

ter to Soukhanoff and Pervovsk. The two

naval lieutenants were friends of Soukhanoff.

Colonel Aschenbrenner started a military cir-

cle at Nikolaiev in 1889. The other officers

organized military and naval revolutionary cir-

cles in St. Petersburg, Cronstadt, and Helsing-

fors. The capital sentence was executed only

on the naval lieutenant, Baron Stromberg, and

the artillery lieutenant, Rogatschow. The sen-

tences of Vera Figner, and of Aschenbrenner,

Captain Poknitchov, and Lieutenant Tikhonov-

ich, were commuted to hard labor for life in

Siberia; and those of Wolkenstein and the

other officer to hard labor for fifteen years.

Mary Kalogyn was tried at Odessa, in Sep-

ember, for her attempt on the life of the chief

of the Odessa gendarmes, and was sentenced

to twenty years' incarceration in the Castle of

Schlussburg, in the dungeons of which politi-

cal prisoners are now usually confined. In

the early summer a rigorous search was insti-

tuted in Warsaw, Lodz, and other manufactur-

ing towns of Poland, which resulted in the

arrest of a large number of workmen. In

September, in consequence of the disturbance

at the University of Kiev, there were one hun-

dred and sixty-eight students arrested on the

charge of being connected with the Nihilists.

The university was closed until January, 1888,

and no student was permitted to enter any

other university. In Warsaw twenty stu-

dents, most of them sons of government offi-

cials, and a number of girls of good families,

were arrested as Nihilists the same month. In

St. Petersburg, bombs and documents describ-

ing an intended plot were discovered in a

lodging-house and the inmates apprehended.

Lapatin, one of the leaders of the party, was

captured on the Newski Prospect, charged

with complicity in the murder of General

Mezenoff. A great number of arrests that

never transpired were made during the year

in all parts of the empire, and many prisoners

were dealt with by secret trial, or by adminis-

tative order, without publicity. On Decem-

ber 13 a batch of fifty recently arrested Nihil-

ists were sent to the Schlussburg fortress.

Anti-Jewish excesses. — At Nijni-Novgorod,

just before the opening of the fair in June,

from 3,000 to 3,000 laborers attacked the Jews

in the suburb of Kunarvin, killing nine and

wounding twelve. Six houses were razed to

the ground and all the others were pillaged,

and all the Jewish property in the village Sa-
stroyed. The Cossacks and police had great difficulty in dispersing the rioters, who threw sand in the eyes of horses and men. Njini-Novgorod is outside the limits assigned by law for Hebrew habitation, and the thirteen families plundered and bereaved resided there by special permission. The riot started by a woman, who saw a Jewess take a child, that had fallen into a ditch, into the meeting-house to warm, and who started the cry that a Christian child had been kidnapped for another sacrificial murder.

The Czar at Warsaw and Skieriewicz.—In September the Czar made a visit to Poland, winding up with the interview of the three emperors at Skieriewicz, an imperial hunting-castle south of Warsaw. The visit to Warsaw was the gloomiest festivity known to modern history. The whole line of railroad and the royal train were searched and guarded. Before the entrance into Warsaw, the streets through which the Czar would pass were thoroughly examined and the private houses taken possession of by the police. Every person whose loyalty was not indubitable was removed. The citadel was crowded with political suspects. The Emperor passed between rows of bayonets at the Roman Catholic Cathedral. The instructions to the police were issued by the Okhrana, or special body-guard of the Czar. The city was decked with bunting and other festal adornments, yet all was arranged by police orders, without the slightest popular participation. At the ball, where the Czar and Casarina were ostensibly welcomed by the leading society of Poland, not a single Pole appeared who was not connected with the civil or military service. The police precautions were taken partly upon suggestions from the Berlin police, who are said to have given warning of every important plot that has transpired in Russia. At the village of Skieriewicz the Emperor retired, which was surrounded as at Warsaw, though so carefully disguised that wherever the Emperor and his court appeared there was no sign of constraint or of extraordinary vigilance. The meeting at Skieriewicz signified the solemn confirmation of friendly relations between Russia and the German powers, the termination of the tension between Russia and Austria, arising from their rival interests in the Balkan Peninsula, and aggravated by political intrigues and a newspaper war. One of the results of the negotiations with the allied German powers was the final conclusion of a convention that enables the Russian Government to reach and repress the exiled revolutionists who lay plots and carry on the propaganda in Russia from countries having easy communication with the Muscovite dominions. Thousands of Russians were driven out of Berlin, and sufficient pressure was brought upon Switzerland to force the Federal authorities to expel the Russian schemers of revolution from their former foreign headquarters.

Russian Turkistan.—A special commission, presided over by Count Ignatieff, elaborated a plan for the reorganization of the Central Asian province. The strategical points are to be changed, the routes of communication altered, and Gen. Cherniaeff's new route from the Caspian Sea through the Ust Urts Desert to Kungrad opened up, the systems of irrigation improved, railroads constructed, trading stations established, colonists brought in from central Russia, the land laws reformed, the natives educated in agriculture, and the several laws of the empire introduced. Russia Turkistan, since the retrocession of Kuldja to China, and the transfer of Semirechensk to the Steppes, comprises only the four provinces of Syr Daria, Amu Daria, Ferghana, and Zarafshan. The region is almost rainless for eight months in the year. One half of the surface is desert and the rest nearly all steppe, the fruitful cultivated valleys constituting only 2 per cent. of it. Yet there has been great improvement in the economic condition of the country since the advent of the Russians about 1867. In eleven years the population was increased threefold by the annexation of new districts, and their colonization from Russia and the neighboring khanates. A great number of the Tartar inhabitants have been won from their nomadic habits. In 1867 the nomads constituted 70 or 80 per cent. of the population, and in 1877 only 58 per cent. The number of inhabitants in the towns is 723,000, the settled population outside the towns 1,947,000, the nomadic population 1,417,000. There are 60,000 Christians and 8,000 Jews settled in the country. The European quarter of Tashkent resembles a Russian city. It is in contemplation to change the capital to Samarcand. Russian trade with Central Asia has not thrived as well as was expected. In 1872 Russian goods of the value of $7,000,000 were imported into the Russian Empire, while the products of the country amounted to $3,250,000; in 1881 the imports from Russia amounted to $8,500,000, and the exports to Russia were $15,500,000 in value. English goods compete successfully with Russian goods in Bukhara, Ferghana, and Samarcand. In June Gen. Rosenbach succeeded Gen. Cherniaeff as Governor-General of Turkistan. In the summer Kungrad on the Oxus, in the northern part of Khiva, the seaport of the khanate on the Sea of Aral, and the terminus of the proposed new route across the Ust Urts plateau, was occupied by Russian troops on the ground of violations by the Khan of the treaty of 1873 and of his general misrule. The Khan Said Mohammed, since his defeat by Gen. Kaufmann in 1873, has often begged his conquerors to relieve him of the responsibilities of government. The Russians not only compelled him to abandon the warlike and predatory practices that were the source of his greatness, but thickened his internal policy and required him to carry out difficult reforms in preparation for the final absorption of the
hakanate in the Russian dominions. The press of England and the trouble with the Tekke Turcomans, which the Khan was expected to take in addition to his other tasks, delayed its consummation. Now that all difficulties are out of the way, the Russian Government intends to speedily assume the administration of the khanate, and assigning Seid Mohammed a pension. The same fate awaits Jhakara, which has gravitated toward Russia very rapidly, though the more satisfactory administrative and the peaceable and laudable character of its inhabitants, render it preferable less justifiable. In that event, unless the Oxus is defined by the firmest treaty action as the northern boundary of Afghanistan, fresh Afghan difficulties will ensue, because the northern slopes of the Hindu Kush largely inhabited by people of the Turcoman race, who pay allegiance to the Khan of Bokhara rather than to the Amur of Jhakara.

 Annexations on the Afghan Border.—The incorporation of the oasis of Merv, the ancient and modern stronghold of the Turcomans, in the Russian dominions, was only a question of time after the conquest of the Akhal Tekke by the Emir of Khoja. Directly opposite is the site of the once important city and stronghold bearing that name. The British annexed old Sarakhs in the summer, fortified the hill on which it is situated, and established a large garrison. Russian merchants followed the military, and very soon this new terminus of their caravan route became the busy center of a trade that extended into Persia, Afghanistan, and throughout the Turcoman country. The Sarik clan, the last independent remnant of the Turcomans of the steppes, eventually joined their brothers, who found the life of peaceful hard labor with a profitable market for their products not less satisfactory than the pursuits of kidnapping and robbery, which they were no longer at liberty to follow, and accepted the sovereign protection of the Great White Czar. When Prince Doudounoff Korsakoff reached Askabad in the spring, he found a delegation representing the great body of the Sarik Turcomans, who formally took the oath of allegiance. The Sarik tribes will be exempt from taxation for the present, but must maintain a force of constabulary, and carry out works of irrigation, at their own cost. Trials for treason, rebellion, murder, and robbery will be conducted under Russian laws. The extension of the Transcaucasian Railroad from Kizil Arvat to Askabad was announced by Prince Doudounoff Korsakoff when he visited Central Asia. Askabad is 880 miles from Herat, 194 miles nearer than Quetta, the terminal point of the English strategic railroad.

 Relation with England.—The voluntary submission of the Merv Turcomans in the spring excited the susceptibilities of the English. The Tories declared their fears and suspicions, and the old controversy over the Afghan policy of
Review between him and the Presidents of Guatemala and Honduras at Montaguay, on the western frontier of Guatemala, on the subject of relations.

The condition of the finances is as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
<th>Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1881</td>
<td>$3,008,000</td>
<td>$2,507,000</td>
</tr>
<tr>
<td>1882</td>
<td>$4,042,260</td>
<td>$4,410,454</td>
</tr>
<tr>
<td>1883</td>
<td>$4,081,211</td>
<td>$4,940,204</td>
</tr>
</tbody>
</table>

Details of income and outlay in 1883:

- Revenue:
  - Customs: $1,455,300
  - Powder monopolies: 1,004,600
  - Agriculture: 400,000
  - Ice and telegraphs: 20,000
  - Total: $3,120,100

- Expenditure:
  - President: $15,000
  - Government: 143,200
  - Justice and Public Instruction: 192,700
  - Interior and Finance: 1,260,100
  - War and Navy: 580,100
  - Pensions: 1,750,000
  - Total: $3,092,000

The low price of coffee and indigo, the chief exports of the republic, caused a serious fall in the revenues, compelling economy and the exercise of the greatest vigilance on the part of the government to prevent smuggling. Still, the scarcity of specie became so acute in January, 1885, several merchants had to suspend payment. Simultaneously, the Mica scandal occurred in La Union, where 1 customs employés were cashiered for engaging in a smuggling operation. Upward of 3,000 gold pieces were passed free in September, a new bank was founded, the Anglo-Salvadorino, with a capital of 100 in shares of $20; $200,000 to be paid on subscription. The President of the Republic and San Salvador and Santa Elena districts, on the federal sub-treasury, on the security of the latter, the amount of 3,000 shares of the Union Bank lowered to 9 per cent., thus facilitating transactions in coffee then being gathered. The government had meanwhile decreed the gauging of an export duty on the latter of 12½ per quintal of 100 pounds.

A project was suggested to Salvador, from Costa Rica, to abolish all inter-American communication at the expense of Costa Rica and Nicaragua, by mutually collected by the remaining states being 4 per cent.

A new draft, decreed July 31, was to the effect, dating from Nov. 1, 1884, all goods shipped by steamer, and from Jan. 1, 1885, all arriving by sailing-vessels, were to pay 15 per cent. ad valorem, 35 per cent. payable in cash at the port of destination, and 10 per cent. in national bank notes.

An association was being formed in summer, through the initiative of Don Ramon Paez, for the cultivation of textile plants, such as the pita, piluela, and piña de raton.

According to the details of statistical research made by order of the Government, there are in the vicinity of the towns of Comasagua, Chiltinapan, Jicala, Jayague, Teotepeque, Tepecoyo, and Tamanique altogether 235 planters engaged in gathering balsam, employing 812 gatherers, the number of balsam-yielding trees being 12,096, producing, in 1884, 12,000 pounds of balsam. Steps had been taken to place the indigo industry on a better footing, and introduce improved methods of treatment. The Minister of Public Works has addressed the stock-farmers of Salvador, in order to concert with them the best means of introducing approved breeds of cattle. To promote the agricultural interests of the country, the Government assumed the publication of the "Boletin de Agricultura" in May, 1884. The agricultural districts last year again suffered severely from the ravages of grasshoppers.

Communications.—The first line of railway, from the port of Acajutla to Sonsonate, was opened in July, 1885. The line from the latter place to Santa, the port of La Libertad, is being built, and, on September 22, the section from Sonsonate to Aruena was inaugurated amid great festivities. There were in operation in 1881 altogether 700 leagues of telegraph, with forty-eight offices. The "Diario Oficial," of June 18, published particulars of a contract embracing seventeen articles, stipulating the following agreement between the Government of Salvador and the Kosmos line of Hamburg ocean steamers: The German company engages to place on the line eight steamers of at least 1,500 tons capacity, which are to touch at ports in the republic, in touch with them to touch between June and December, and the remaining five between January and November. The steamer of the steamer is to make the trip direct from Hamburg, only touching in England to load cotton goods, etc. The freight to not to exceed £4 10s. per ton on valuable goods, and £3 10s. on common goods. Of the new seven steamers four will us as usual call at South American ports, and three establish communication between Central America and Valparaiso in connection with other steamers of the company keeping up communication with Europe. It is to remain optional with the company to suspend the June to December trip in the event of there not being freight enough; but the company binds itself to dispatch the other five steamers, even if but partially loaded. The company furthermore engages to reserve 800 tons for the export of Salvadorian products, taking coffee for Havre, London, Hamburg, Bremen, and Valparaiso, at £4 10s. per ton for Europe, and £3 for Valparaiso, with a schedule of proportionate rates for sugar, hides, coconut, coffee, tobacco, etc.; the steamers, each trip are bound to call at Acajutla and La Libertad; at La Union only
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The trade is shown by the difficulty that boards of health meet with in having their requirements carried out, and undoubtedly if the examinations of plumbers that apply for registration were rigid, a very large proportion of the plumbing craft would either give up business or go to school and learn their trade properly. Nevertheless, the apprenticeship problem still remains unsolved. Employers are loath to bind boys as apprentices, because they do not want the trouble of teaching them, and because there is no security that they will stay with them long enough to repay the labor. Again, formal instruction is needed in those principles of chemistry and physics that underlie sanitary drainage, and this can not be acquired in a shop. There is no time for such instruction during active work, and there is no one who is qualified, or whose business it is, to give such training. Technical schools must therefore be relied upon. In several institutions, courses of instruction in sanitary plumbing are now supplied, notably at the New York Trade Schools in Sixty-first Street and First Avenue, founded by R. T. Aechmuth, and in similar institutions in Philadelphia and Chicago. There is also an advanced course in sanitary engineering at the Carnegie College School of Mines; but this is intended for professional engineers. As in most other trades, the plumber needs thorough training in the principles of his calling, and to have his standard of capacity raised and his position dignified. Despite the substitution of machine for hand labor, the plumbers' work must always remain a handcraft and can never sink to a mere mechanism. Individual skill and judgment are constantly demanded, and, while the mass of the trade exhibit a low order of intelligence, the skilled plumbers have no superiors among artisans for intelligence, excepting possibly among machinists.

Recent Progress in Plumbing.—In none of the applied arts have greater or more rapid changes taken place than in house-plumbing.

Up to quite recent years, very few towns were provided with drainage. The arrangements were of the most primitive kind. Erasmus's description of English domestic life in the sixteenth century shows an utter neglect of sanitary considerations, while the ravages of the black-death and other epidemics were undoubtedly due to the universal disregard of sanitary laws. The old tradition, that every cess-pool had a familiar spirit that destroyed people living near by, showed the existence and the potency for evil of what is now called sewer-gas; but it was not until the nature and composition of the gases produced from decomposing filth were understood that it was possible to provide safeguards against them. Even then, with the means of prevention at hand, it was years before measures of relief were formulated; pestilence was considered providential, and was met with prayer. Lord Palmerston's blunt refusal to appoint a fast-day when England was threatened with the cholera, and advising sanitary precautions instead, seemed almost sacrilegious to many people. The condition of the prisons, hospitals, and lunatic asylums, as revealed by John Howard and Elizabeth Fry, showed the dense ignorance and apathy of the public regarding preventive medicine. The first practical sanitarians, in the modern sense, were medical men or civil engineers, like Mr. Chadwick, Dr. Richardson, and Sir Robert Rawlinson, in England, whose chief thought was how to provide drainage and a pure water-supply for cities and towns, and to improve the public health in general. The Crimean War gave great impetus to their labors, which were still more aided by the death of Prince Albert and the serious illness of the Prince of Wales, both on account of exposure to foul cess-pool emanations. These two startling occurrences raised public attention to the consideration of household sanitation, and the cry "Look to your drains!" became proverbial.

The gist of modern plumbing practice in the United States dates back scarcely more than twenty years. Machine-made lead pipes and traps became common about 1840; cast-iron drain-pipe came into general use a few years later. Soil-pipes had been ventilated previous to 1875, but the practice did not become general until about 1880. Separate trapping of each fixture independently followed. The publication of the "Plumbing Code of the New York Board of Health," which was compiled in consultation with some of the most experienced engineers and plumbers throughout the country, had the effect of crystallizing opinion as to the essentials of good plumbing; and while some minor modifications have been made in these rules, they may be taken to-day as the standard of good practice, and their influence has been wide-spread.

As a matter of history, and to show the progress that has been made in the past few years, the accompanying plan of house-drainage, issued by the New York Board of Health in 1878, is interesting. The defects in this plan are readily seen. The main drain is carried underground, instead of being exposed to view along the cellar-wall. It has little if any pitch, and would be liable to choke up with grease. There is a trap to disconnect it from the sewer, but no air-inlet to prevent confined air and assist ventilation. Furthermore, several of the fixtures are placed too far from the waste-pipe (notably the wash-traps), whose running-trap would certainly siphon, while its contents would force foul air up into the bowl of the servants' water-closet. The horizontal waste-pipes have no fall. The two basins have no traps, but depend on the bath-trap, which would not resist siphonage, while the discharge of any of the fixtures on the upper floor would siphon the traps of the second story water-closet. Yet this plan was officially promulgated only seven years ago as exhibiting "all
The earliest water-pipes were made of earthenware, or logs of wood; but, as they could not sustain much pressure, lead was employed, both for conveying water from aqueducts to houses and for the mains also. In Rome some street-mains were eight inches or more in diameter. These pipes were not circular, but usually pear-shaped, and were made by bending sheet-lead, usually in ten-foot lengths, so as to bring the edges together, and soldering them; sometimes with the addition of a plain strip of lead or a cap, to make a tight joint. It does not appear that the ancients understood how to join lead by burning. Their sheet-lead was very thick, and specimens that have been preserved show no signs of wear. Cast-lead pipes were also used by the ancients, and were circular in section. They usually had the name of the reigning emperor cast upon them if for public use, while those found in private dwellings bore the manufacturer’s name, in the name of the house-owner.

The quantity of lead used by the Romans for plumbing was enormous, as may be inferred from the statement that 18,594 one-inch lead service-pipes drew water from a single aqueduct. Not only were pipes and tanks made of lead, but it was employed for pump-barrels, cocks, and everything connected with their water-supply, except the large shut-off bronze valves in the street-mains. Archimedes, 2,100 years ago, used lead pipes to distribute water on board a large vessel that he built for Hiero, King of Syracuse, the water being forced through the pipes by means of pumps. Lead plates, cast in sand, have been used for many thousand years, both for roofing and for retaining earth and water in the hugging gardens of Babylon and other great cities of the East.

In Oriental countries the practice of using lead for roofing still continues.

Traps.—There are many kinds of traps, good and bad. The majority are too small and not so placed as to give a free flow of water between them and the basin or other fixture, which becomes coated with slime. Many other traps are of bad form, and either siphon themselves when discharged or are siphoned when an adjoining fixture is emptied. The ordinary S-trap is as good as any, but even this should be ventilated. The different forms of D-traps are merely small cess-pools, and accumulate foulness. Large traps are always objectionable, as they are never looked after or cleaned out. If housekeepers would abandon their illusions on the subject of traps, and pay more heed to the defects of the ordinary foul pan water-closet, they would be aiming in the right direction.

Supply-Pipes.—According to Prof. W. Ripley Nichols, who has given special attention to the effect of water on different kinds of metals, the use of lead service-pipes for the household, while generally unobjectionable in places furnished with a public supply, should be avoided where the water is drawn from a well. The
alternate exposure of the metal to air and water, by the change of level in the contents of the wall, often occasions rapid corrosion. As a substitute for lead in such situations, block-tin pipe presents the most advantages, being little subject to corrosion and harmless in most of its combinations, even if chemical action should take place. Next to this, tin-lined pipe, if properly made and put together, is most serviceable. Brass pipes, which might be used as suction-pipes, but rarely are, are probably acted upon by the water; but it is uncertain whether the corrosion would, with most waters, injure to an appreciable extent the quality of that which passed through it. Galvanized iron pipe, though cheap, is not durable, the zinc coating being soon corroded so as to expose the iron to rust, while the dissolved particles of zinc are carried away in the water and injure its quality, although it is doubtful whether they are absolutely poisonous. Enamelled iron pipes, as found in the market, are quite as durable as the galvanized ones, and impart nothing to the water worse than a slight flavor of coal-tar, which comes from some of them while new. In Germany wrought-iron pipes, coated with magnetic oxide by the Bower-Barff process, have recently been put in for service-pipes; and if they prove durable, they would seem to be the best yet introduced.

Modern Improvements.—In ordinary dwellings these are less common in Great Britain than in the United States. Baths with hot and cold waters, found in most American town houses, are there luxuries for the few. Sewer-gus is, therefore, not so prevalent abroad as in unventilated cess-pools and broken drains leaching into the soil. At the same time lead, which has always been employed abroad as a material for soil-pipes, is easily corroded by gases, or injured by the gnawing of rats, or other causes, so that harmful consequences to life and health have resulted. In 1878 Dr. Andrew Fergus, of Glasgow, first publicly drew attention to the liability of lead soil-pipe to be thus injured, and exhibited specimens of such corruptions. As a protection against this contingency, the plan was generally adopted of extending all soil-pipes upward through the roofs of buildings and leaving the ends open to the outer air, so as to give the foul gases free vent. This may be called the first and most important step of progress in modern plumbing; and while in this country lead soil-pipe is no longer used, cast-iron having been substituted, the same precaution is still taken and is made obligatory wherever laws regulating plumbing are enforced. At first these vent-pipes were made very small, it being assumed that a slight opening would permit the foul gases to escape. Even now, many plumbers are content to employ a half- or three-quarter-inch vent-pipe, when it is manifest that the friction, particularly if there are many bends, would be so great as to render it almost useless.

Gas-pipe is still employed for this purpose, though it is apt to be choked by residue from the moisture rising from the house-flues. This water, when condensed, is liable to freeze and to close the end of the vent-pipe, so that plumbers and engineers have gradually increased the size of the "stanchi-pipe" and have made it of the full area of the soil-pipe, and in the best practice the upper end is shaped so as to be a fourth or fifth greater. Furthermore, the end, instead of being closed by an open form of cowel or cap, under the premises was, lessening the stench or keeping out rain, snow or other obstacles, is now left open, the only barrier being a fine wire strainer to prevent birds from nesting in the pipe.

The second step of improvement was in the direction of trapping fixtures. At first it was thought sufficient to place a single trap at each water-closet, and to connect baths, basins, deep sinks, and other adjacent fixtures with this one trap. But it was found that foul odour was evolved from the central trap and passed through the unguarded outlets, while in cases of the building settling, or the waste connections sagging, these pipes became "disconnected cess-pools," and in themselves sources of danger. The plan was, therefore, adopted of placing an independent trap upon each fixture, however small, and this is now the universal practice. As a further precaution, a trap was placed at the foot of each washbasin and waste-pipe, to disconnect the latter from the street-sewer, or this barrier would be located at the front wall of the house. These precautions, however, failed to give complete relief. While the sewer-air was excluded from the drainage system, the traps on the house-drain accumulated grease and other foul matter, and the whole lower end of the house-drainage system became filled with stagnant and foul air, which was liable, when displaced by the draft of any winter wind into it, to be forced out at some lower fixture. Again, the open soil-pipe at the top of the roof did not serve its intended purpose so long as there was no entrance of fresh air at all. An empty bottle will ventilate itself, however large the month may be; two openings are indispensable for perfect ventilation. The practice was therefore introduced of carrying an air-inlet from a point just inside of the trap on the main drain, either to the level of the ground outside of the house, or by an up-right pipe to the roof. A perfect circulation of air in the whole drainage system was thus obtained. The outer atmosphere being heavier than the drain-air, which was heated by steam from the kitchen-boiler and by the general warming apparatus of the house, there would be of necessity a constant draught in at the air-inlet, and thence along the house-drain and upward through the soil-pipe to the roof. Careful tests have shown that this action takes place continuously, excepting in damp, nasty weather. Even should the movement be
large fixture is discharged at the ground-level through sufficient fitness to cause a break in the general plumbing, the escaping drain- pipe, unless the soil-pipe is fastened with screws instead of nails, so as to be readily removed for inspection. A new difficulty remained: the exclusion of sewer-gas from the free ventilation of drains. For the most part, the pulling action of other traps near by or above them. A water-closet on an upper floor, its contents, in passing through the soil-pipe like the plunger of a vacuum pump, the air before and behind. These two events are certain to unseat traps connecting with the soil-pipe unless they are provided with proper precautions. This precaution is now active, and in addition to the roof, a back from the crown or bend of the pipe. Objection is made that these back air-pipes are liable to be choked with re or grease; but the general utility of their use is evident. The benefit is obtained from the action of each trap, and the action of air throughout the house. Without this, dead ends, which would invite corrosion, thus permit foul air to seep into the house. Where there are no traps or bath-rooms, it is not a small galvanized-iron flue through to the roof of the house, which is kept constantly burning, will not only ventilate the contribute toward drawing adjoining rooms. Vents—ventilating the soil-pipe independently, trap- rain from the sewer or cess- ing foot ventilation with back a trap as a security against be called the essentials of practice. But other and as have been effected, which the sanitary codes of New York. First among these is the xtra heavy material, such as double weight, tarred inside waste-pipes of proportionate size. The avoidance of can be properly laid under heavy. Secondly, the clog-plus semi-in a limited area, accessible away from the living portion of the dwelling. Third, the placing of pipes so as to be always open to view or easily accessible, drains being supported along cellar-walls instead of being buried underground, and all casings to other pipes being fastened with screws instead of nails, so as to be readily removed for inspection. Fourth, the insuring that every fixture and drain shall be kept clean by thorough flushing. This necessitates a separate closet for each water-closet and the preference of small drain-pipes, which will be cleansed by every discharge of the fixtures, rather than large pipes, which are seldom flushed, and hence remain constantly foul. Fifth, the absolute disconnection of refrigerating water-pipes, tank overflows, and safe-wastes from the house-drain, so that there is no possibility of their proving sources of contamination. Sixth, the employment of better fixtures, such as water-closets made all in one piece of porcelain, with no joints or complicated valves or other mechanism to get out of order, and baths, sinks, and other fixtures made of similar material. Besides the ordinary ventilation of traps and soil-pipes, it is now becoming common to provide special vents to remove foul air from the receivers of water-closets and also from below the seats of such fixtures. It is claimed that the serious drawbacks of pan water-closets are neutralized by the former device; but unless the vent-pipe is large and carried in the vicinity of a heated flue, it will not prove of any practical service. As ordinarily put in, it is worse than useless, as there will be no upward movement of air in it, but very often a down draught. This vent-pipe is usually three quarters of an inch in size, and is far too small to serve any purpose. There must be two openings for ventilation, and a fresh-air inlet must be provided. In the Hellyer water-closet a two-inch vent is taken from the receiver, and if carried to a hot flue will prove useful. In the Zane and Demarest closets a vent is taken from the compartment that contains the plunger. The mistake is constantly made of connecting such vents from water-closets and urinals into the air-pipe from the traps of fixtures, thus bringing the sewer into direct connection with the house side of the trap, and thus neutralizing the latter safeguard. To ventilate below the seat of a water-closet, an annular pipe of galvanized iron is used, as shown by Mr. Philbrick. This should not connect into the chimney, or a down draught may be created, as happened in one case where the occupants of a house sent word to a plumber that the water-closet was smoking. Hoppers are now made with a vent taken from between the bowl and the trap. This is a good arrangement, provided the pipe is heated in any way, so as to promote an upward current. In a New York hospital an attempt was made to ventilate the plumbing fixtures into a heated flue by creating a down draught through the soil-pipe, and along the main drain in the house.
purified by contact with a continuous current of fresh air, decomposes and throws off very offensive odors. Grease-traps on kitchen sinks are desirable adjuncts wherever the accumulation of grease is great, and where they are certain to receive proper attention and to be frequently cleansed; otherwise they are certain to become a nuisance and a possible source of offense. In large houses, hotels, or restaurants, they are very essential, and are a means of great saving in expense. A butler's pantry waste-pipe is more liable to choke with grease than a kitchen-sink drain, as the soapy water enters it at a lower temperature than that from the kitchen, which is drawn direct from the boiler; hence a large trap is preferable on butler's-pantry sinks. Grease is mostly found in pipes that receive kitchen-waste; the urine in soil-pipes destroys the grease, or prevents its formation.

Tests for Plumbing.—There are several forms of tests for plumbing when completed, or to detect the defects in existing works. In new buildings, after the drains are laid, the lower ends can be closed with a plug, and the pipes filled with water up to a given point, say to the basement-floor. This is allowed to remain for some time, and, if the water-level is maintained at the surface, it is taken as a proof that the joints are tight. Very hot water is used in such cases, and the test is found to be reliable. Under such a trial, a drain that is apparently securely laid with well-calked joints may leak at every length. Another test, having the same object in view, is to close all openings, both above and below, in the entire drainage system, and apply pressure from an air-pump, as is common in testing gas-fittings. A third test is made with smoke, which is forced into the pipes under pressure, by means of an aspirator. The vapor of burning sulphur is used for this purpose, and the presence of a leak will be quickly detected. A simpler and more common method, which is frequently employed to detect some new leaks, is to pour on

od of constructing these "soak-pits" out of boards or un cemented stone is tolerable. A leaching cess-pool is a source of danger; no matter how porous the soil may be, it is almost certain in time to become saturated, and will no longer take the sewage, while the foul odors will trate through the soil into adjacent dwellings. Cleaning them is expensive and annoying, even then the flint-coated sides evolve offensive and dangerous gases. Every such cess-pool should be as small as possible; it should be absolutely tight, thoroughly ventilated, and frequently emptied. The overflow should lead to a point where it can do no harm, even at the best, any cess-pool is a source of danger, and should be abolished if practicable.

No tight cess-pool will permanently resist the action of frost on the brickwork, while a lining of wood will rot at the joints. Such receptacles are built by country masons, who are not and the work is often done carelessly. In of drought, the most tightly cemented cess-pool will be apt to leak into the adjacent\n
Substitutes for Cess-pools.—The two most<br>considerable substitutes for cess-pools are the toilet closet and the sub-irrigation system. The former was employed in ancient times, and its chief features are recommended to the modern user by the Rev. Mr. Moule, an Englishman, and it has been extensively introduced with excellent results. Its simplicity, economy, and convenience are readily apparent. Its features are briefly as follows: A cemented box, which can be readily cleaned or removed, a supply of dry earth or sifted ashes, and a hand for an ordinary household system of which is daily deposited over the tents of the vault. The effect of the process is to decompose the material of the...
communities, there is chance of neglect and consequent risk to health, while the cost of injuring the fresh earth and removing the waste material becomes a burden. The dry-which system has been tried in certain seaside and other summer communities, and under competent supervision has proved successful. But settled communities the water-carriage system is by general consent considered more economical and safe. The popular impression that the waste products of a town or city are sufficient value to pay for their removal is a mistake, and the question of drainage must be considered from its sanitary aspect rather than with any hope of profit.

The second method of domestic drainage that is known as the sub-irrigation system, has been adopted to a considerable extent in the country, and on large scale for disposing of the sewage of towns and even cities abroad. This method consists in utilizing the absorbing powers of soil, in taking up liquid sewage, and also oxidizing powers of the atmosphere in destroying the products of fermentation. Instead of pouring them into basements into a pit, and permitting the ground to a point beyond absorption, the sewage is spread over a wide area means of small pipes carried just below the face of the ground, with their joints open permit the contents to leak freely into the while it is further absorbed by the roots by oxidizing by the air that penetrates interstices of the soil. A single acre will waste disposal of the waste products of an ordinary household. The vegetation growing on it will be benefited, and the cost of the arrangement will not greatly exceed that of building and constantly cleaning an ordinary cesspool.

Drain-pipes two inches in diameter are offered. They are laid so as to be easily inspected, and about once in three years they need to be taken up, cleansed of grease, and may accumulate at the joints, and relaid. Prime feature of this plan is, first to convey the drainage to a series of small siphons, and so as to collect the grease and to dissolve other solid materials, which are then by the automatic action of a siphon discharged in considerable volume, and the sewage distributed throughout the whole area of the branching drains. Otherwise, the discharge would be a mere dribble, and not extend throughout the pipes, and the area of soaking would be confined to a small section. The sub-irrigation system works best in a gravelly, porous soil. Where the ground is retentive, it is desirable to provide under-drainage. Mainly through the efforts of Col. George E. Waring, this system has been widely made known and extensively applied. In the neighborhood of Orange, N. about fifty houses are thus drained, while Lenox, Mass., and at the Sherburn (Mass.) ornamental, the system has been applied on a larger scale. So perfect is the purifying action of the soil, that it is said the foulest sewage will flow at the outer end of an irrigating pipe seemingly as pure as the best drinking-water.

Sewer-gas.—Ordinary sewer-air contains less oxygen than the atmosphere, as some of it combines with the carbon of putrefying organic matter to form carbon dioxide. The lowest amount of oxygen reported in sewer-air, upon analysis, was 17% parts in 100. The average amount of carbon dioxide was 2% to 100 parts. Sulphured hydrogen was found in inappreciable quantities, and some other gases of trifling amount. The proportion of nitrogen was about the same as in the atmosphere. Carbonic oxide is sometimes found in minute quantities, and is usually traced to leaky gas-mains (Gerhard). The ferry-boats at certain New York slips where sewers empties their contents have their copper bottoms blackened by the sulphured hydrogen. The silver tableware on ocean steamers whose wharves are in this vicinity is acted upon in a like manner, and silver door-plates have shown the same effects. Sewer-gas is exceedingly penetrating; it escapes readily through the smallest openings in walls and partitions. Marzies says, "I have known it to pass through floors and through chinks in two-foot walls." It will find out the minutest crevice in a pipe that will give it a chance of getting to the heat or open air. It will readily pass through breaks in cellar ceilings where plumbing pipes are carried. Pattenkofer's experiments with ground-air show that neither brick, stone, nor concrete is a barrier to gases under hoary pressure.

The following are among the chief sources of sewer-gas:

1. Foul and unventilated sewers, usually badly constructed with rough interior surfaces, and made too large for proper flushing except in heavy rain-storms, so that the ordinary flow of sewage covers only a small portion of the surface, and the remainder becomes coated with slime, which decomposes and throws off vast volumes of foul air. A cubic ton of sewage, it is estimated, creates its own bulk of sewer-gas every twenty-four hours.

2. Tightly sealed cess-pools carefully hidden underground and filled to overflowing with putrefying filth, whose gases have no means of escape except through the house-drains connecting directly with living-rooms.

3. Small and clean sewers, which when tide-locked or gorged with rain from their deficient size, as in Brooklyn, force foul gases into houses.

4. Defective drains under or near houses, which have not proper flush or pitch, and hence become mere elongated cess-pools.

5. Soil-pipes full of sand-holes, or lead swill pipes honeycombed by corrosion or eaten by rats.

6. Bad workmanship, as making joints with cement or putty, instead of calcined molten lead.
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7. Broken drains caused by houses settling, or rats undermining the ground below them.
8. Traps evaporated from neglect or non-use, or from their nearness to furnace-flues or steam-colls.
9. Traps that are siphoned by the pulling action of other fixtures when discharged, and are thus left open to the sewer.
10. Pan water-closets, slop-sinks, and other fixtures that become foul for lack of sufficient flush and ventilation, and are in close rooms or closets without sunlight or air.

A well-constructed and properly laid sewer, if frequently flushed, and if it has a free outlet, is not productive of foul gases to any appreciable extent, especially if it is ventilated by perforated man-holes at frequent intervals. There is little perceptible odor from openings in such sewers, and the workmen employed in them do not complain of sickness. But the case is different with sewers that are too large or have not enough pitch, that are not frequently flushed, or whose outlet is tide-locked, so that they become clogged and are mere gasometers and reservoirs of liquid filth, constantly undergoing decomposition and creating foul gasses, which are inevitably drawn up into our overheated houses, carrying disease and death into every occupied room. In a city in central New York, a quantity of benzine was accidentally discharged into a sewer, and as a result every dwelling in the vicinity was filled with the odor. A similar test would have a like result in most large cities, both in this country and abroad, and might awaken people to the need both of disconnecting their houses from the sewer, and of having a better quality of plumbing. In many parts of New York, when the tide presses against the sewer outlets, an offensive odor resembling cabbage-water is everywhere perceptible. Prof. Chandler well says that it would be a blessing if sewer-gas stank, so that its presence would be noticeable when it seeped from an entrance, Né by Nature usually raises some danger-signal to warn people of the presence of evil; but in the case of sewer-gas there is often no sign to make its proximity known.

Col. Waring denies the popular theory that New York has unequaled advantages in being swept on each side by a great river. He asserts that only an insignificant portion of its sewage ever crosses the bar at Sandy Hook; but the main body of it is distributed by the tide from Sing Sing and Throg’s Neck to Coney Island, poisoning the air, strewing the shores, being consumed by fishes, and contaminating the air. Unless Manhattan Island can slip from its moorings and float out to sea twenty or thirty miles, this condition of things must continue until a better one is devised. The sewers of Boston and Philadelphia are no better than those of New York. Col. Waring describes them as being “highest at the lower end, lowest in the middle, biggest at the little end, receiving branch sewers from below, and discharging at their tops; elongated casi half filled with reeking filth, peoples with and invaded by every tide; huge gas manufacturing day and night a deadly poison, ever seeking to invade the house their course; reservoirs of liquid filth oozing through the defective joints, a looting the very earth upon which it stands.”

His report to the National Board of the sewers of Philadelphia is a sad presentation of their defects.

Size of sewers—There is a strong is at present in favor of reducing the sizes of engines and substituting those that are small and well flushed in place of the monsters that have been popular with engineers found in most of our large cities. The tunnels soon become foul, and on account of their size are rarely flushed except during usually heavy storms. The condition of Philadelphia sewers is a striking case upon the error of building them in such parts. The example of Memphis, where the entire house-drainage is conveyed through twelve-inch sewers, has exerted a strong and attracting interest. In Baltimore, Cleveland, Newport, New Orleans, and other cities, smaller sewers are in use, and on economical as well as sanitary grounds, they are to be recommended. Sir Rawlinson mentions as a significant fact in the great revolution in sanitary condition, that so late as 1850 three eminent engineers recommended for the city of that no main sewer should be of less than would allow a man to enter; house sewers were to be less than twelve inches in diameter, and a four-inch drain was considered intolerable. They recommended thearched section as the easiest to cleanse by labor. Now no engineer or sanitary officer would tolerate such large sewers. The Fleet Street sewer in London is 8 inches by 11 feet 7 inches; the Main sewer in Philadelphia is 20 feet in diameter; the largest sewer in Paris is 18 feet wide, by 17 feet high. The Parisian sewers are built so as to be capable of constant and inspection. They also serve to convey water, gas-pipes, and telegraph-wire. They are not used to receive the whole of the city. Since 1855 their total extent has risen from 73 to 371 miles, which is less than those of New York. A large portion of house-drainage is not emptied into the Notwithstanding their reported perfect Paris sewers have not saved that c}

noise some exhalations, which have cause
made necessary an enlargement system.

Sanitary...—It is the duty of the public ventilate the sewers, without a house connections. In Frank-

samburg, and Danzis, soil-pipes ventilators; but there the house-

perly designed and securely laid, supervision. Where perforated

pipes dilute and render harmless the fault may be traced to the nber of these vents, or the need-

tle of the sewer due to deficient access, improper form, rough

drainage gradients, badly devised branch inlets, favoring deposit,

on the part of the authorities, encies may be corrected.

ds have been suggested for venti-

but no thoroughly satisfactory adopted, except to supply per-

holes at frequent intervals along id to allow the latter to ventilate Every little while some wiseacre

suggesed another entirely method of ventilating sewers them with fires in furnaces, fac-

large buildings, so as to destroy

ailments of the sewer-air. It has

posed to have large lamps for

reets, which could be connected

the sewers, and thus the foul

be consumed. Another ingeni-

ul has proposed to destroy these

tricity. The radical difficulty

methods is the disproportion be-

proposed and the vast area of

ich cover miles of space. Such

do not draw out the foul gases from

need to be multiplied in orde to produce any effect, as the

one part of the sewers would

ratized by the down current

holes, catch-basins, and other the

the same planation has yet been found. Some

ceed in one place, and some in

inal trays in man-holes check

rafts by special chimneys

ent, a chimney must be placed

corner, and a special fire main

at cost. Gas-burners are a still

vice for creating a draught. If

poles are ventilated, the vol-

gas will be small within them; wage is carried off at once to the

will be less chance of decompos

volume of gas exhaled. To a end, sewers must be well con-

smooth interior surfaces and true

italities for preventing or re-

its and for free ventilation, so

will be dissipated rapidly into

ventilating sewer-air it may be

tically harmless.

Pressure of Sewer-Gas—There has been considerable discussion as to whether pressure is ex-

erted by the gases from sewers. Prof. Chand-

der failed to discover any evidence of such pres-

ure in siphon-gauges that were placed upon

plumbing fixtures in houses and at the School of

ines. But it is a common experience with

bers to find very strong pressure in pipes

necting with sewers. If the temperature of the outer atmosphere is lower than that of

the sewer, as in winter, there will be a strong inverad current of air; but when the conditions

temperature are reversed, the outward pres-

ure will often be great enough to extinguish a

candle. Temporary wooden plugs at the ends of

oil-pipes have been blown out with great

force during heavy rain-storms. When sewers

become gorged by storms—especially in local-

ities like Brooklyn, where there is an enormous

drainage area to be provided for—the foul air

is forced out in every direction. James C.

Baylis mentions seeing a miniature waterfall

over a perforated man-hole in a Brooklyn

street where the sewer was too small, and

where the belching gases blew the water up in

a continual spray. In Washington a sewer-

arch was broken by the pressure of rain-water,

causing great damage. In many localities it is

ecessary to supply security against back pres-

ure from sewers that are tide-locked, or become

gorged with rain by placing valves upon house

connections. Several forms of valve can be

used for this purpose. They can be inserted

just as a section of pipe can be put in. The

best way is to insert such a valve in the line to a

drain as near the sewer as it can be accessible

for opening and repair. The old form of valve

intended to be placed at the end of a drain is

inadmissible.

The effect of steam in sewers is becoming an

important consideration. Many business estab-

ishments that employ steam-power discharge

their waste steam into the sewers, though this is

forbidden by law. Decomposition is thereby

hasted, and the sediments of the sewer become
cast with an offensive slime, which can not be

ashed off excepting during heavy

falls. If the sewer is of brick, the mortar

is decomposed and an exit made for foul

gases under such pressure that they force their

ways into basements and cellars. The lead joints

of house-plumbing connections are often blown

by the steam pressure, which will also force

traps or dry out their contents. In a large dry-

goods establishment in Broadway, where waste

steam discharged into the soil-pipe, the pressure

forced several joints, so that part of the build-

ing was flooded and damaged to the extent of

several thousand dollars. Explosions of illumi-

nating gas from leaky mains frequently occur

in sewers, the gas saturating the adjacent soil

and readily finding its way into the sewer. Sev-

eral such explosions occurred during the con-

struction of steam-heating mains in New York.

In that city the waste of illuminating gas from

leaks is from 6 to 10 per cent. A peculiar gassy
ing was done to protect dwellings. It was not until modern improvements came into general use, and our great cities were closely built up, that the effect of cess-pool air became noteworthy. Originally the amount of plumbing in ordinary dwellings was small, consisting of a pump, a cess-pool, and a cistern for holding rain-water. Later, sinks, baths, and boilers were introduced; and finally water-closets and basins came into vogue. As population increased and dwellings thickened, the old cess-pools, which were roomy and well ventilated, were replaced by smaller and tightly sealed receptacles, with the ostrich-like idea that if hidden below the ground their contents could do no harm. It was also found less convenient to empty and clean these receptacles, and hence they were frequently neglected. Public sewers were slowly introduced into New York. Up to 1849 only 72 miles were laid, against 360 miles now. Many of these sewers were merely rough drains, uncemented and open, and intended solely to carry off kitchen-waste and soiled water. When converted to receive sewage, they rapidly polluted the soil, and especially when tide-locked became mere elongated cess-pools and gasometers for creating foul odors. Under “Singe” rule, many of the sewers of New York were constructed of inferior material and imperfectly laid, with not enough grade and insufficient flush. This condition of things was supplemented by the work of the contract builder, by whom a large portion of the houses in our principal cities have been constructed. The plumbing work, being mainly hidden from view, invited these unscrupulous builders to use the cheapest material and inferior workmanship. Hence, in the average house we find ill-laid drains, cheap fixtures, light-weight waste-pipes full of cracks and holes, and with no barrier to prevent the sewer-air from finding direct entrance into living-rooms. It is not surprising that zymotic diseases, due to sanitary defects, count so largely in the mortality returns. Millions of gallons of wa-

are so often the source of distaste that so large a proportion of the people from zymotic disease is found amid or more or less unsanitary, shows some relation between these conditions and the disease malady.

A house may be full of defective plumbing and yet have such ample area and location of air that its few inmates are not harmed, as the poison loses its potency. Yet the same evil conditions in a tenement or boarding-house, fracture of dwellings of the better class, filled with holstered furniture, with the windows carefully closed to exclude dust, and the sphere kept at a high temperature, may produce very different results. The greater the number of occupants in such houses, with the plumbing fixtures, tends to multiply the impurity and contagion, and to cause breaks of diphtheria and scarlet fever which might never visit a more roomier dwelling.

Dr. Fordyce Barker, President of the New York Academy of Medicine, in an address before that body, said, “None but a medical man can know how general this poison is; it is positively it explains much of the disease which you call upon to treat, and the deaths which follow.” Dr. E. E. Clarke states that “sewer-gas in dwellings is the most prolific source of disease in every house.” Dr. Willard Parker, of Boston, says: “A vast amount of sickness has its influence from sewer-gas by defective plumbing into houses, serious and often fatal affections, all so originating, are aggravated and spread by the same cause.” Within three streets of Park, the newly built homes of Connaught, supposed to be per-
SANITARY SCIENCE.

re in "a defective and disgraceful con-
remarks that every physician appreci-
difference between the case of simple-
and a case of pneumonia compli-
malarial poisoning. The tendency of-
ly to recovery; the other frequently-
 fatal. Dr. Willard Parker re-
 hast if two scarlet-fever patients are-
hair in a house that has pure air,
other where sewer-gases abound, it-
bound that the most intelligent treat-
 the patient, while the other may recover-
 good care and with little medicine.
 of sewer-gas in poisoning food,
 especially water and milk, require-
reference. Many epidemics of typhoid-
ave been traced to this source. In han-
homes, receptacles for food are ar-
 in such a faustful manner as to expose-
stents to cess-pool and drain air, with-
tons results. It is of the utmost im-
1 that refrigerators should be absolute-
from all chance of such contamination.
he slime from melted ice, if allowed to-
 in waste-pipes or traps connected with-
ators, will alone cause very offensive-

Milk is especially susceptible to pollu-
d the utmost care should be taken with-
 where it is stored. Ool. Waring-
as a case where four persons were taken-
 single day in one household, through-
ence of sewer-gas, and he declares that-
 sanitary defects are found in the finest-
 in houses where certain forms of-
 prevail, foul odors from sewers or-
 are usually prevalent, while in many-
1 the relation between the defects and-
 ness are positive and undeniable. Fur-
 1. when these defects are corrected, no-
 complaints of sickness were made.
re streets in New York city that are-
 is for their defective sewers. Some-
 are in the same districts where-
ers were laid under "Ring" rule in-
1 cent manner; others, in the business-
 of the city, consist of rough flat stone-
1 stend originally to carry off surface-
 with little if any fall and no flush, so-
1 y are constantly foul and throwing off-
1 ase into the neighboring office-build-
1 these locations malarial sickness con-
 prevails. Hundreds of families are to-
 among sanitary conditions that they-
 derstand are not wholesome, yet they-
 able to improve, them because of the apa-
 reed of landlords. Hence, they continue-
1 state of anxiety and dread, vain-
1 to bar out the subtle foe with such-
 xpedients as stopping up basin over-
1 rinkling chloride of lime, carbolic acid,
1 er disinfectants about plumbing fix-
1 d eagerly buying every cheap device-
1 ing sewer-gas. In one case, three-
1 ters occupied a studio together near-
1 Square. Their living-rooms were in-
the same building, and contained the foulest-
 plumbing fixtures, which their constant care-
 could not keep sweet and wholesome. All-
 three were attacked with symptoms of blood-
 poisoning: one died insane; a second lingered-
 for months and also died; and the third is a-
 confirmed invalid. In another instance, a-
 young married couple, returning from their-
 wedding-tour full of health and spirits, leased-
 a charming house in a suburban city. Almost-
 immediately the health of the bride declined,
 and after weeks of illness it was discovered-
 that the house connected directly with a foul-
 sewer and contained scarcely a single trap. In-
 Brooklyn, another young couple leased rooms-
 in an elegant boarding-house on the Heights,
 and, after they had been there a few months,
 the whole household was attacked with ma-
 larial symptoms, due, as examination showed, to-
 an old lead soil-pipe eaten through by sewer-
 gas. Both husband and wife have since been-
 ill for months, and the health of the latter is-
 shattered. Such cases might be multiplied-
 indefinitely, yet there is no reason for their oc-
 currence, if the public were sufficiently enlight-

Safeguards.—In view of the risks to which-
 householders are exposed from having their-
 drains directly connecting with the sewer, the-
 natural conclusion would be, to shut off the-
 latter from the former by a suitable form of-
 trap. This plan is approved by the best engi-
 neering authorities, both in this country and-
 abroad, and is coming into general use. It is-
 officially enforced by the New York and Broo-
 lynn Boards of Health in all new buildings.
 Among the sanitary authorities that favor-
 such a disconnecting trap are the eminent-
 English engineers, Mr. Rawlinson, Baldwin-
 Latham, Bailey Denton, Rogers Field, Dr.-
 Parkes, author of the standard work on hy-
 giene, Prof. Henry Robinson, S. S. Hellyer,
 Prof. Corefield, and Prof. Flesning Jenkins;
 Edward S. Pilcher, and George E. Waring, Prof. C. F. Chandler, Dr.
 John S. Billings, W. Paul Gerhard, and Ru-
 dolph Hering, together with most intelligent-
 plumbers, are among its advocates. The argu-
 ments advanced in opposition to such a trap-
 are based upon the supposition that sewers are-
 clean, well flushed and ventilated, and-
 free from dangerous gases. It is there-
 fore assumed that it would be an advantage to-
 allow the sewer to breathe through the house-
 drains; but, as has been shown, sewers as a-
 rule are far from clean, and are forcing-
 houses for creating impure air, and, while the-
 plumbing in most dwellings is so defective as-
 to afford a ready escape for such gases into-
 living-rooms, it seems desirable to exclude-
 them as far as possible from the house-drains.
 Recent experiments by a German physicist-
 show that the usual direction of the currents-
 of air in sewers is toward their outlet, or par-
allel with the flow of their contents; and it-
 has therefore been argued that the risk of an-
Inward current into houses through their connections is small. But Mr. Lindale, engineer of the Frankfort sewers, says he found that there was a strong outward current at the upper ends of sewers. This is a further argument in favor of a trap to disconnect dwellings from sewers.

Several methods and devices have been proposed to exclude sewer-gas, which, by persistent advertising and the injurious condemnation of physicians and others, have gained popular acceptance. All arrangements that depend upon ordinary fires, which are liable to go out at times, or upon chimney-flues, as a security against sewer-gas, are to be distrusted. Again, all mechanical devices for the same end, as a substitute for water-seal traps, are objectionable. No valve can be depended on to keep its seat so as to be gas-tight, and such devices have universally failed in practice. There are several forms of non-siphoning traps, such as the Connolly, Bowes, or Cuddell, which may be recommended, but the water-seal trap, with suitable ventilation, must still be held superior to all other devices.

Utility of Traps.—Wide-spread alarm and uncertainty have been created in the popular mind by the experiments of Dr. Andrew Ferguson, of Glasgow, showing the possibility of absorption and transmission of gases through a water-seal. Ammonia, when brought in contact with an ordinary water-trap, produced an alkaline reaction at the opposite side in fifteen minutes. Other gases were transmitted in a like manner, and produced their chemical effects in from one to four hours. These experiments, however, were made in a laboratory with pure gases and unventilated traps. Later tests by Dr. Carmichael, made with sewer-gases obtained from ordinary soil-pipes and drains, showed that the latter are of less potency than the gases used by Dr. Ferguson, especially when diluted by ventilating the soil-pipe through the roof, and that the amount of gas passed through the water-seal is trifling and probably harmless. Furthermore, the germs of disease, which are most to be dreaded, do not pass the barrier so far. The fact that the water-seal is depended upon in all chemical laboratories and gas-works to prevent leakage, is a positive proof of its trustworthiness, and for all practical purposes an ordinary water-trap may be depended upon as an absolute security against sewer-air.

Flushing.—It has been frequently suggested that it would be advantageous to flush out drains and traps by means of a flush-tank filled with clean water, which would discharge at regular intervals. Col. Waring has adopted this plan at Memphis, where the sewers are periodically scoured throughout their entire length by the discharge of eighty Field flush-tanks. Such an arrangement is not feasible in dwellings, but the desired result may be obtained by using the improved water-closets, which discharge several gallons of water at each using, and by rain leaders. A constant and constant water-supply for flushing sewers, drains, and plumbing fixtures, is a prime necessity to prevent the entrance of sewer-gas into dwellings. Half the trouble in New York is the lack of pressure to raise water to the upper floors of houses during a large part of the day. This permits the fouling of pipes and fixtures, and the accumulation of matter that should be promptly carried off. An adequate water-supply is, therefore, required in every city, and in England it is essential by law that no water-closet should be flushed directly from the supply-pipes, but from a special cistern. If possible, avoid the chance of polluting the drinking supply in case of a defective valve, or when the supply is intermittent. Where, as in New York city, the water will not rise above the second story during the day, one constantly finds foul water-closets, without any means of flushing, and with the valves open, so that poisonous gasses are drawn into the supply pipes. More than one case of typhoid fever has been traced to this source.

Isolation.—Too little thought is given to the proper isolation of plumbing fixtures in dwellings. It is common to find basins in second-story rooms without traps, or connecting into the trap of a foul water-closet, so that the vile stenches find free vent into these rooms. The location of bath-rooms and water-closets is much to do with preventing freezing of pipes and annoying injuries from flooding due to bursted pipes. In too many cases the least convenient room is allotted for these sanitary conveniences, because a more suitable room can be put to a more useful purpose. All central bath-rooms, dependent upon shafts for light and air, are objectionable. Every such room should open direct to the outer air.

Another reason why sanitary appliances should, as far as possible, be isolated from the living-room is the management of the tenant. One of the strongest arguments in favor of modern plumbing over the old-fashioned out-door inconveniences is the avoidance of publicity and exposure to inclement weather, with the consequent sanitary considerations. An English architectural writer remarks upon this point: "The double object should be kept in view, of indicating where the necessary apartment is to be looked for, and at the same time planning it so that no one going to or coming from it need be supposed to be doing so." Care should be taken not to locate plumbing fixtures in dark corners. Sunshine invites attention to neatness, and is in itself the best of all disinfectants. In the White model tenements in Brooklyn, and in the Central Park apartment-houses, Dr. Hamilton's plan of isolation is carried out. In the Manhattan Eye and Ear Hospital, in Park Avenue, New York, the architect, Mr. C. C. Haight, has isolated most of the plumbing fixtures by placing them in a semi-octagonal addition in the rear of the building, six stories
high, the upper floor containing a tank. There are no horizontal pipes under floors, and all pipes are exposed on the walls, the water-supply pipes being of brass. The smoke-pipe from the boilers is carried up through a rectangular brick shaft, 81 by 81 inches, and the space around the smoke-stack is used as a hot-air duct to ventilate the water-closet rooms, which have each a large window. The soil- and ventilating-pipes are placed inside the shaft, to which easy access is provided by large iron doors, so that there is no possibility of foul odors entering the building. At the Hospital for the Insane at Poughkeepsie, in charge of Dr. Cleveland, all of the plumbing is concentrated in towers, isolated from the rest of the building, and so arranged as to insure absolute privacy and abundant light and air.

Besides avoiding risk to health, a great saving may be made by arranging plumbing in accordance with common sense. Too often baths, basins, or other fixtures are located merely to suit individual whims. If the occupant of a house happens to like his rooms arranged in a certain way, the plumbing must be put to suit. Hence, pipes are carried in all directions to form certain corners, with greatly increased damage to wood-work, etc., danger of leakage, and difficulties of access to make repairs.

Civic plumes endeavor to concentrate all their work as far as possible, and to carry pipes in perpendicular lines. Long horizontal connections and isolated fixtures are avoided, and thus a great saving in material is made, and the risk of injury from leaks reduced to a minimum.

The New York Board of Health, in their official plumbing regulations, advise placing the soil and other vertical pipes in a special shaft, between or adjacent to the water-closet and the bath-room, which will serve as a ventilating shaft for both; the shaft to be at least one and a half feet square, and to extend from the cellar to the roof, and be covered by a vented skylight. It should be accessible at any story, and have a strong grating at each floor to hang upon. Where space permits, this is a desirable arrangement.

The fears that have been excited by the decision that an ordinary water-trap will not arrest the passage of gases are not well founded. Water-traps are the sole reliance in chemical laboratories and in all gas-works; pure gas may pass through a water-seal during laboratory experiments, but pure gas is not found in plumbing pipes and drains, and Dr. Carmichael's experiments prove that sewer-gas will not pass through an ordinary water-seal.

The safeguards against sewer-gas being pointed out, the question arises, How are these remedies to be enforced? The public need first to be enlightened upon the subject, and hence boards of health and sanitary societies should prepare no pains to diffuse information adapted to popular comprehension. The newspaper press is always ready to second such efforts, if supplied with material. Above all, the family physician should make it his duty to understand and point out to his patients when sanitary defects exist in their homes, and in a general way how to remedy them. He need not necessarily be a practical plumber, nor a sanitary engineer, but he should not be ignorant of the work of either. He, above all others, has the most influence with the public, because he is believed to be disinterested, and his advice is received with confidence. The architect no less requires to give more attention to sanitary principles, and should strive to impress upon his clients their paramount importance as compared with taste in design and decoration. In Great Britain, within a few years, sanitary protective societies have been founded for the purpose of inspecting the premises of individual members and reporting upon their sanitary defects. The parent society was founded in Edinburgh in 1879 by Prof. Fleeming Jenkin, and like organizations have since been made in Glasgow and Liverpool, and recently in London under the presidency of Prof. Huxley. The Edinburgh society attained a membership of about two hundred. A fee of one guinea (five dollars) was charged for each house-inspection—a reasonable sum, considering the small amount of plumbing in ordinary houses in that city. The proportion of defects discovered was very great, but the average expense of remedying them was not excessive, and the members have professed themselves satisfied with the results. In London, where the drainage arrangements are more extensive, a fee of two guineas is charged, and the society has had many demands upon its inspectors. Objection has been made to such organizations, by prominent sanitary engineers like Mr. Field, that they tend to cheapen professional work, and that it is not practicable to inspect a building thoroughly for so small a fee. This is a valid objection in the case of large private or public buildings, but it does not militate against the mass of ordinary dwellings. Several sanitary protective associations on the plan of those just described have been organized at Lynn, Newport, Savannah, and other places in this country. These societies have accomplished notable results through their united action toward reforming public sanitary abuses, and as the public become more enlightened there will be an increased demand for their services in the other direction. No attempt has as yet been made to establish such societies in large cities in America, where the work of sanitary inspection is now divided between the public health authorities and a few professional sanitary engineers. Even these are only founded in one or two cities, though there is a growing demand for their services. Any citizen of New York, Brooklyn, Boston, or Chicago, by application to the health authorities, can have an inspection made of his premises free of charge, and a vast amount of improvement has been effected through these inspec-
Santo Domingo.

Outstanding national paper money, receivables at par for the payment of duties to the extent of 15 per cent. .........................................................
$6,000,000
Amount due abroad, gradually being canceled by 3 per cent. on the customs duties collected...
Loan, contracted with the Compañía de Crédito...

Total ............................................................................

10,000

On October 9 the Dominican Congress passed the Executive a bill to issue a 12
year loan of $1,000,000 at 8 per cent, payable in 12 years, and creating a sinking fund, and
$10,000 are to be set aside annually.

Volume 27, p. 877, was negotiated with the Compañía dito, and $500,000 was used for the
mone for extinguishing a former indebtedness of $100,000 out of the mone for

The estimate for 1888 was $973,587, and $874,484 expenditure.

President Billini, in his message of Dec. 1, recommended the issuing of a

Immigration.—A proposition has been before the Congress to procure immigrants to the
Canary Islands at $50 each for men, $60 each for women, and $10 for children. On
this proposal, the Minister of Pub issued a circular, laying down the con
which sugar-planters will be allowed to purchase labor for their plantation.

The writings of Chadwick, Richardson, Rawlinson, Latham, Bailey-Denton, Waring, Phil-
brick, Heron, Gerhard, Bayles, and other specialists in this line, are among the
leading sanitary publications; while the reports of the American Public Association, and those of
the Social Service Association, contain many valuable papers on sanitary topics.

Santo Domingo, a republic occupying the eastern portion of the West Indian island of
that name, the western portion being Haiti.

Government.—The President is General Gregorio Billini. The Cabinet in 1884 was com-
posed of the following ministers: Interior and Police, Gen. Federico Litchgow; Foreign Af-
airs, Señor Eliseo Grullon; Justice, Public Works, and Instruction, Señor José Joaquín Perez; Finance and Commerce, Señor Ama-
bile Damiron; and War and Navy, Gen. Cas-
imiro Nemeio de Moya. The United States Consul at the city of Santo Domingo is Mr. H.
C. Astwood, and the Dominican Consul at New York, Mr. H. Billini.

Finance.—The public debt, Jan. 1, 1884, was $3,353,555. The national indebted-
ess, including the repudiated Harmont St. Domingo loan, stood, on Jan. 1, 1888, as fol-

The same transaction was authorized to contract for the construction of a
steamship to carry the produce to the United States.

Steamship Service.—The Minister of Commerce, in October 1880, a contract with
the transatlantic line of steamers, to sail on a monthly basis, for which service the
contract pays the company a monthly dividend of $150.
SANTO DOMINGO.

and all Government officials to enjoy a 30 per cent, reduction on their passage.

Cana Contract.—The Minister of Public Works, toward the close of the year, made a contract with Messrs. J. L. Jimenez & Co., of Monte-

Christi, for the digging of a canal leading to the sea, twelve miles from the coast of the water of Yaque river, at a point where it joins the

end of the ancient canal; the new canal to measure three miles in length, to have a width of forty feet at the surface and twenty at the bot-

tom, with an average depth of ten feet. The compensation to be 10 per cent. of the duties the Government will collect at the port of

Monte-Christi during ten years after the canal shall be ready for navigation, less 2 per cent. set aside to extinguish the foreign debt, and 1 per cent. accruing to the benefit of the Pro-

fessional Institute.

National Exhibition.—The "Sociedad de Amigos del País" has resolved that the proposed National Exhibition shall open on Aug. 16, 1865, at the capital.

Military Academy.—A decree has been issued ordering the establishment, at the capital, of a military academy for the army and navy.

Truces.—On June 17 the minister from the Dominican Republic at Washington submitted to Secretary of State Frelinghuysen the follow-

ing list of articles he asked to be admitted free:

Palm-oil, cacao, indigo, asphalt; sugar, not above sixteen Dutch standard; cocoa in grain (chocolate), coffee, mahogany; espinel and all woods for balusters, etc.; beef, beef, goat, skinless; green; hides, green, salted, and split; oil; hides, all kinds; hides; hides; horses, asses, casuarine (or rubber-gum elastic); hemp and grasses for manufacture of paper-mulch, fruits; fresh lemons, orange, pineapples, limes, bananas, mangos etc.; lignum-vitea, henequen and textile vegetables; cocomuts, molasses, logwood, mora-nuts for dyeing purposes, tobacco in leaf.

In return his Government was ready to throw open the Dominican ports to the articles enumerated below:

Barrows and hand-trucks, one or two wheels; beef and pork, salted; bricks, refractory and all other kinds of brick; books, printed, unbound or bound in whole or part with paper or cloth; coal of all kinds; corn-flour; eggs and eggs with springs; cudsibles and marbling-pots of all materials and sizes; cases; knives; shoes, made or wall; diligences and road-carriages of all kinds and dimensions; dynamite; fire-pumps, engines and ordinary pump, for irrigation and other purposes; fruits, fresh, dry, or preserved; fish, fresh; also macaque and herring; faucets; food, dry, and straw; grains and all phosphates for agriculture; houses of wood or iron complete; bags for henequen; ice; iron and steel in rails, bars, beams, domerants, sals, and mauls; instruments, scientific; ink, printing; lime; hydraulic locomotives; coaches and cars for rail-ways; lithographic stones; masts and anchors for vessels, large or small; marble, in blocks and pieces for pavements; tongs of ornamental construction; machines, apparatus and instruments of all kinds for industrial purposes; sciences, arts, and professions, and any separate extra part or piece pertaining thereto; metals, precious, in bullion or in any form; money, legal, or of other gold, United States coin; molds and patterns for the arts; naphtha; oasts, in grain or straw; cars for small vessels; pens of any metal not silver or gold; plants and seeds of all kinds; petroleum, crude, or in coal-oil, and other products for illuminating purposes; powder, blasting, common; quicksilver; rails or parts of iron, steel, or any other metal, with accessories for houses and fences; roof-tiles of clay or other material; sulphur; stoves, iron for cooking and other purposes; staves and headings for barrels; soda, hypospho-

phate; steam-engines; sewing-machines; plates for roofs and pavements; tressels of wire for all destinations; types, coats of arms, spaces, rules, vignettes and accessories for printing of all kinds; vegetables, fresh; water-pipes of all classes, materials, and dimensions; wires for telegraph; wheat-flour; window-blinds, painted or not painted; zinc, sheet, asbestos and tar-paper for roofing.

The following articles from the United States to Santo Domingo to be reduced 25 per cent. on former rates of taxes:

Tables, sofa, rocking-chairs, chairs, desks, bureaus and dressing-cases, and articles of household furnish-

ure; pianos and other musical instruments; tanned hides and all articles in which leather is the principal component.

Prior to terminating its legislative labors on October 29, the Dominican Congress ratified the treaty of amity and commerce and consul-

nlar convention negotiated at Lisbon on May 1, 1838, between Portugal and Santo Domingo.

A Free Port.—On April 16 the Dominican Congress passed a bill declaring San Lorenzo a free port and port of refuge; the transit dues to be one half of one per cent. after the goods have been thirty days in port, but coal to be exempt even from this tax.

Commerce.—There entered the port of Santo Domingo City, from Jan. 1 to Sept. 1, 1883, 145 vessels, with an aggregate amount of mer-

chandise on board invoiced at $1,293,322; the import duty collected thereon being $555,783. These paid bar duty to the amount of $2,173; wharf and warehouse duet, $3,256; foreign debt tax, $16,827; harbor dues, $20,561; and the public instruction tax, $386.

The total import into the republic by sea from Jan. 1 to June 1, 1884, was $1,429,603, distributed as follows: Santo Domingo City, $611,504; Puerto Plata, $482,784; Samaná, $31,069; Monte-Christi, $61,360; San Pedro Macoris, $199,044; and Azua, $30,043.

Export from Santo Domingo City in January, February, and March, 1884: Sugar, 91,090 quintals; molasses, 111,589 gallons; honey, 23,761 gallons; cacao, 18,043 pounds; coffee, 27,418 pounds; wax, 36,815 pounds; mahogany, 605,000 feet; lignum-vitea and dyewoods, 636 tons; lignum-vitea resin, 525 pounds; tortoise-shell, 95 pounds; hides, 1,173, and goat-skins, 340. In April, May, and June: Sugar, 118,166 quintals; molasses, 115,455 gallons; honey, 12,645 pounds; cacao, 51,405 pounds; coffee, 230 pounds; wax, 18,610 pounds; mahogany, 98,000 feet; lignum-vitea and dyewoods, 573 tons; lignum-vitea resin, 750 pounds; tortoise-shell, 15 pounds; hides, 4,945, goat-skins, 412.

American Trade.—The imports and exports to and from the United States have been:
SERVIA, a kingdom in eastern Europe. Complete independence was recognized in the Treaty of Berlin. The Constitution of 1869 reaffirmed succession in the family of Obrenovich, declared the responsibility of the ministers to the Assembly, and vested the legislative power in the Skupstehina, jointly with the sovereign. The Senate was transformed into a Council of State, charged with the elaboration of laws. The Skupstehina, which is elected for three years, consists of 177 members, of whom 138 are elected by the people, every tax-payer having a vote, and 44 are appointed by the King. A Great National Assembly, composed of four times the number of the ordinary, is elected to decide on constitutional questions. Servia was proclaimed a kingdom March 6, 1882.

The King, Milan I, is the fourth of the dynasty. He was born August, 1834, and succeeded his cousin, Prince Michail, assassinated June 10, 1888. The Cabinet is composed of the following members: President of the Council, Minister of Foreign Affairs, and Minister of Finance, M. Garashzhan; Minister of the Interior, S. Novakovich; Minister of Public Works, D. Raiovich; Minister of War, Col. Petrovich; Minister of Justice, D. Marinkovich; Minister of Public Instruction and Worship, E. Popovitch; Minister of Agriculture and Commerce, ad interim, J. Gondovich.

Area and Population.—The area of Servia is 29,850 square miles, including 4,250 square miles added by the Treaty of Berlin, from which a considerable part of which population has already emigrated. The population was estimated at the beginning of 1884 to be 1,865,688. The number of marriages in 1883 was 21,991; of births, 79,922; of deaths, 47,181; surplus of birth, 39,701. The bulk of the population are of the Servo race and the Greek Catholic religion. Belgrade, the capital, contained 55,177 inhabitants in 1885.

Finance.—The revenue is derived mainly from direct imports. The budget for 1882-'83 makes out the receipts as 84,930,000 dinars, or francs, and the expenditures as 84,469,919 dinars. The public debt is over 100,000,000 francs, incurred for the construction of the Belgrade and Vranja Railroad, to repay the war requisitions, and lesser sums to compensate the dispossessed Turkish proprietors, and repay a war debt to Russia.

The Army.—The military forces are made up of the standing army and the national army. The standing army is employed in time of peace to instruct the national army. Every Serb is obliged to serve two years. The peace effective on Jan. 1, 1883, was 12,972 men and women. The war effective was 265,000 men.

Commerce.—The chief trade is with Austria, and the principal article of export, live stock. The leading exports in 1882 were of the following quantities: hogs, 240,546; cattle, 11,170; sheep and goats, 60,591; skins, 1,644,541; rye, 344,813 metric quintals; other cereals, 114,310 metric quintals; dried prunes, 267,594 metric quintals; wine, 48,605 metric quintals.

Railroads.—The length of railroads in 1884 was 845 kilometers, consisting of the line from Belgrade to Nish. There was building a line from Nish to Vranja, 90 kilometers in length. The Nish and Belgrade line, built at a cost of 90,000,000 francs, was opened September 4.

Education.—The system of state education that has been introduced in Servia is exceedingly liberal. Education in the primary schools is free, and compulsory from the age of seven to that of twelve. The normal schools, real schools, and gymnasiuums are free and open to every boy. At the age of eighteen any Serb can, upon passing an examination, become a student in the University of Belgrade, which has faculties for science, technology, philosophy, and law. All instruction is gratuitous and to the sons of poor parents the state allows a stipend. For the liberal professions or the public service, young Serbs nearly always complete their education in the universities of Austria, Germany, or France. If unable to defray all their expenses, the Government will assist them, and, if entirely without means, allows a student abroad 2,500 francs a year in addition to traveling expenses.

Election.—The election for the Skupstehina, which took place February 6, was attended by intense but suppressed excitement. The Radical party was crushed after the suppression of the revolt in the district between the Timok and the Morava two months before. Its leaders were driven into exile. Liberty of the press and of meeting was suspended, and soldiers were posted in every district. Yet no official interference and intimidation could counteract the impression produced on the minds of the Servian farmers and herdsmen by a defeat of 8,000,000 francs which could no longer be concealed, new taxes, and fresh military burdens. The Radicals and Progressists combined to defeat the ministerial candidates, and left the Government with a minority too small to be altered by any manipulation of the return. The Radicals obtained but a few seats, but the Progressists came out much stronger than the Government party, electing 71 members.

Change of Ministry.—Since Cristich was unable to secure a majority with the forty-four members to be nominated by the Crown, he gave way to a Progressist ministry. The King summoned M. Garashzhan, who had been a member of the Pirotshiatsu Cabinet, and was serving at the time as minister to Austria. The Cristich ministry announced a Government victory, and with the aid of M. Garashzhan endeavored to
a compromise with the Progressists, the 16th of February resigned.

**of Taxes.**—A new system of taxes was enacted by the Skupetschina in June. The new system pressed more severely upon the wealthy. The new law raised the poll-tax, and made lands, and other property liable to an income tax, expected to increase the revenue to 90,000,000 francs and yield in 1885 100 francs. To cover the deficit, a new 60,000,000 francs was effected. The loans it was proposed to consolidate at 5 per cent of the rent. Capital and personal taxes are calculated on the national income. The tax on invested capital is 5 per cent. on the interest, dividends, and profits, according to the percentage system. Capital employed in trade or manufacture is taxed at the rate of 10 francs for every 10,000 francs or less, 10 francs for from 2,500 to 5,000 francs, and 3 francs for every additional amount.

**with Bulgaria.**—Both Servians and Bulgarians were dissatisfied with the boundary fixed by the Treaty of Berlin, the former desired more land and the latter wished for a smaller frontier with the Servian insurgents. The development of Austrian sympathy in Servia was an additional cause of irritation. The Bulgarian dissatisfaction with the new boundary of the Berlin Congress was aggravated by the military precautions taken to forestall a service of the Servian insurgents as a refuge in Bulgaria. Pashich, the military leader, met the local magistrates and other persons were killed. The leader of the bands was captured, with revolutionists of Pashich on his person, and his brother, Lazarovich, who had been in hiding, was captured in contumacia. The same time a band of Montenegrins, led by Luka Daburich, another fugitive of the insurrection, made an attempt to seize the capital. Servia, of which warning was received in the Montenegrin Government. Suspected design to rekindle the rebellion, Servian Government demanded the withdrawal of the Servian Radicals to a distant Bulgaria. The Montenegrin ministry, now assuming to investigate the matter, made a demand for the evacuation of the sentry-post on the island of Bregova. Although the island is on the Danube, a Servian guard has been stationed there. A palming run-

**Skate.** _Dutch, schaats; French, échame; Low German, schaak; Anglo-Saxon, soccaan, socas._ Skating in its modern acceptation originated so long ago, probably among the nations of northern Europe, that it may be accounted of prehistoric antiquity. References to it are of frequent occurrence in the runes and sagas of Scandinavian mythology. The derivative meaning of the word, according to Prof. Skeat, the English philologist, is "shank": from the same root other words are cited, meaning _to go swiftly_. Hence, Prof. Skeat thinks that skate originally meant something to lengthen the shank or leg, and thus facilitate swift motion. It does not appear from its etymology that he noted the fact that bones and specifically shank-bones were used by the earliest skaters of whom any record exists. Bits of bone or wood were, no doubt, the first skates, and the Dutch are credited with having first used iron. From the Netherlands the improved patterns were brought over to England as early as the twelfth or thirteenth century, and about that time skate-history begins.

James Eccleston, in his "Introduction to English Antiquities," states, but without giving his authorities, that Londoners used to skate on the Thames as early as A.D. 1216 to 1488. In a Latin work entitled "Vita Lydiana," by one Johannes Brugman (1478), there is a woodcut representing the heroine of the tale as fallen on the ice while skating. This is the earliest Dutch skating-cut known to Mr. W. M. Conway, an expert in this line.

William Carr (1888), in a work on the Government of "Germanic Swedeland and Hanseatic Towns," etc., says: "At the time when the French came to invade the territory of the States-General, such a sudden thaw (set in) as was never seen before, . . . that the French were faint to beat a disorderly retreat, . . . and the nimble Dutchmen on their skates so long as the ice would bear them did shoot down the French." Here is an obvious reference to soldiers drilled to take the field on skates as the Swedes and Norwegians certainly.
did in later times, the last regiment of Norwegian Skielobre having been discontinued about 1860.

Samuel Pepys (1669) speaks of the use of "skates" as a "very pretty art" (Griffin's memoirs of Samuel Pepys, London, 1825). In John Evelyn's memoirs (London, 1816), skating is mentioned as practiced on the Thames as early as 1662. Jonathan Swift wrote to Esther Johnson in 1711: "The canal and Rosamond's Pond are full of rattle sliding and with skates, if you know what those are." (See Foster's "Life of Jonathan Swift," London, 1875.) Evidently, in the early part of the eighteenth century skating was not familiar to the English.

The first English patent for a skating invention was to J. H. Savigny, Dec. 4, 1784, since which time nearly 400 specifications have been enrolled in Great Britain, while in the United States, up to the end of January, 1888, there had been 395 patents issued for "skates" and 206 for roller-skates.

Chronologically, skating may be divided into: 1. snow-skating, namely, the use of wooden runners or "skoes"; 2. blunt-skating with bones, or strips of hard wood; 3. sharp-skating, which introduces the iron or steel blade; and 4. roller-skating, where revolving wheels take the place of runners. This arrangement is, of course, to some extent guess-work, for, as has been said, the origin of snow and blunt skating dates back beyond known records, but it is not unsafe to assume that devices to facilitate travel over snow were invented before the necessarily more elaborate contrivances for traversing ice. The Scandinavians seeke is sometimes referred to as a snow-shoe, but it must not be confounded with the snow-shoe of the American Indians, which is adapted for walking or running on the snow surface, not for sliding. "The Heimskringla" ("Chronicle of the Kings of Norway," date not known), by Snorri Sturluson, translated from the Icelandic by Saul Lang, London, Longmans, 1844, says: "Snow-skates are strips of light wood about five feet long, with a leather loop in the middle, into which the foot is thrust, and the expert scater shuffles along at a great rate, especially down a slope."

Erick Pontoppidan (1760) thus describes a Laplander: "His skates, which were made of the bark of the tree, were seven feet and a half long, four fingers broad, and flat on the bottom, ... a large quiver at his back, and a dark [skating-staff] in one hand and a bow

heels." With these snow-skates "they slide about on the snow as well as they can spot the ice, and faster than any horse can go." It is singular that the shoe has not come more generally into use in the Northern United States, for it can readily be used on good sleighing-roads as well as on a moderately firm crust, and it is said that fifty or sixty miles a day is not an uncommon feat in Sweden and Norway. So far as is known, its only general use in this country is in the California mountains, where it was introduced probably by Norwegian miners about 1849-50, and has retained considerable popularity both for purposes of travel and as a means of recreation.

Snow-skates vary in minor details, according to individual preference. For a boy, four or five feet in length is enough, while for men they are sometimes ten or twelve feet long. The width is given from 24 inches to 74 inches, and the thickness 1 inch to 1½ inch at the foot-rest, which point is usually somewhat nearer the heel than the toe, so as to cause resistance to backward slipping. The toe turns up to a height of about four inches, and the whole tapers very slightly fore and aft, coming to a point at the toe, widened at the toe-plate, and rounded off at the heel. On top it is beveled, and thinned to half an inch thick at the toe and heel; on the under side a wide, shallow groove is cut to prevent slipping sideways. The strap is merely a loop through which the foot is thrust as far as the ball of the great-toe and another strap passes loosely behind the heel, so that the latter can be raised as in walking. The wood is usually cut away at the sides of the foot-rest, so that the strap will not be worn by snow and ice.

The engraving shows two different forms of cross-sections at the foot-rest, and full-length top and side views of the skee. The finest skees have a general upward curve longitudinally, but this is not essential. A staff with a sharp iron point is used for steering and to serve as a brake. With these skées it is "possible to
a steep hill, coast with great rapidity, and rapidly on a level.

Now-skating contests are held in Norway, and the royal family frequently witnesses the sport. One of the go over a hummock or lump on a steep and an English visitor records a clear sixty feet with a descent of thirty-six

The skating contests are held in Nor-

Sweden, and the royal family frequent-

ly witnesses the sport. One of the

or bone skates have gone wholly out

ices, save as relics. They were used

knowledge, with the aid of a staff or

and were merely the precursors of the

steel-bladed skate, whose birthplace

ably the canals of Holland.

LONG-DISTANCE SKATE (ABOUT 1840), STRAP-FASTENINGS.

S KEATS (PRIOR TO 1850), STRAP-FASTENINGS.

of the skates of 1830 or thereabout had a projection in front, sometimes

i, which was very dangerous, and of

slightest use. They were often per-

right on the “keel,” or only slightly

, and had frequently a longitudinal

a the “keel” to give a keener holding

They were uniformly fastened with

which had to be drawn very tight, and

ame extremely painful through check-

and for the scientific aspects of skating, to

three articles on “Speed-Skating,” in the Lon-

“Field,” Dec. 28, 1882, Jan. 6 and Feb. 8,

1886, by F. W. Foster; and to “The Dynam-
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The rate of speed of the skater is deceptive. For a short distance a fast runner can distance a first-rate skater; but the skater can keep the pace far longer, and with less effort than any runner. A mile in three minutes, or one hundred miles in twelve hours, may be taken as nearly the best possible performance for an ice-skater.

Sailing on skates may be successfully accomplished by means of small sails spread as tightly as possible on light spars. These are made in a variety of shapes, but the simplest is as shown in the cut. It is known as the "Cape Vincent" sail. Running before the wind is, of course, perfectly simple; but working to windward and tacking is an operation requiring considerable skill, practice, and address. The Danish skate-sail is a more complicated rig, but great superiority is claimed for it by those who have become skilled in its use. The sail is carried "to windward" of the skater, so that he leans against it when under way. A very high rate of speed may be attained by a skate-sailer under favorable conditions, as the same principles govern his rate of motion as in the case of ice-boats.

The earliest known roller-skate was patented in France, by one Pettitbled, in 1819. No description of this skate is extant. The next is that of Mr. Robert John Tyers, of England, in 1823. This is fully described as a single row of small wheels of slightly different sizes, so placed under a foot-plate that their lower peripheries will touch a segment of a circle (will in general effect be "rockered"). A Frenchman, Garin by name, was next in order (1829). His invention consisted of three wheels in a single row, the middle one being the largest. It patented a device with a large front wheel; but none of these won their way to popular favor, and it was not until Mr. J. P. Flompton patented a device with a larger front wheel that the roller-skate established its claims to popular favor.
SKATE.

works of importance on this subject: "A System of Figure-Skating," by H. E. Vandervelt and T. M. Witham (London, 1878); "The Art of Skating," by George Anderson (London, 1878); "Practical Hand-Book on Figure-Skating" (London, 1881); "Hand-Book of Fence-Skating," by N. and A. Goodman (London, 1882); "Combined Figure-Skating," by members of the London Skating Club (London, 1884); "The Skater's Text-Book," by Frank Swift and Marvin R. Clark (New York). "Roller-Skating," by James Pycoft, and a series of articles in "Engineering," vol. xii., and in London "Field" for March and April, 1879, afford the most complete treatises extant, historical and practical, on roller-skating. Papers on skate-sailing may be found in "The Century," March, 1883, and in "Harper's Weekly," Feb. 25, 1892.

SOUTH CAROLINA. State Government.—The following were the State officers during the year: Governor, Hugh S. Thompson, Democrat; Lieutenant-Governor, John C. Sheppard; Secretary of State, James N. Lipscomb; Attorney-General, Charles Richardson Miles; State Treasurer, John Peter Richardson; Comptroller-General, William E. Stoney; Superintendent of Education, Asbury Coward; Adjutant and Inspector General, A. M. Manigault; Commissioner of Agriculture, A. F. Butler; Railroad Commissioner, W. L. Bonham, L. T. Walker, and D. P. Duncan. Judiciary, Supreme Court: Chief-Justice, W. D. Simpson; Associate Justices, Henry Malver and Samuel McGowan.

The Public Debt.—The Governor, in his message to the Legislature, says:

The estimated amount of the public debt is almost the same as last reported, the only changes being the purchase and cancellation of $1,000 of deficiency bonds by the Sinking-Fund Commission, and the funding of $8,826 of fire-loan bonds not previously included among the outstanding securities. The whole estimated debt is as follows: Consols (valid), $5,454,—$55,77; deficiency bonds and stocks, $457:; Agricultural College scrip, $191,800; and bonds and stock still unfunded under the act of 1873 and the amendments thereto, amounting, principal and interest, to $415,054.96; the whole aggregating $4,592,—$70,93. The unfunded debt, $415,054.96, includes interest unpaid from July, 1872, to January, 1880, which under act of 1873 is fundable at 50 per cent. Of this last class of bonds, notwithstanding the very large amounts still unfunded, but few are now presented for exchange, only $8,000 having been funded during the last year, and less than $60,000 in the last two years, so that it is reasonable to suppose that many of them have disappeared and will never have to be redeemed by the State. The exchange of green consols for brown consols has progressed satisfactorily, there being now but $253.—$272.42 of the former class outstanding, and of which $699,149.58 or 724 per cent., is invalid. In four years the indebtedness of the counties has been decreased by very nearly $1,200,000.

Revenue and Expenses.—It is estimated that it will require $372,195 to meet the ordinary expenses of the government for the fiscal year 1884—85, and $591,387 to pay interest on the public debt. The annual expenses of the gov-
ernment for State, county, and schools are about $1,860,000. The whole amount of taxes levied for the fiscal year 1888-’89 is $1,788,031, being $162,000 less than for 1888, and divided as follows: For State, $752,559; for county, $718,072; and for schools, $312,490. Of these, $1,028,241 is levied on real estate, $578,425 on personal property, and $180,857 on railroad property. The tax levy averages 11 and 4 mills to the county, the rate being highest in Pickens (18 mills) and lowest in Charleston (9 2/3 mills).

The amount of property returned for taxation for 1884 is: Real estate, $97,559,538; personal, $14,694,706; railroad, $15,283,366; total, $147,672,709. This is a loss of $881,900 on the return of 1885; personal property having fallen off by $1,545,364, while real estate has gained $128,137, and railroad property $35,402. The increase in real estate is altogether in the cities and towns, the returns of country property having decreased by about $80,000. The Comptroller-General estimates that there are at least 2,000,000 acres of land that are not upon the tax-books at all, and this estimate is sustained by the report of the Secretary of State. The taxable property of the State may fairly be estimated at about $290,000,000, instead of $150,000,000, as assessed.

Education.—There were enrolled in the public schools 84,028 white pupils, and 101,091 colored, making a total of 185,019, an increase of 12,524 pupils over the enrollment of the previous year. According to the calculations of the superintendent, this enrollment is found to be 65 per cent. of the total school population; or, stated according to race, 92 1/4 per cent. of the white, and 50 1/4 per cent. of the colored children were enrolled. The increase in the number of teachers is 190; in the number of schools, 213. The school fund is also increasing with the enhancement of property values. The total available school fund for the year 1881-82 was $471,171.19; for 1882-83 it was $517,907.27. The amount for 1888-89 cannot be definitely ascertained until the final accounting of the county treasurers in April, 1888.

The University of South Carolina, as at present constituted, comprises the Claflin College, for colored students, at Orangeburg; the South Carolina Military Academy, at Charleston; and the South Carolina College, at Columbia. The Military Academy was reopened on Oct. 1, 1882, since which time it has been in active and regular operation. One hundred and thirty-eight youths are now receiving its instruction. The cadets enter into an obligation to teach for two years after graduation, in the public schools.

The South Carolina College was reorganized in 1882. The catalogue shows a total enrollment of 202 students—a number exceeded but twice in the history of the institution. Of these 202 students, 136 were natives of the State.

The annual report of the Institution for the Education of the Deaf and Dumb and the Blind shows an enrollment of seventy-six pupils. A department for colored pupils is in successful operation. The last United States census shows quite a number of deaf-mutes and blind children of school age, in every county in the State. An addition now being made to the building will enable the institution to admit and provide for a much larger number than is now in attendance. The Board of Commissioners asks for the following appropriations, viz.: For the support of the institution, $10,000; for repair, $39; for completing and furnishing west wing, $4,000, insurance, $95; colored department, $20.

Lazaret Asylum.—The number of patients at the beginning of the last fiscal year was 62; number admitted, 298; readmitted, 5; males, the whole number under treatment during the year 901. The number of inmates at the close of the year, 628, was diminished by removing 38 imbeciles to the care of their respective county commissioners. The average number of patients was 68 more than in the year previous. The sanitary condition of the institution has been highly commended by the State Board of Health. It appears that the number of colored patients is so steadily increasing that they will, probably, in a few years, constitute a majority of the inmates.

The census of 1880 shows that there are in the State 2,700 of the defective classes who may claim admission to the asylum, less than one-third of whom are now in its inmates. The per capita cost of maintenance has been reduced from $146.54 in 1888 to 128.76 in 1884; or, deducting the amount received from patients, the cost to the State has fallen from $141.80 to 128.76; and of last year's appropriation, $6,928.48 remains to the credit of the institution. The estimates for the coming year for all purposes, are less by $9,452.05 than the amount appropriated last year.

Penitentiary.—The number of convicts on Oct. 31 was 865, an increase of 60 over the corresponding year. Of these, 555 were colored males, 85 colored females, 60 white males, and 2 white females.

The work of completing the north wing of the prison has been pressed forward as rapidly as possible, and a large portion of the one now in use is in course of erection. Until the north wing is finished it will be possible to provide accommodations within walls of the prison for all the convicts undergoing sentence. "The plan of letting convicts to contractors," says the Governor, "to go without the supervision of the officers of the prison, is open to many serious objections." The Penitentiary is not only self-sustaining, but is a source of revenue. The cash receipts for the last fiscal year were $75,083.29; the disbursements, $71,923.74, leaving on hand a cash balance of $56.55.

Department of Agriculture.—The commercial crops collected during the year 1880-81 include commercial fertilizers sold in the State from Nov. 1, 1883, to Oct. 1, 1884. The commission calls attention to the necessary expen
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protecting the right and interest of the phosphate territory, and recom-
manding that all the expenses incurred in litigating the case be re-
embursed to the department out of the phosphate royalty. During the year ended Aug.
1, 151,925 tons of rock were removed from navigable streams of the State, against the 150,000 tons of 1885, an increase of 11,925 tons, the largest amount ever removed in a year. The State received for the last year's royalty on rock mined amounting to $7,653, which exceeds the sum realized in the previous year by $28.

The report of the commissioner shows a decrease in the area devoted to cotton in 1884 as compared with 1883, but an increase in yield; and the area and yield of corn and oats were both increased.

Statistical Review.-The product of the manufac-
turing enterprises of the State for 1883 was $26,563,924. The annual product of cotton mills is worth $7,963,196, the num-
ber of spindles remaining the same as in 1880. It is thought that the cotton product in 1884 will exceed $9,000,000. The product of the lumber mills is $5,562,655, of peach-nine mills $3,912,271, making a total of $4,836. The products of mines and quar-
ters are also increased since 1880.

The Democrats renominated the State officers. The Republicans nominated a State ticket, but it was not kept in the field. The 4th of November Governor Teed received 67,895 votes, and the other candidates about the same number. The votes returned for the several positions were: Democrats, 68,300; Repub-
licans, 21,735; miscellaneous, 1,567. Six Demo-

crats and one Republican (Seventh District) were declared elected. The Le- gislature consisted of 38 Democrats and 3 Re-
publicans in the Senate, and 120 Democrats, 40 Republicans, and 3 Independents in the House. The constitutional amendment limiting the of counties to incur debts was approved by a vote of 38,069 to 7,731. On the 18th of November, the Legislature re-
sponded to the call of the Governor from the Senate, and adjourned on the 1st of December. On the 9th of the latter month, Wade Hampton, Democrat, was re-
lected by the legislature as United States Senator. The work of session was embodied in 189 acts. Not less than a dozen of these are of general im-
portance. The Legislature was chiefly occupied in amending the laws of previous sessions, supplementing them. In no instance were the amendments of any significant change of policy. The most striking feature of the session was the action of the Legislature regarded to corporations, which had been the direct and primary cause of the deaths of numerous persons. The State House appropriation for the present year is $75,000.

The constitutional amendment limiting the power of counties to contract indebtedness was ratified, and the civil-service resolutions of 1880 were reaffirmed.

Election Cases.—In April, at the opening of the United States Circuit Court, the cases on the calendar charging violation of the election laws were stricken from the docket, on motion of U. S. District Attorney Melton, who said:

When I was appointed district attorney I found upon my desk a very large number of these cases—something over two hundred—when these witnesses and parties had been attending upon the court for several preceding terms. I brought the attention of the department, urging that these cases could not all be tried, and requesting that I be permitted to discontinue all of them, except a few of which a re-examination of the cases might be found most meritorious. With a view of determining that fact the Attorney-General appointed temporarily a gentleman, Mr. Sanders, whose business it was to visit different parts of the State and select from the cases such as could be tried. This was done at the April term, 1883, and all the other cases were discontinued by leave of the department. The result of that term was that one conviction, one acquittal, one plea of guilty, and in all the other cases the jury failed to agree. In the fall of 1883 I requested the permission of the department to continue the cases on the docket. They have continued there to this day. Those cases, give me leave to say, had reference solely to politics, to elections for members of Congress of the United States, but at that time, under the law of this State, the same box was used and the same ticket was used on which the persons to be voted for for State offices were named. So it was a difficult matter to investigate the election of the officers of this State, and county governments. I need not say that the purpose of the Government was to inquire as to the national election, at that time and at all other times in declaring both in words and in action, that the GOV-
ernment of the United States did not undertake to interfere in any way with the local affairs of the State. There is no warrant of law in so doing, and it is not our duty to do so. The Legislature of this State in 1882 separated the State and congressional elections, separated the boxes and separated the precincts and managing boards so that investigations might be had without even the semblance of interfering with matters pertaining to the State.

At the last term of the court the cases again came up for trial. They were brought under these specific directions contained in the circular (of the Attorney-General) I have read, and they terminated with the same result—material. I am now persuaded that in the present condition of public sentiment of a large proportion of the people of this State, convictions in these cases are impossible, and because I am so convinced I have deemed it proper—indeed, my duty—to the Government as well as to the people of the State, to represent the matter as it is to the Attorney-General of the United States. In the exercise of this discretion with which I am now by this letter (of the Attorney-General) invested, I move your Honor that each and every case upon the calendar of this court involving a violation of the election laws of the United States be discontinued.

Ex-Judge A. G. Macrath, who was counsel for the accused in the election cases, said:

I have listened with a great deal of interest to the district attorney, and I have heard with bitter regret what he has had to say, and I concur in it except in
is vested in the Cortes with the King. The ministers are responsible to the Cortes, and must countersign all royal decrees. The Cortes are composed of a Senate and a House of Deputies. Senators are of three classes: Certain high public functionaries and princes of the blood royal and grandees of Spain, who are senators in their own right; senators nominated for life by the Crown; and senators elected for five years by corporations and citizens paying the highest taxes. The first two classes together must not exceed 180 members, which is also the limit of the third class.

The Chamber of Deputies is composed of members chosen for five years by the electoral colleges, in the proportion of one to every 50,093 inhabitants. A royal decree of Aug. 8, 1878, grants to Cuba the privilege of sending deputies to the Cortes in the proportion of one to every 40,000 free inhabitants paying taxes to the amount of not less than 125 pesetas ($25) annually. Deputies must be at least twenty-five years of age, and may be re-elected indefinitely. A deputy cannot without resigning accept a pension, an office under the Government or in the royal household, or a decoration. Ministers are exempt from this law. Both houses sit every year. The King has the power to convolve, suspend, or dissolve them; but in the last case a new Cortes must meet within three months. The president and vice-president of the Senate are appointed by the Crown from among the senators only. The King and each Chamber possess the right of initiating legislation. All money bills must originate in the Chamber of Deputies. The Roman Catholic faith is the state religion. Each province has a local assembly.

The reigning sovereign is Alfonso XII, son of ex-Queen Isabella II, born Nov. 26, 1857, and proclaimed King Dec. 30, 1874. He was married Jan. 29, 1876, to Maria de las Mercedes de la Cerda y Guzmán. His attendances at national property, 542, from the public treasury, and 29,000 from various sources. The total expenditure placed at 880,306,937 pesetas, of which 9,800,000 pesetas are for the civil list, 785 for legislative expenses, 274,000 for the public debt, 2,094,767 for the pay of 49,097,461 for indemnities and pensions, 709 for the presidency of the Council of State, 8,677,174 for Foreign Affairs, 355,000 for Grace and Justice, 181,372,045 for 352,930 for the Navy, 46,301,047 for the Interior, 105,695,507 for Public Works, 600 for Finance, and 141,742,080 for collectible in the Philippines. The budget for 1881 makes the total receipts 11,258,006 pesetas, and the expenditures 11,341,904. The exports of sugar constitute 48 per cent of the total value of exports. Other articles include hemp, raw and worked, coffee, cigars, dye-wood, etc. The tonnage in 1881 was 827,973 tons. The longest line was 1,149 kilometres in 188.

Commerce. The total value of the imports in 1882 was 815,459,083 pesetas, or against 600,599,480 in 1881, 473,554 in 1880, and 805,108,000 in 1879. The total of the exports in 1882, 763,854,817, equals 889,083 in 1881, 544,333,580 in 1880, or 503,000 in 1879. The imports from 1882 amounted to 260,000,000 pesetas. Great Britain to 170,000,000; the United States, 91,500,000; Germany, 89,700,000; Belgium, 800,000; Sweden and Norway, 24,600,000; Brazil, 1,400,000; Cuba, 28,000,000; Italy, 1,000. The exports to France amounted to 809,700,000 pesetas, to Great Britain 2,000,000; to Cuba 67,700,000, to the United States 27,900,000, to Portugal 19,400,000, to Argentine Republic 15,700,000. The chief cereals in 1882 amounted to 101,083,000; silver coins, 12,600,000.
Leather to 17,000,000; exports 8,300,-

nents of leather materials to 87,-

ports 8,000,000; the exports of es-

7,900,000; the imports of timber, etc.,

0,000, exports 1,300,000; the total im-

raw materials to 161,800,000, the ex-

190,600,000 pesetas. The imports of

ounted to 4,100,000 pesetas; of medal-

22,500,000; of machines, etc., to 73,-

; of yarns to 22,300,000, of textile

ures to 62,300,000; of furniture to

; the exports of coals to 11,800,000;

ports of paper and playing cards to 7,-

ports 5,500,000; the total imports

factured articles to 207,100,000 pesetas,

ports 17,800,000 pesetas. The

of drugs, chemicals, and colors amount

5,800,000 pesetas, exports 6,000,000;

of guano, fats, and oils, 10,000,000,

5,600,000; miscellaneous imports

00, exports 86,100,000 pesetas.

mg.—The tonnage entered at Spanish

1883 was 2,661,599, 620,820 tons

Spanish and 3,060,749 under for-

; the tonnage cleared, 6,334,888.

merchant navy on Jan. 1, 1884, counted

vessels, ranging from 50 to 4,965 tons,

2,426 steamers.

Halls, Halls, and Telegraphs.—The railroad

Sept. 1, 1884, had a total length

kilometres; under construction 8,444.

umber of private internal letters, post-

, and circulars forwarded in 1882–83

11,229, of official 8,146,769; the num-

nternational letters, etc., 19,395,460;

ey value declared in valuable inclus-

087,183,367 pesetas. The receipts of

t-office were 14,628,705, the expendi-

603,838 pesetas.

length of telegraph lines in 1883 was

of wires 41,850 kilometres. The num-

essages was 3,019,881, including 198,-

ected with the service, 2,087,180 in-

ional, and 79,992 in 1883.

The receipts were 5,151,480 pesetas.

ary.—The effective of the peninsular

army for 1883–84 was fixed by a de-

July 16, 1883, at 94,949 men, increased

0 men during the three months devoted

struction of recruit. The effective of

in Cuba was fixed at 25,633 men,

the army in Porto Rico at 3,302 men,

the army in the Philippines at 7,870,

ar de garde civil, which is subordinated

Ministry of War in matters of instruc-

discipline, but in matters of service

to the instructions of the Ministry of

terior, numbered 780 officers and 14,

The carabiniers or customs guard

frontier and the ports consisted of 92

ies and 22 sections of horse.

The war fleet in 1884 counted 5

frigates with 50 guns, 9 screw-frigates

guns, 5 cruisers of the first class, and

steamers of the first class; 3, 10

steamers, and 1 armed

weight placed in the second class; 1 moni-

tor, 1 floating battery, and 35 steamers in

third class; and 56 small gunboats and 8 tor-

pedo-boats. The personnel of the navy con-

sisted of 873 naval officers and 14,000 sailors,

676 officers and 7,083 marine infantry.

Change of Ministry.—When Don Alfonso called

Canovas to the head of the ministry in 1879

after Gen. Martinez Campos, the former Pre-

mier, had been disowned by the Conservative

party on account of the liberal reforms advo-

ated by him, most of the other political

leaders were either Carlists or Republicans.

When Sagasta came out in favor of the dynasty

and joined with Martinez Campos to form the Fu-

tishion party, the King felt constrained to call

the new party to power, more particularly on

account of its influence in the army. The Sa-

gasta ministry was in turn upset by the Monarch-

ical Democracy, afterward called the Dynastic

Left, a new party, which demanded liberal re-

forms, formed by Marshal Serrano, the Duke

de la Torre, and his nephew Gen. Lopez

ominguez, who separated from the Fugitives,

and Moret, the parliamentary orator. The di-

vision in the Liberal party was so irreconcilable

that the Posada-Herrera Cabinet was unable to

ervy out the programme of the Dynastic Left.

There was a conservative reaction on

account of the socialistic ferment and the re-

publican conspiracy in the army. The revision

of the Constitution, civil marriage, the reor-

ganization of the army, free trade, and uni-

versal suffrage, were questions on which there was

ot unanimity of opinion even in the Dynastic

Left. Posada was unable to obtain the support

of Sagasta and his followers for any satisfactory

legislative policy. As the Liberals were hope-

lessly divided, the King took the bold course

of recalling the Conservatives. He was not

moved by a desire to upset constitutional

principles, but simply wished to find a working

Cabinet that would tranquilize the public mind,

which was seriously unsettled by the political

turnoil. He had the approval of several of the

ministers when he invited Canovas del

Castillo to form a Cabinet, which was consti-

tuted Jan. 18, 1884. In Spain political ques-

ions have never yet been decided by the arbit-

rment of the popular vote, which can at any
time be obtained in its favor by the govern-

ment of the day. While the rest of the Posada-

Herrera Cabinet were desirous of terminating

the crisis in the regular constitutional way by a

dissolution and new elections, Senor Posa-

da, who was always conservative in his tenden-

cies, counseled the course followed by the King,

and even Moret, formerly a Republican, depre-

cated a new election, not because he expected

a rejection of the ministerial programme, but

because he dreaded an expression of the popu-

lar mind, which would go beyond the projects

of the Dynastic Left and bring in question the

continuance of monarchical government.

Four members of the new ministry sat in

the former Canovas Cabinet and occupied the
the same course, suspending all local bodies in order to control The Socialist Republicans un- call, called the Federalists, took, art in the elections. Zorrilla en- keep his adherents from voting; on of his party which follows Sal- candidates. The Possibilists en- energy into the campaign. The d to abstain, except in the Basque ere they are numerically strong. 1 election took place April 27. dives obtained 260 seats. The ho number 260 in the last out better than the ministry in- respectable minority of 38. The uo, notwithstanding the assist- government, secured only 84 man- republicans won 6 seats, equally en the Possibilists and the follow- n. Cuba, which with Porto Rico members, elected 3 Autonomists inession exerted by the Spanish Of the 180 senators elected, 14 13 followers of Serrano, and the aliasts, excepting some Autono- e Antilles. As many of the life- during the ministry of Sagasta, n counts one fourth of the sen- the adherents of Sagasta, while s it holds only one fifth of the of the Conservative Govern- with financial difficulties from. It was obliged to inaugurate administration with the unpopular ning the increase in the pay of ubaltern officers decreed by the ga ministry. The revenue fell imates, and the obligations under arrangement could only be met by nagement.

The effect of the reactiona- among his colleagues, who in strengthen the monarchy treat- enemies the pacific Republicans revolutionary agitators, and who erate specially antagonized the position, was to increase the fol- ner, who, without uniting with sted his constitutional methods, upularity of the Government e effective, and also to consoli- and advance the cause of the sstitution of 1869, although formations the Dynastic Left di- ministry created for itself a pow- est opposition. Fidal was taken net to win the support of the ho returned twenty-one deputies and whose alliance seemed ne- Conservative Government. In diplomatic relations with Italy ed through the attitude of Span- The Government fell into such or on this account that it seemed likely that the Liberals would be called into power again. A brilliant speech of Canovas, however, appeased the public. The university troubles in November created a difficulty that could not be disposed of satisfactorily, and left a more lasting impression.

University Riots.—On the 19th of November a clerical demonstration excited the political passions of the Liberal students in Madrid, who responded with a counter-demonstration on the following day. The Ultramontane Minister of Instruction interfered, and the Government forbade political demonstrations. The students, who have always displayed their political sentiments in such manifestations without interference, repeated the demonstration of the 20th, which was violently suppressed by the police. The professors gave them moral support. On the 21st they gave an ovation to Prof. Morayta, who valiantly defended their rights, and then marched to the residence of Castelar and cheered the ex-President of the Republic and ex-professor of the university, thus avowing their republican sympathies although they avoided the cry of "the republic."

From the 20th to the 23d, 100 students were arrested and 25 wounded by the police. The students and professors persisted in their passive resistance, and, in spite of the threats of the Minister of Instruction, refused to expel or suspend the refractory students. All the high schools of Spain, except the theological and military institutes, and some of the Italian universities, sent addresses of sympathy. Judge Cabeza impeached the chief of police for resorting without necessity to the use of arms.

Foreign Policy.—The Canovas ministry was free from the ambitions hope of enrolling the country among the great powers, with which the Sagasta Cabinet was carried away. It neither courted the favor of Germany by an ostentatious leaning toward the central European alliance, as was done by the Sagasta ministry, nor showed excessive compliance toward republican France, as its immediate predecessors were impelled to do by their democratic sympathies. The Andorra question, the Mongol affair, and the Morocco question came up to disturb the good relations with France, yet without leaving any lasting ill-feeling. The country was greatly excited over the suspected designs of France in Morocco, apparently manifest in her intervention on behalf of the Sherif of Ware, in the sedulous activity of the French representative in Tangier, M. Ordega, and in demands made in the French press for a new regulation of the Algerian boundary. The assurances of the French Government finally dispelled these doubts to a great extent. The desire of Germany to acquire colonies, and Spain's interest in the preservation of her old ones, afforded a new ground for the maintenance of cordial relations with Germany.

SPELling reform. The organization of the movement for simplifying English spelling con-
SPELLING REFORM.

11. —Dubl consonants may be simplified.

12. b. — Drop silent $ in bombs, cramps, dry dumb, lamb, limb, numb, numbness, thumb.

c. — Change $ to s in older, expose.

d. — Change k to g in ago, agoth, dought.

e. — Drop gh in hauty, though (the bru).

13. c. — Change $ back to s in elder, expose.

14. ch. — Drop the b of ch in championship, chias.

15. d. — Change d and t final to t when

16. g. — Drop g in sign, foreign, sovereign.

17. gh. — Drop a in agath, burlath.

18. i. — Drop p in could.


20. s. — Drop s in aisle, demers, island.

21. ac. — Drop e in scotch, scythe.

22. tch. — Drop p in crotch, pitch, whitch.

23. w. — Drop p in school.

24. ph. — Write f for ph, as in philosophy.

The use of the joint rules is left to the discretion of the practitioners of this art. The Spelling-Reform As accepting, as in previous instances the advice of the philologists, has also adopted the joint rules for its publications, and the Bulletin of the West Virginia Press Association taking measures toward beginning their u-cational and stenographic journals, new magazines, and other periodicals, has also, in its first number, already used some amended spellings, as of them had spelling-reform departures those who wish to make a protest against current spelling without changing the American-English spelling, should consult the Association at once.
Spelling Reform. STEWART, HERBERT. 745

ack, king, ask, and pitk, and dê and or the first consonants in tæa and Longley, of Cincinnati, who pub-
lished the "American Phonetic Dictionary" by Nathaniel Sterle, continues
of reform. His "Phonetic Edu-

The Jovra or American Or-

glish is printed entirely in phonetic
in alphabet devised by its editor, C.
of Rangoos, N. J.

79, comprires an Educational Sec-

An expedient means of teaching
and the present spelling: a Filo-

The introduction of phonetic
lological, literary, and general
S a Progressiv Section, for making
reforms in the ordinary spelling.
ists of this Association are A.
n as A. Bain, J. Lubbock, W. W.
Mundella, A. Tennison, and E.
offices are at 8 John St., Adelphi,
C. The English spelling-reform
hundred years ago asked only for
ge in spelling, but phonetic simplicity
al as 1868, when Sir Thomas
ht a book containing a complete
as. Other writers, including Ben-
 serão simplicity was attained in 1755,
Johnson, who scented the idea
spelling conform to pronunciation,
dictionary. Yet the calls for a
Benjamin Franklin
rane became more frequent, and
move may be said to hav
us. From that time to the pres-
ty, or phonetic print, which grew
Pitman's phonography, has been con-
e the public. Mr. Pitman is still
dier of reform literature in Eng-
s "Phonetic Journal," a weekly
ography and spelling reform, com-
year with 1894, having a
seven thousand. Alexander
et in the spelling reform. From
he work with Mr. Pitman, and
wrote "A Plea for Phonetic
ich is the most complete state-
case ever published. Recently he
ed the reform within the Philo-
ty, and has prepared papers for the
actions, and various popular writ-
tes on this subject. The chief
movement is yet not a declina-
ge than a disputing of the reform-

er arguments. Another hindrance is the lack of
agreement among reformers as to how cer-
tain sounds shall be represented. Sum wish to
ad thirteen new letters to the alphabet, others
fewer, while still others prefer to use only the
letters and accents with which other important
modern languages are written. Much of the
energy of the reformers is spent in efforts to de-

e schemes that shall be acceptable to all, and
to win one another's adherence. Indifferent
ersons, when approach on the general sub-
ject, urge this state of affairs as an excuse for
continued indifference. The reformers are,
evertheless, confident of final success. A list of
spelling-reform literature may be found in the
"Circular of Information," No. 7, 1880, of the
Bureau of Education at Washington.

A simplification of German spelling has
gained considerable ground. The movement re-
cived a notable impetus from Jacob Grimm, but
the first important action was the calling,
by the Prussian Government in 1876, of a con-
ference of leading educators to consider this
subject. No definite plan was agreed upon,
but a newspaper discussion was aroused, and
general attention was drawn to the matter.
In the same year a "Society for Simplified
German Spelling" was organized by Dr. F. W.
Erikke, of Wiesbaden, who soon also estab-
lished an organ for the society, entitled "Re-
form." By a ministerial decree, sum of the
changes proposed by the society, such as dropping
silent e following t, writing singl for
dbl letters in certain words, f for ph, etc.,
were made obligatory in text-books for the

tary schools of Prussia from April 1, 1880,
and for the secondary schools five years later.
Most of the other German governments adopted
the same rules, as did the Austrian. There is
a second German Spelling-Reform Society,
with a periodical, edited by Dr. W. Vietor, of
Wiesbaden, among whose objects is the use of
Roman letters, and of small-letter initials for
nouns. It is reported that the Ottoman Porte
is forming an academy for the Turkish lan-
guage, the main object of which is to carry
out a system of spelling reform in the depart-
ment of public instruction.

STEWART, Sir Herbert, an English soldier, born in 1841; died of wounds received in
battle, at Gakdul Wells, Egypt, Feb. 16, 1885.
He entered the military service in 1863, pur-
chasing a commission under the old system,
and was made a captain in 1865. Ten years
later he was graduated at the Staff College,
and the next year, 1879, he took part in the
Zulu War. As brigade-major of cavalry he
distinguished himself, especially in the opera-
tions against Sekukuni, and at the close of
the war he held the rank of lieutenant-colonel.
He also became chief of staff and military
secretary to Gen. Wolseley. In 1891 he was
on special duty in South Africa, and in the
Boer War he was assistant-adjutant and quar-
termaster-general. The disaster at Mafhiba
Hill threatened to end his career, but the firm
friendship of Wolseley prevented his dismissal. In the campaign in Egypt in 1888 he did good service with the cavalry, distinguishing himself especially at Kassassin, and at the capture of Cairo. For this he was promoted and made aide-de-camp to the Queen. In the Soudan he commanded the cavalry brigade under Graham, distinguishing himself at El-Teb, Tamai, and Tel-el-Kebir, for which he was knighted, and participated in Gen. Low's ride through the desert to Cairo. He commanded the division that crossed the Bayuda Desert from Korti to Metemmeh for the purpose of communicating with and ultimately rescuing Gen. Gordon, who was then shut up in Khartoum. On Jan. 17, 1885, they fought a battle at Abu-Klea Wells, and on the 19th another at Shehakat. Here Gen. Stewart received his wound. He was carried with the other wounded to Gakdul Wells, where he died. He was buried, with military honors, at the entrance of the valley that leads to Gakdul.

**STIGMATA MAIDIS.** See Druze, New.

**SURGERY.** The year 1884 was not marked by any special innovations in the province of surgery, though the tendency was toward increased boldness, especially in operations within the abdomen. Cleanliness is now universally insisted upon. There is a disposition to return to the simplest form of dressings and after-treatment. Conservatism in regard to treatment of severe injuries is a marks sure of modern surgery. There is a disposition to trust to the curative nature; many limbs are saved that would have been amputated. Perineum has steadily become more sure though American statistics are still less ing than those of foreign authors. The reason for this, as seems a recent distinguished English, or, is doubtless because its lessers give their exclusive attention to special work, and hence avoid sources of infection to which a general operator is exposed.

**Dressings.**—While the ye version no essential changes in the important branch of surgery, various modifications were introduced. Lister himself, with whose antiseptic surgery is so closely connected, has made some important suggestions in regard to the dressing of wounds. In his latest contribution upon the subject not only acknowledges the use of spray, which he had formerly insisted upon, but sums up the whole matter with these words: "We do not require aseptic theory in order to aseptic treatment. You believe in the germ-theory if you are not convinced of the germ-theory of purulent and of septic agencies; you believe in antiseptic practice, all to believe is that there are things as aseptic action and septic agencies, that we are liable to them, that they are pathogenic, that these things from without, and that we have the means of preventing them by various chemicals. This is all that we require, and anybody that knows the present surgical practice must admit these facts. It has sometimes been a great relief to me that, because gentlemen are convinced of the germ-theory out-and-out, they lay aside antiseptic treatment altogether." Still later, in his address before the Medical Society of London, Oct. 20, 1887, he made this frank statement: "When I dress delivered at the opening meeting of the session, I expressed myself in what I thought to be regarded as terms of overweening confidence in antiseptic treatment, I little thought a year later I should have to follow up failures on my own part."

Following out this idea, we find that adherents, both in America and abroad, seldom use the spray, except in abortive surgery, while in ordinary operations
ulliness, free drainage, and the
actions as have been proved by
not only powerful germicides,
the patient. The latter con-
tain important,
ecological substances that
лись reputation as antiseptic,
corrosive sublimate, and
regarded as the agents now
in use. The former fell into
in several cases in which its
lowing by alarming and even fatal
and iodoform was introduced.
But the lavish use of iodo-
are wounds was also attended
in several instances, so that
also viewed with disfavor.
acquaintance with its prop-
its being restored to its former
l dressing, and it is now used
scale, especially in Vienna.
satisfactory results.
 of corrosive sublimate, of a
part in one or two thousand,
he elements of cleanliness, ger-
und safety. Lister, in a late
advocated the employment of
which he regards as equal, if
arabolic acid.
ployed in German surgery,
simple and efficient dressing,
th Billroth. The details of
so few that they may be car-
on-professional person. The
ugly cleansed with the subil-
trauma tube (now made of
 is introduced, it is sewed up
ut sutures, and the surface is
owered iodoform. Several
injected with the same
ed, and secured with a band-
ares injected with "iodoform
icial cuts are hermetically
orm colloidal," while small
eful with gelatine) are thrust into deep,
and allowed to dissolve there.
" says a recent writer, "the
acid is over and corrosive sub-
its stead." This is not strictly
ent is widely used. Dressings
otto, peat, wood-pulp, moss,
, ed glass, are saturated with the
plied directly to the wound.
ingen, has lately introduced a
ells "wood-wool." It is
od, such as is used in making
, soft material, of extraor-
able of absorbing a large
It may be applied to the sur-
after being dipped in the
. Such a dressing need not
ay said to give a general idea
ate of antisepic surgery. Its
y is toward the simplifica-
tion of details, cleanliness being more strongly
insisted upon than ever. Although surprising
results have been attained during the past year
by operators that strongly repudiate "Lister-
ism," these same surgeons owe their success to
the rigid adherence to the cardinal principle of
that system, cleanliness.

Cold Water.—This agent has been more sys-
tematically employed than formerly, in the
after-treatment of surgical cases. An old in-
vention, but one recently reintroduced, is the
cold-water coil, which consists of coils of rub-
er or metal tubing of all shapes and sizes.
ese may be placed upon the head, spine, ab-
domen, or around a wounded limb, and kept
cool by the action of a constant stream of ice-
water flowing through them. This appliance is
most efficacious in subduing inflammation and
lowering fever. It is especially useful in perito-
neitis following operations within the abdomi-
nal cavity.

Rectal Etherisation.—This novel method of ad-
ministering ether has recently attracted a good
deal of attention among surgeons. The credit of
the origination of this process has been given
to Dr. Molière, of Lyons, but it is certain that
it was practiced by Pirogoff as early as 1847.
The modus operandi may be described in a few
words. The anaesthetic is contained in an
ordinary glass flask, which is placed in a dish
of warm water. One end of a rubber tube is
attached to the neck of the bottle, while the other
end is inserted in the rectum. The
ether is gradually evaporated by the heat of
the water, and its vapor passes up into the
bowel, by the mucous membrane of which it is
rapidly absorbed. The patient complains,
within a few seconds, of an etherish taste in
the mouth, and the peculiar odor of the drug
can be detected in his breath. The nose becomes
rapid, the pupils dilate, the patient stiff-
ens out his limbs, and finally becomes uncon-
scious. The advantages claimed for this meth-
do are, the absence of the preliminary stage of
excitement, which is so often noticed; when
the vapor is inhaled, the fact that there is less
liability to vomiting after recovery, and the
greater convenience of the surgeon, especially
in operations about the face. But in spite of
the enthusiasm with which this novelty was
hailed, the occurrence of several deaths as a
direct result of the procedure has proved that
it is not as harmless as was supposed. That
ether, the safest of anaesthetics, becomes un-
manageable when administered by the rectum,
is now certain; there is danger of severe con-
gestion of the mucous membrane of the bowel,
and fatal cases of intestinal hemorrhage have
been reported. A recent writer concludes an
article upon this subject with these cautions:
Reserve rectal etherisation for cases in which
there are positive objections to the ordinary
mode of administration. Never give it then,
except to robust adults. Never use more than
two ounces of ether, and remove the tube from
the rectum as soon as insensibility is complete.
ty of brown bile. Of late the many favorable results have been claimed for weak solutions of salt, the idea being that in this way the lost fluid is restored to the vessels and the heart's action is sustained. A small quantity of the solution (having a strength of 1 to 150) is injected slowly into the principal vein of the forearm, through a glass tube; from five to fifteen hundred centigrammes are sufficient. Many cases have been reported in which life has been saved by this simple process.

Bladder, Operations on.—The old operation of supra-pubic lithotomy, or removal of stone by an incision made through the abdomen into the bladder, has been highly recommended by French surgeons, and bids fair to be generally resorted to in certain cases to which lithotritry and the ordinary lithotomy operation are inapplicable, as in aged patients and young girls, and where the bladder is very sensitive; also where the stone is very large, or is encysted—so inclosed in the mucous membrane that it can not be extracted through a small opening.

Sir Henry Thompson has called attention to certain cases in which it is justifiable to open the bladder and explore its interior, in order to discover, and remove if possible, the cause of distressing symptoms. Hemorrhage from the organ, without a clear cause, is the principal indication for the operation. In simple cases the mere opening of the bladder, and the establishing of free drainage, are sufficient to effect a cure. If a tumor is present (unless it be an extensive cancer), it is removed.

Laryngotomy.—Formerly removal of the entire larynx was regarded as an impossible operation. It has now been accomplished upward of sixty times, generally for cancer, with a mortality of 60 per cent. Although the operation is condemned by American surgeons, who prefer the palliative measure, tracheotomy, or opening of the windpipe, laryngotomy is considered as justifiable where the patient is not above fifty years of age and enjoys good general health, and where the disease is limited to

this operation—a formidable argument to resort to such an extreme measure for the cure of leucocytosis. The same writer calls attention to the interesting fact that removal of the spleen, the white corpuscles of the blood become at first greatly increased in number, but afterward return to their condition; and but infers from this that the spleen, doubtless, transforms the white corpuscles into red. He suggests that the gland probably discharges the duty of secreting after the ablation of the latter, it should not be forgotten that serious injuries to the abdomen where the normal protrudes from the wound, its removal is attended with far less risk than when the extremity is extirpated for disease.

Resection of the Lung.—This bold operation was actually carried out successfully by an Italian surgeon. The patient was a man, with a large phthisical cavity in the lung. The entire upper lobe was taken through an opening made in the side of the chest, two ribs being removed to give sufficient room. There was no hindrance during and after the operation, and the patient lived for seven months. This account is introduced more for the sake of giving the reader some idea of the boldness of modern surgery, than of applauding a desperate measure.

Resection of the Pyriform.—This operation is referred to in a former volume. All cases are now on record in which a part of the stomach has been removed for cancer as many more in which the whole organ has been opened; but it was necessary to abandon the attempt, on account of unlooked-for complications. The appalling mortality of 85 per cent. has deterred American surgeons from undertaking the operation. Billroth has been particularly identified with the doings not regard it with as much favor as formerly. So difficult is it to determine
to the intestine, and the patient starving to death. The stomach incision through the abdomen, and its anterior wall is opened on the two ends. The index- and is then passed down through and the other forefinger is in it. The contracted canal is paring the two fingers, just as to the mouth of a rubber bagging has been made large enough withdrawn, and the wound of closed with fine silk. Two packs permanently cured by this.

Nerves.—Nerve-stretching is alteration, but it has been prac-
dy during the past year with specially in cases of intractable surgery do not ever despair now functions of a nerve that has divided for months. After it is completely lost in the parts the nerve, it has been perfectly a year when the separated right together and united by a stitches.

Patch.—Fracture of the knee-
seen the bein noir of surgeons, possible to keep the fragments down so as to obtain bone union. Right into notice an old opera-
daled fallen into disuse, for avoid-
ment of the pieces by cutting id wiring them together. Suffered from this as an re, on account of their dread of amputation of the knee-joint; but ed that, with due antiseptic pre-
not only justifiable, but highly a sample has been followed by , both in Europe and America.

Brain.—A successful case has reported in England, in which ond, and a tumor as large as usually removed from the brain was necessary to penetrate to a quarter of an inch in order growth. The exact position and nor were accurately diagnosed. Brain was incised.

NORWAY, two kingdoms ocu-
cinavian Peninsula in northern indubitably, by the Riksaet of rion of the sovereign. Success-
ance is hereditary in the house of
The throne is to be filled, in te vacancy, by the joint action ritualms. The common affairs kingdoms are decided upon by a to.

King is Oscar II, born Jan. 21, 1829, of Marshal Bernadotte, and the form of the line.

constitutions.—The legislative pow-
in the Diet, subject to the as-
king, save in matters of politi-

SWEDEN AND NORWAY. 749

administration and taxation, the former of which is the exclusive province of the sovereign, and the latter that of the Diet. The Diet consists of two chambers, both elective. The franchise is limited by a property qualification.

Area and Population.—The area of Sweden is 170,979 square miles. The population on Dec. 31, 1883, was 4,963,583, of which number 2,230,782 were males and 2,732,801 females. The number of marriages in 1882 was 28,787; of births, 138,064; of deaths, 83,170; surplus of births, 54,894. The number of emigrants in 1882 was 50,178, against 43,922 in 1881, 42,109 in 1880, 17,637 in 1879, 9,662 in 1878, and 7,610 in 1877. The population in 1880 was divided as to religion into 4,344,854 Lutherans, 14,627 Baptists, 1,591 Methodists, 810 Roman Catholics, 2,963 Israelisites, and 1,213 Mormons and other dissenters. The number of persons of foreign birth was 18,837. The city of Stockholm contained in 1883 194,469 inhabitants, Gothenburg 81,507.

Commerce.—The total value of the imports in 1882 was 229,929,000 crowns, against 258,060,000 in 1881, and 282,788,000 in 1880; the total value of the exports 253,887,000, against 223,196,000 in 1881, and 236,643,000 in 1880. The imports from Germany were 83,906,000 crowns in value, from England 78,201,000, from Denmark 62,334,000, from Norway 18,812,000, from Russia 16,815,000, those from the United States 6,173,000 crowns; the exports to Great Britain 127,457,000, to France 33,566,000, to Denmark 24,707,000, to Germany 18,373,000, those to the United States 1,611,000 crowns.

Navigation.—The tonnage entered with cargoes at Swedish ports in 1882 was 1,882,043 tons, 979,675 Swedish, 174,138 Norwegian, and 728,029 foreign; the tonnage cleared with cargoes 3,367,361 tons, 1,296,917 Swedish, 732,703 Norwegian, and 1,397,741 foreign.

The mercantile marine in 1882 had a sailing tonnage of 68,796 tons employed exclusively in domestic commerce, and 386,385 tons employed in foreign commerce, and a steam tonnage of 31,673 tons employed in the domestic and 60,826 in the foreign commerce.

Communications.—The railroads had at the end of 1882 a length of 6,499 kilometres, 2,299 belonging to the state, and 4,101 to companies.

The post-office forwarded in 1882 39,906,584 letters and cards, 4,035,110 printed inclosures, and 26,326,518 journals. The receipts were 5,657,969, the expenses 4,797,364 crowns.

The state telegraph system had 8,551 kilometres of lines and 20,712 of wires in 1883. The dispatches numbered 1,209,088, of which 437,224 were international. The receipts were 1,350,442, the expenses 1,244,900 crowns.

Finance.—The budget for 1885 gives the total receipts from all sources as 80,900,000 crowns (1 crown = 28 cents); 5,317,000 being the balance in the treasury; 21,570,000 crowns the ordinary receipts from direct taxes, domains and forests, telegraphs, railroads, etc.; 51,910,000 crowns the extraordinary receipts from
customs and excise duties, stamps, post-office, etc.; 306,000 crowns the receipts of the reserved postal fund, and 1,800,000 crowns the net receipts of the Bank of Sweden.

The expenditures are estimated at the same sum. The ordinary expenditures are fixed at 59,912,490 crowns, of which 1,388,000 are for the royal household, 5,756,000 for justice, 618,800 for foreign affairs, 17,397,200 for the army, 5,522,000 for the navy, 4,501,285 for the interior department, 10,261,046 for public instruction and worship, 2,621,100 for pensions, and 13,700,000 for financial administration. The extraordinary expenditures are stated as 9,685,570 crowns, 5,283,800 for the army and navy, and 5,751,770 for various departments. The expenditures for the public debt amount to 10,227,000 crowns, 900,000 crowns are reserved for the construction of the new palace for the Diet, and 825,000 left as a surplus.

The public debt, contracted solely for railroad construction, amounted, on Jan. 1, 1884, to 227,871,675 crowns, of which 198,815,375 represented foreign loans, paying 4 and 4½ per cent. interest, and 34,056,400 domestic loans.

The Army.—The army is composed of five classes of troops: men enlisted for three, four, and six years, forming the guards, hussars, artillery, and engineers; the Indelta, who are enlisted for life and cantoned on the estates of the land-owners; the Gottland militia, not liable to service outside of the island; the conscripted troops, who are called out annually for fifteen days; and the volunteer rifle corps. The first two classes constitute the standing army. The effective in 1884 of the enlisted troops was 2,298 infantry, 1,066 cavalry, 8,729 artillery, and 894 engineers; of the cantoned troops, 28,017 infantry and 5,557 cavalry; total regular army, 34,493 enlisted men. The military forces are all five classes numbered 193,160 officers and men, with 262 cannons and 6,490 horses.

The Navy.—The navy in 1888 consisted of 46 steamers, with 117 guns, 10 sail-ships, and 67 gun-boats. There were 1 frigate, 5 corvettes, 4 torpedo-boats, and a number of small monitors and gun-boats.

Legislation and Politics.—The Diet, during the session that closed May 15, passed a patent law based on the German law and the international patent convention, an act regulating the property rights of married women, a mining law, an act abolishing the penalty of a bread-and-water diet in prisons, and other useful measures. The attempt of the Government to carry through parts of the army bill that was rejected in 1883 was unsuccessful. The lower house passed measures for the remission of the land-tax, and the relief of the peasants from the burden of supporting the cantoned troops. The large proprietors, who escape this burden, and who furnish the majority of the representatives in the upper house, defeated the proposed 10 per cent. reduction in the military land-tax. In the elections for the lower chamber in the beginning of October a Liberal party, with the Peasant party, captured from the conservatives sixteen out of the nineteen. This new movement of the democracy of the town-people promises an entrance with the aristocratic and military which have ruled the country in their interest, and hitherto resisted the exhortations of the farming class.

Norway. Constitution.—The Gram Nov. 4, 1914, vests the legislative power in the Storting. The executive authority is exercised in the name of the King by a Council, composed of two Ministers and at least seven councilors. Two of these Ministers, or of the councilors, form a deputation residing near London, to negotiate the commercial relations of the country.

Area and Population.—The area of No is 12,890 square miles. The population of 1880 was estimated to be 1,168,315. The number of marriages in 1884 was 8,747; births, 58,375; deaths, 38,325; births, 34,050. The number of new emigrants in 1882 was 28,804; in 1883, 20,216. Of these, 7,694 Finns, 14,645 sedentary Lapps, and 8,000 farmers. Among the inhabitants of Norway is 187,500 nomadic Lapps, and 8,000 sedentary Lapps. The number of persons of foreign birth was 29,340, of whom 20,340 were born in Sweden. The nation is divided into three kingdoms: the Kingdom of Christiania, the capital, at Oslo, Bergen, 38,880.

Commerse.—The total value of the imports in 1888 was 161,315,000 crowns, against 185,000,000 in 1882; of the exports 116,189,000 122,955,000 crowns. The imports amounted to 46,800,000 crowns. Great Britain 42,383,000, from Sweden 111,000, from Russia and Finland 14 DENMARK 200,000; the exports to Great Britain were 40,107,000 crowns in Germany 16,779,000, to Sweden 14,1,055,000. The import trade of the United States was of the value of 90,000 crowns, the export trade, 322,000.

Navigation.—The aggregate tonnage entered at Norwegian ports in 1882 was 470 tons, of which 1,924,351 were Norwegian and 746,359 under for the tonnage entered with cargoes 965; in ballast, 1,095,655. The total cleared was 2,192,069; Norwegian, 249,416; with cargoes, 1,838,049.

The merchant fleet in 1888 numbered vessels of 1,880,004 tons, manned sailors, as compared with 7,977 vessels 404 tons, and 60,064,000 sailors, Jan. 1, steam fleet in 1882 consisted of 407 82,519 tons.

Communications.—The length of the operation at the close of 1883 was 2 metres. The number of letters for the post-office in 1888 was 13,063,74 and 5,179,299 foreign; the number of
an amount of money transmitted, owns. The receipts were 2, 1,955,029 crowns. The belonging to the state had a 7,396 kilometres in the begin- length of wires, 18,637 kilo- number of messages sent was 4,094 were foreign. The 72,687, the expenses 1,027,306 were 1,611 kilometres of lines, one metre of wire, belonging to nies.

he military forces consist of the (landvaern, train, and the lan- dmy of the line is limited to 750 900 men, recruited by voluntary the conscription of young men rs of age to make up the com- landvaern is only required to ease of the country. The land- be organized in case of extreme

he war-fleet consisted in 1884 of 3 of all classes, with 150 guns, accessi. the receipts of the treasury dur- year ending June 30, 1888, were was from ordinary sources and was including proceeds of loans struction and the loan of 1888, pts from customs were 20,515, rom the liquor - tax, 3,255,100; -tax, 2,350,000; from railroads, ex expenditures for ordinary nted to 40,009,300, for railroad o 3,255,100 crowns. The ex- the army were 3,350,200; for istration, 9,819,200; for the in- working expenses of railroad, public instruction, justice, police, and sanitary serv- rows.

ets on June 30, 1883, amounted crowns, paying 4 per cent. in- the loan of 20,009,200 crowns 4 per cent. The reproductive rate were valued at 129,484,000 w 4 per cent. Loan of 20,111,200 gotiated in Germany. The loan, a redeemable within forty years, market price.

of the Ministers.—The constitu- over the question of ministerial was brought to an issue by the identing taken April 23, 1883, ion to impeach the ministers. proposed a compromise on the ge of ministers and the abandon-ject of a State Council. The insisted on maintaining the right choose his advisers. The men- thing and the justices of the Su- ern together the tribunal for the men. This court held a pre- March 7. Of the twenty- of the Lagthing, twenty-four had voted, as deputies in the Storthing, for the re- solve of June 9, 1880, in favor of the impeachment of the ministry. Their competency was therefore called into question, but was affirmed by the votes of the entire Lagthing and one of the judges of the Supreme Court against those of the other eight judges. The tribunal, after the rejection of twelve of the most ardent partisans by the accused, consisted of seventeen members of the Lagthing, most of them farmers, and only one a lawyer, with the nine justices. Minister of State Selmer was sum- moned to appear before the court, August 7. The sittings were taken up with questions of organization and procedure until October 23, when the trial of the Prime Minister began. He was charged with official misprisions, for which it was moved that he be dismissed from his post, disqualified for every public trust, and mulcted in the costs of the action. The court sat continuously until Feb. 27, 1884, when the judgment was delivered. Selmer was con- demned to lose his office as Minister of State and member of the King's Council, and to bear the costs of the prosecution, because he had advised the King (1) not to sanction the attend- ance of the Cabinet at the deliberations of the Storthing in pursuance of the resolve of the Storthing adopted March 17, 1880; (2) not to execute the act of the Storthing in relation to appropriations for the Associations for Arming the People, and the Society for the Advance- ment of Corporal and Martial Exercises, passed June 14, 1882; and (3) not to enforce certain provisions of the act of June 16 and 17, 1882, in relation to the pay of the railroad officials. The latter directed that two members of the Storthing should participate in the central ad- ministration of the railroads. The act on which the second count in the indictment was based granted 30,000 crowns for the benefit of volun- teer rifle associations. The Conservatives urged the King to annul the decision, which was offi- cially notified to him March 1. Such an act would be a direct breach of the Constitution, and being so advised by the Minister of Jus- tice, he decided, March 11, to remove Selmer, who had meanwhile proffered his resignation.

The case of Minister of State Kierulf was opened March 7. The advocate for the de- fense demanded the exclusion of six of the members of the Lagthing who as members of the Liberal Union in the Storthing had assisted in conducting the initiatory steps of the action against the ministry. When the judge re- fused to investigate the matter, he and his client refused to make any defense. On March 17 Kierulf was condemned to the same penalties as Selmer. The nine other accused ministers declined likewise to put in any defense, basing their refusal on the action of the judges in taking up their cases collectively and on the ruling on the question of competency raised in the Kierulf case. Vogt, Holmboe, Halliesen, Jensen, Munch, and Bechke, were removed one after the other between the 20th and 29th
absolute veto in all constitutional matters, and construed the first enactment that was nullified as involving the constitutional question of the right of the King to direct the administration. The two financial measures that were vetoed brought up the question of the right of the King to veto money grants, which the Radicals denied and the Conservatives upheld. Both parties really aimed at an alteration of the Constitution. The Conservatives, who have no constituency among the rural class that form the great mass of the population, desired to curtail the rights of representative government by enlarging the legislative prerogative of the Crown and creating a State Council, while the Radicals wished to introduce responsible government and to compel the King to select his ministers from the party representing the opinions and interests of the great majority of the people. The act requiring the attendance of ministers in the Storting was intended to introduce the principle of ministerial responsibility, that for admitting two members of the Storting to the railroad directory to establish the principle of parliamentary control over the administration, and that subsidizing volunteer military associations was avowedly directed to the creation of a "Parliament army," which would defend, if necessary, the rights and aspirations of the people against the royal troops.

After the decision of the court against the indicted ministers, the Swedish Government threatened to intervene on the ground that, if the absolute veto of the King in constitutional questions was denied, the Norwegian Legislature would have the power to annul the union of the two kingdoms. The King, in dismissing Selmer, issued a manifesto protesting against the result of the trial on this ground, and declaring his determination to maintain the absolute veto and all the powers guaranteed to the King by the Constitution.

The importance of maintaining the royal prerogative was impressed upon King Oscar by the storm throughout the country, which more violent when the Government proceeded against a number of newspaper writers, among them the poet Bjørn lese-majority, and in other ways in such regime of violent repression. Inhospitable of moderate and conservative views to the King to come to a compromise with the Radicals. Dr. Broch attacked the即是, but was unable to form a moderate cabinet. The Conservatives refused to conduct the movement longer unless the King would take the position he had taken upon the advice with military force. The King we take the responsibility of plunging the country into civil war. He was compelled, either to abdicate or to accept a Radical party, to form a Cabinet. The ministry was constituted June 26, and had the following members: M. Johan Sten Berg, Minister of State, with residence at Christiania; and Minister of Marine; M. Daae, Minister of War; M. Stornes, Minister of Justice; Arctander, Minister of the Interior; Haugland, Minister of Finance; Frederiksen, Minister of Public Worship; Consul-General Richter, Minister of State in Stockholm; Jacob Sverdrup and M. Stang, of State to reside at Stockholm. The ministry is not composed entirely of Liberal element, but contains five Liberal ministers, viz., Richter, Daae, Stornes, and Stang.

SWITZERLAND, a federal republic in Europe. The legislative and executive authority of the confederacy is vested in the State Council, composed of 44 members by the twenty-two cantons, and the Council or Nationalrat, chosen by division at the rate of one member for every 10,000 inhabitants. Every male citizen over 20 years of age is a voter. The Chambers united form
population, see "Annual Cyclopedia" for 1863.)

The following cities contained over 40,000 inhabitants: Geneva, 50,043, with suburbs 68,-
s20; Zurich, 25,103, with suburbs 75,906;
Basel, 61,399; Bern, 44,087.

Fiances.—The total receipts in 1885 amounted
to 50,456,186 francs. The revenue from
taxes on capital and lands was 675,874, from
the interest on invested capital and subven-
tions 295,741, from customs 20,121,994, from
the post-office 15,354,796, from telegraphs
2,699,675, from the powder monopoly 595,137,
from the mint, including new coining issues,
6,054,491, from the Federal stud 194,074, from
war materials 1,021,271, from the laboratory,
etc. 1,781,923, from the military administration
1,836,347, from the various departments
9,050,223, unforeseen 1,493 francs.

The total expenditures were 50,083,764
francs in amount, of which 1,869,107 francs
were for interest and payments of capital,
774,235 for general administrative expenses,
5,504,289 for the departments, 13,714,080 for the
army, 1,368,127 for the customs service,
14,008,675 for the post-office, 2,304,491 for
telegraph and telephone service, 507,712 for
the powder manufacture, 6,054,481 for the
mint, 501,550 for the polytechnic school, 158,-
315 for the stud, 1,011,986 for war materials,
1,682,880 for the laboratory, etc., 187,824 for
railroads, and 112,464 unforeseen.

The expenditures for 1884 were fixed in the
budget at 45,193,000, and the revenue at 45,-
198,000 francs. The budget for 1885 makes
the total income 46,972,000 and the expendi-
tures 46,050,000 francs. The supplementary
credits are likely to swell the deficit to 600,-
000 francs. The Federal expenditures are
lower under the new laws and requirements
than the normal revenue.

The general assets of the Confederation are
497,923 francs in amount, and special funds
588,271, making the sum of 52,518,194 francs.
The public loans amount to 35,594,236 francs.
The assets above this amount, and the currency
were 16,721,998 francs on the 31st of December, 1883.

The total receipts of the cantons in 1878 amounted to 39,743,726 francs, the expendi-
tures to 44,108,078 francs, their total assets to
494,938,098 francs, their debts to 293,793,873.

Commerce.—The custom-house authorities take
account only of the quantities of most of the
exports and imports. The imports of articles
free of duty in 1888 were 2,949,728 metric
quintals, the exports 717,392; the imports of
articles of food, drink, groceries, and tobacco
5,873,698 quintals, exports 494,220; imports
of animals and animal products 95,758, exports
65,815 quintals; imports of earth and minerals
592,506, exports 205,538 quintals; imports of
textile materials, straw, rubber, etc., 543,317,
exports 347,582 quintals; imports of wood and
manufactures thereof 1,383,985, exports 178,-
039 quintals; imports of glass and crockery
313,015, exports 121,296 quintals; imports of
paper, books, art objects, etc., 52,689, exports
41,601 quintals; imports of hardware, etc.,
44,545, exports 24,781 quintals; imports of
drugs, dyes, and chemicals 589,496, exports
229,769 quintals; imports of gums, plants,
etc., 7,488,318, exports 929,510 quintals; total
imports of articles taxed by weight 21,710,629
quintals, total exports 3,048,346. The value
imported of cars, machines, and other articles
paying ad valorem duties was 1,515,838 francs.
The value of timber and charcoal exported
was 7,764,821 francs. The number of head
of cattle imported was 254,548, exported 120,-
451. The imports of goods of the first cate-
gory from Germany were 15,698,576 quintals,
from France 6,726,884, from Austria 1,794,978,
from Italy 1,099,394; the exports to Germany
1,294,862, to France 1,142,545, to Italy 584,-
561, to Austria 276,583 quintals.

Railroads.—The length of railroads in opera-
tion at the close of 1885 was 2,292 kilometres,
their capitalized value 1,080,063,389 francs, the
cost of construction 943,918,419 francs, the
receipts in 1885, 69,445,685 francs, the ex-
penses 35,917,699 francs.

The Post-Office.—The number of letters and
cards forwarded in 1888 was 86,137,385, 58,-
029,077 internal and 28,108,208 internation-
al. The number of passengers transported in
the mail-coaches was 751,908. The receipts
amounted to 15,564,796 francs, the expenses
to 14,008,973 francs.

Telegraphs.—The length of lines belonging
to the state at the end of 1885 was 6,832 kilo-
metres, of wires 16,584. The number of in-
ternal messages was 1,750,946, of foreign mes-
gages 866,038, the receipts 2,611,426, expenses
2,334,491 francs.

The Army.—The Federal army is composed of
the regular army, or Bundeswehr, made
up of young men between twenty and thirty-
two years of age, and the Landwehr, which
comprises all between thirty-two and forty-
four years of age. The effective on Jan. 1,
1884, of the regular army was 118,838 offi-
cers and men and the Landwehr 88,126.

Elections.—In the election for the National Council, held Oct. 26, most of the sitting mem-
bers were re-elected, and the proportion of
the parties remained the same, notwithstanding
the success of the Conservatives and Ultra-
montanes in securing a majority in various
referendums during the preceding two years.
All the members of the Federal Council re-
tained their seats in the Assembly. The Lib-
erals and Radicals have about double the num-
ber of votes in the Assembly possessed by the
Conservatives and Clericals. The election of
the Federal Council took place Dec. 5. All
the members were re-elected. Dr. K. Schenk,
of Canton Bern, the Vice-President in 1884,
succeeded in the regular routine to the Presi-
dency. Dr. A. Deucher, of Thurgau, was
elected Vice-President, F. Ringier was again
chosen Chancellor; and G. Oligasti, the previ-

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TENNESSEE.

The following are the State officers during the year: Governor, William B. Bate, Democrat; Secretary of State, D. A. Nunn; Treasurer and Insurer, Commissioner, A. A. Thomas; Comptroller, P. P. Pickard; Attorney-General, B. H. Tinsley; Commissioner of Agriculture, S. A. and M. S. McWhirter; Register of Deeds, W. S. W. Winburn; Railroad Commissioner, John H. Savage, G. W. Gordon, and J. N. Bragg. Judiciary, Supreme Court: Chief Justice, James W. Deaderick; Associate Justices, William F. Cooper, Thomas J. Freeman, J. R. Turner, and Robert McFarland.

The receipts, from all sources, for years ending Dec. 19, 1884, inclusive, were $4,333,94, which includes a balance of $790,76 turned over by the M. T. Polk ingesting committee. This total also includes interest of revenue paid into the treasury by the State's attorneys on back-tax collections, $157,401.64. The disbursements for the years ending Dec. 19, 1884, amounted to $1,799,11, leaving a balance in the treasury at State House of $1,314,88. For the year $463,87 includes $189,475.80 of new issue of 6 per cent. Tennessee certificates, and old issue of Tennessee certificates, which leave $605,43 in actual available funds in the treasury, $1,141,41 controversy in the Mechanics' Bank of Knoxville.

The appropriations for two years drawn up Dec. 19, 1884, amount to $1,766,207.15.

The obligations of the State provided for by the terms of the law relative to the settlement of the State debt (act of 1883), at the time of filing in week ended July 1884, amounted to $28,788,666.89, including principal and interest. Of this amount the "State proper" bonds amount to $2,185,150; charitable, and other bonds, that with "State debt proper" bonds are, by act of 1883, 6 per cent. bearing bonds, $1,500,000, making $2,385,150 on which the State will have to pay 6 per cent.

Deducting this latter amount ($2,385,150) from the total bonded indebtedness ($28,788,666.89), leaves $26,602,916.39, and taking 50 per cent. thereof (principal and interest), there will remain $13,001,458.19, upon which the State will have to pay 3 per cent. interest. This makes the total bonded indebtedness of the State under the operation of the act of 1883, about $15,794,608.19.

The Funding Board—The Funding Board began its operations in July, 1884. Since that time, the bonds funded amounted to $2,090,78, leaving Jan. 1, 1886, $20,606,80.

For the amount funded there were issued: 6 per cent. bonds, $562,100; 5 per cent. bonds, $817,100; 3 per cent. bonds, $3,445,800.

A cause of financial embarrassment to the State has grown out of the "Torbett Issue," or notes of the old State Bank, issued principally during the war, which the State is constrained under a decision of the Supreme Court of the United States to receive for taxes; under the direction of the last Legislature the sum of $300,000 annually is taken up in taxes.

Resources.—The Comptroller's report shows that the total value of taxable property in the State in 1888, not including railroad property, amounted to $223,637,673—a total net increase for the year of $708,060. For 1884 the total value of taxable property in the State, not including railroad property, amounted to $294,844,184—a total net increase over the previous year of $4,205,511. This is largely attributable to the increased value of property, but also to superior vigilance in assessing.

Railroads.—On Sept. 19, 1883, the total mileage of railroad in the State was 2,082, of an aggregate assessed value of $31,247,329.25. The average value per mile was $15,531.42; increase of mileage over last report, nine and a fraction miles; increase of value over last report, $6,989,189.11. On July 17, 1884, the assessors returned the total number of miles of railroad in the State at 2,094, of an aggregate assessed value of $34,870,170.84. Their average value per mile for this year was $16,-

100; increase of mileage over assessment of 1883, sixty-two miles; increase of value over assessment of 1883, $2,902,671.61. The Legislature, on March 29, 1883, passed a bill pro-
Texas Districts) and seven Democratic
men were elected, but the Democratic
ity in the Third District was only 68.
Legislature of 1885 consists of 19 Demo-
: and 14 Republicans in the Senate, and
Democrats and 36 Republicans in the

Coal covers 5,100 square miles, all
of area five or more. There are twenty-
coal mines in operation. Complete re-
s for 1884 are wanting. In 1882 fifteen
were reported as an output of 850,000 tons.
se is mined at Jefferson, Polk county.
Tennessee is greatly favored, and
a coal, iron-ore, and limestone are found in
the vicinity. The black magnetic, hematite,
limestone appears at intervals throughout East-
nesses. West of Nashville, in the counties
Montgomery, Houston, Dickson,
phruses, Perry, Hickman, Lewis, Wayne,
row, limonite, a hydrate ore with yel-
order extends over an area forty miles
from Franklin to Kentucky and Alabama.
This was not extensive field for the making of char-
iron before the war. As many as eleven
uses were in full blast in the county of Montgomery, but to-day only
are running.
ies is being mined in the counties of Jef-
ion, Knox, and Claiborne. A very
use of coal-ore has been recently dis-
er near Union Depot, Sullivan county.
white and variegated marbles of Haw-
Knox, Blount, and Bradley counties, East-
nesses, have become quite celebrated. Di-
ries of variegated, gray, and brown mar-
have recently been made in Franklin,
Lawrence and Hardeman; Mid-
tennessees; and also in Decatur and Henry
ties, West Tennessee.
very rich deposit of ochre has been dis-
er near Ripley, Lauderdale county.

The State in the Union possesses a
area of forests of hard-wood, in propor-
to its aggregate area, than Tennessee.
ville has the credit of exporting more
wood than any city in the Union. The
wood, found in great abundance in the
lands of West Tennessee, offers an
field to paper-pulp manufacturers.

State Government.—The following
the State officers during the year: Gov-
John Ireland, Democrat; Lieutenant-
Marion Martin; Secretary of State,
Baines; Treasurer, Frank R. Lubbock;
poller, W. J. Swain; Attorney-General,
T. Templeton; Superintendent of Pub-
action, B. M. Baker; Commissioner of
W. C. Walsh; Commissioner of In-
Statistics, and History, H. P. Brew-
State Engineer, James H. Britton. Judi-
Supreme Court; Chief-Justice, Asa H.
; Associate J. W. Stagney, C. S. West.

The close of the fiscal year end-
ing Aug. 31, 1884, gives the results of two
years' operation of the State government with
the rate of taxation at 30 cents on $100, of
which 22 cents was for general purposes, and
7.5 cents was for public schools. In 1882
the rate of taxation was reduced from 40 cents
on $100, and a revenue poll-tax of $1, to 30
cents and a poll-tax of 50 cents. At the be-
inning of the first year under the reduced rate
there was in the treasury a revenue surplus
of $526,545.96; at the close of the year
the surplus was reduced to $345,154.23; and
at the close of the second year, Aug. 31, 1884,
the surplus was further reduced to $166,992.66,
showing that the expenditures during the two
years ending Aug. 31, 1884, exceeded the recei-
pts during the same time $381,247.

The transactions in the general revenue ac-
count for the year were as follow:

<table>
<thead>
<tr>
<th>Balance, Sept. 1, 1883</th>
<th>$418,134 92</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net revenue received</td>
<td>1,280,818 23</td>
</tr>
<tr>
<td>Expenditure</td>
<td>1,788,160 25</td>
</tr>
<tr>
<td>Total</td>
<td>$1,584,967 01</td>
</tr>
</tbody>
</table>

Balance of revenue Aug. 31, 1884 $145,290 95

The Comptroller thinks that the issue of re-
venue deficiency bonds will be necessary. He
recommends that the appropriation year, which
now ends on February 28, be made to coincide
with the fiscal year, which ends on August 31.
The special warrants (other than on the general
income account) drawn by the Comptroller on the Treasurer, for the year ending Aug. 31, 1884, amounted to $8,832,516.63. Of
these there were, on the account of the available
school fund, $1,484,490.54; available university
fund, $133,171.88; permanent university fund,
$307,929.80; permanent school fund,
$1,744,899.45; the balance, on account of oth-
er special funds. The bonded debt of the State
Aug. 31, 1884, amounted to $4,119,898.82, of
which the special funds of the State hold nearly
two thirds and individuals about one third.
The cash balances in the treasury to the credit
of the various funds, Jan. 1, 1885, amounted to
$552,142.73 (general revenue account, $186,
864.31). The balances in bonds aggregated
$5,309,089.25, of which the permanent school
fund held $5,409,089.75; permanent university
fund, $313,761.63; Agricultural and Mechani-
cal College fund, $200,000. The assessed value
of property in 1880 was $311,470,736; in 1881,
$357,000,000; in 1882, $419,925,478; in 1883,
$275,920,000; in 1884, $600,000,917.

Education.—While the usual increase in the
number of children of scholastic age has been
largely augmented by the Legislature at its
extra session adding two years to the scholas-
tic age, the fund at the disposition of the Board
of Education has grown in greater proportion.
There has been the most marked improvement
in the character, attainments, and efficiency of
our public-school teachers. The Sam Houston
Normal Institute (at Huntsville) began its sixth
session on Sept. 10, 1884, and will close it on
June 10, 1885. At this time it has 165 students.
The State students number five from each senatorial district, and four at large.

The Prairie View Normal School is in excellent condition, and is doing a good work for the colored people. During the summer of 1883 a summer normal institute was maintained in each senatorial district for white, and one in each congressional district, except the eleventh, for colored teachers. The same number were maintained during the summer of 1884.

Of fifty-one cities and towns having control of the public schools within their limits, only seventeen made reports to the Educational Department for the year ending Aug. 31, 1884, and of fifty-one, only thirty-four made reports for the year ending Aug. 31, 1884. The public schools in the cities and towns have been eminently successful. Seventeen cities and towns have assumed control of their schools since the apportionment for the year 1883-'84.

The following are statistics for the year ending Aug. 31, 1884:

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>County reporting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of white school communities organized</td>
<td>4,660</td>
</tr>
<tr>
<td>Number of colored school communities organized</td>
<td>2,547</td>
</tr>
<tr>
<td>Total</td>
<td>7,207</td>
</tr>
<tr>
<td>Number of white schools maintained</td>
<td>4,346</td>
</tr>
<tr>
<td>Number of colored schools maintained</td>
<td>1,450</td>
</tr>
<tr>
<td>Total</td>
<td>5,796</td>
</tr>
<tr>
<td>White scholastic population reported by communities</td>
<td>124,721</td>
</tr>
<tr>
<td>Colored scholastic population reported by communities</td>
<td>59,181</td>
</tr>
<tr>
<td>Total</td>
<td>183,902</td>
</tr>
<tr>
<td>White children enrolled in school, and receiving tuition free of charge,</td>
<td>180,737</td>
</tr>
<tr>
<td>Colored children enrolled in school, and receiving tuition free of charge</td>
<td>50,069</td>
</tr>
<tr>
<td>Total</td>
<td>230,806</td>
</tr>
<tr>
<td>Children paying tuition</td>
<td>87,594</td>
</tr>
<tr>
<td>Average school term</td>
<td>5 months, 110</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CITIES</th>
<th>City reporting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>White schools maintained</td>
<td>158</td>
</tr>
<tr>
<td>Colored schools maintained</td>
<td>55</td>
</tr>
<tr>
<td>Total</td>
<td>213</td>
</tr>
<tr>
<td>White children of scholastic age enrolled, and receiving free tuition</td>
<td>17,913</td>
</tr>
<tr>
<td>Colored children of scholastic age enrolled, and receiving free tuition</td>
<td>8,080</td>
</tr>
<tr>
<td>Total</td>
<td>25,993</td>
</tr>
<tr>
<td>Children not of scholastic age enrolled in school</td>
<td>2,506</td>
</tr>
<tr>
<td>Average school term</td>
<td>84 mos.</td>
</tr>
<tr>
<td>Children of scholastic age who have not attended school</td>
<td>11,189</td>
</tr>
<tr>
<td>White children of scholastic age unable to read at end of term</td>
<td>111</td>
</tr>
<tr>
<td>Colored children of scholastic age unable to read at end of term</td>
<td>263</td>
</tr>
<tr>
<td>Total</td>
<td>394</td>
</tr>
<tr>
<td>Paid teachers from city funds</td>
<td>$188,286</td>
</tr>
<tr>
<td>Paid teachers from private funds</td>
<td>82,286</td>
</tr>
</tbody>
</table>

The University of Texas has 13 (2 in law department) instructors, and in 1882-'84 had 219 students (189 academic and 50 law). It is endowed by the State. The Agricultural and Mechanical College of Texas, near Bryan, Brazos county, has 9 instructors and 186 students.

In addition to the State, the latter recently organized. The penitentiary at Huntsville and the other at Rusk, the number of convicts Dec. 24, 1884, was 2,852. On Nov. 1, 1884, the 2,536 on hand were located and employed as follows: At Huntsville, 452; at Rusk, 555; on railroad construction, 176; on farms, 1,148; total 2,852.

The number of persons not from Sl from May 16, 1883, to Nov. 1, 1884, was $504,676, and the amount paid out for labor was $484,684.98; the amount paid in, for food and clothing, $168,000.

Charitable Institutions.—The Deaf and Dumb Asylum has 9 teachers and about 150 students. The Institution for the Blind has 100 students. These, together with the State Lunatic Asylum in Austin, the North Texas Insane Asylum near Terrell, Kaufman county, and the State Home for the Blind at Austin, are in the charge of the Institution for the Blind, 190.

Railroads.—The following is a summary of the railroads of the State:

| Miles of railroad (including side-tracks) | 4,787 36 |
| Miles of wood bridges | 15 |
| Miles of combination bridges | 23 |
| Miles of iron and steel bridges | 50 |
| Locomotives | 80 |
| Passenger-cars | 84 |
| Baggage, express, and mail cars | 18 |
| Freight-cars | 17,036 |
| Other cars | 213 |
| Miles of steel rails in main track | 2,704 15 |
| Miles of iron rails in main track | 2,704 15 |

Political.—The following were the candidates in the Democratic and Republican columns:

| Governor | A. B. Norton | Barnett G. Johnson |
| Treasurer | Samuel M. Johnson | Frank E. Smith |
| Comptroller | Frederick W. Miner | J. W. Smith |
| Attorney-General | L. C. Greer | John D. Thomas |
| Land Commissioner | E. J. Evans | W. C. Washington |

For Governor, George W. Jones, the Democratic ticket was elected. The vote for Governor follows: Ireland, 212,294; Jones, 88,410; ton, 24,557. The Democratic vote for the United States Senator—Governor was 236,685; Republican, 61,897. The average vote for President was 329,352; Democratic, 229,652; Republican, 88,745; total, 3,368; Greenback, 3,297. The vote from El Paso and San Jacinto county is 234,210, and the total vote was 90,156. No returns for President were received from Old.

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Though the grounds on which their belief is based are found in ancient scriptures, theists do not rely on external authority for their belief, but find independent reasons for it. They base it on the ground of the nature of man—on the reason, the conscience, and the affections—and hold that these three parts of man's nature are feeble reflections of the living God who made men what they are, and that it is possible and reasonable to reason up from the less (the nature of man) to the greater (the nature of God). The theistic liturgy is a revision of the old Prayer-Book of the Church of England, with everything omitted that does not harmonize with theistic faith and principles. The Psalter is shortened, and all mal-dictions are left out. The book is furnished with two or three alternative services, service of duty, service of benediction, service of praise and thanksgiving; also with a service for the dedication and benediction of children, a service of marriage, and a service for burial or cremation, which are original. Fifty hymns are appended to it, gathered from all sources, and some original hymns by theists. The book also contains family prayers. The whole work is designed to cultivate entire trust in God and adoration of his goodness, and to quicken and fortify all virtuous effort. It is the usual custom to read two lessons, selected from ancient or modern writers. The Bible is sometimes read, and the minister has also read from hundreds of devotional books, by authors of all creeds, "from Marcus Aurelius to St. Thomas à Kempis, and from St. Thomas to James Anthony Froude." The minister officiates in the usual surplice of the Church of England, whose orders he still retains.

TOBOGGANING, a Canadian sport, which consists in sliding down natural declivities or artificial "slides," on a sled without runners, of Indian origin, and called by the American Indians odaboggan, from which we have the modern corruption "toboggan."

The toboggan is made of a strip or strips of some tough, fibrous, and elastic wood, from one eighth inch to one quarter inch in thickness. It may be from three to seven feet in length (the rule for racers is one foot higher than the head of the steerer as he stands with his toboggan plumb), and from one to two feet in breadth. It is ribbed across at intervals on its upper side for strength, turned up at its front end until it curls to a half circle, and along each side, firmly lashed with deer-thongs to and on top of the ribs, are the hand or side rails, which extend the whole length of the toboggan. To these the riders cling, or down to them the load is lashed for transportation. It may or may not be cushioned, but it should always be provided with a cushion, which is firmly secured to the side-rails, when used for tobogganing.

The toboggan is of very ancient origin, doubtless going far beyond the historic period. But until very recent times it was used only for the
Schilder summoned Todleben, who, after his chief was wounded, conducted the engineering operations at the siege of Silistria. Prince Gorchakoff, when he learned that the allies intended to attack Sebastopol, ordered Lieut.-Col. Todleben to report to Prince Menshikoff for duty. The commander in the Crimea was about to send him back, when Gen. St. Arnaud debarked at Eupatoria. Todleben’s suggestions to build a bridge between the two parts of the city, and to close the channel with sunken ships, were then carried out. The admirals Korniloff, Nachimoff, and Ipatouin, who commanded during the absence of Menshikoff, furthered in every way Todleben’s plans, and furnished men and materials to carry out the original project for the fortification of Sebastopol, approved by the Emperor Nicholas in 1837. The eight hills on the south side were to be crowned with bastions closed in the gorge and connected with walls. By employing infantry, sailors, and citizens, as well as sappers and engineers, the place was got into a good state of defense in a remarkably short space of time. When the enemy had mounted land-batteries and begun the bombardment on Oct. 17, 1854, Todleben was able to respond with an equally effective fire, which dismounted many French guns, and caused the plan of an assault to be abandoned. The Czar made him a colonel when the issue of the day’s fighting was reported to him. He escorted after that to bolder tactics, and established, besides countermoves...
aneous merchandise 19,618,000, 60 piasters; total imports, 1,981, exports 863,209,000 piasters.

The tonnage entered at Constantin was 6,538,707, of which 8,170, English. The steam tonnage

The sailing tonnage entered 1,069,837, the steam tonnage sailing tonnage at Salonic 527, tonnage 729,004. The merchant comprised 390 ocean-going sail tons, and 11 steamers of 3,950.

Lines completed in 1864 had 1,432 kilometres, besides 274

minority of the Turkish Government to railroad convention agreed upon e à quatre was the occasion of on the part of Austria. The that the complications with state were all that stood in the position of the Turkish and Servian

frash offered to build the lines, condition insisted upon by the company, which is now Aus nine Ottoman, at least until its

with the Turkish Government his proviso was unacceptable to use the complications with the terminable, and would place the Turkish jurisdiction for an in

The agreement made with the ys Company, subject to the so-

man nationality, was to repay gradually from the revenue of 4 at 45 per cent. of the receipts

7,000 francs per kilometre for, at a rate not to exceed 1,500

metre. The Porte threatened the railroads and complete the line, or give the commission to

The neglect of Bulgaria and fill their obligations with refer;

care of the Turkish debt was her reason for not carrying out

before October, 1886, agreement.

ic railway, connecting the rich

ana and Tarsus with the port of

In Bosnia and Herzegovina

890 1,992 kilometres of lines.

according to the new plan of

nation, approved by the Padi

880, the army is divided into

tive army, the redif or reserve,

or levy in mass. The dura-

in years, of which six

ive of the active army is to

with 1,512 guns. The actual

sarma in 1888 was 10,811 offi-

5 men, with 650 guns.

be fleet has been greatly weak-

ened by losses of vessels and sales made to

England. In recent lists, 9 indifferent vessels on the Danube and 9 in the Black Sea, includ-

1 steam-frigate, are all that are mentioned.

Finances. — The budget estimates for the fiscal year ending Feb. 28, 1881, make the receipts
1,618,584,000 piasters, and the expenditures
1,914,876,859 piasters.

The foreign debt was scaled down by the arrangement with the creditors, sanctioned by the Sultan, Dec. 15, 1881, from £238,801,000, including accrued interest amounting to £61,-

808,905, to £106,487,234, for the service of which the salt and tobacco monopolies and certain imports and tithes are reserved. The Agalata bankers, whose claims for money ad-

vanced amounted to 8,170,000 Turkish pounds, receive from the debt commission 500,000 Turkish pounds a year, sufficient to pay 6 per cent. interest and provide a sinking fund, in return for releasing the “six indirect contributions” for the service of the general debt.

Other loans are partly secured by a reserved share of the Turkish tribute, over and above which they demand £1,000 a year. The floating and internal debts amount to about 20,000,000 Turkish pounds. The Russian war indemnity of 82,000,000 pounds is payable in 100 annual installments, without interest.

The Capitalists. — The Sultan took a determined stand in 1884 against the most humiliating features of the international control over certain functions of government. He pro-

claimed the intention of suppressing the for-

eign post-offices and establishing a Turkish postal service. The first essay in the foreign mail service, however, was a failure, the ex-

pensive steamers that were procured to convey the mails to the railroad terminus in the Dan-

ube not being able to make the connection with Varna.

The Porte also insisted that its appointment of seven new members on the Sanitary Board should be admitted by the powers. This would give Turkey the majority in the board. The ground for the change was the danger from cholera. It was supposed that Europeans, in the commercial interest of their compatriots, would disregard the sanitary interests of the Turkish population. The Turkish physicians were admitted to the meetings of the board as consultative members, but, when they insisted on full membership, all the foreign members except the British left the hall. They then pro-

ceeded to assume the functions of the board, and decreed an extension of quarantine. The post-office and sanitary regulations were not a part of the capitulations, yet the ultimate design of the Sultan was to do away with consular jurisdiction and the other provisions of the capitulations.

Religious Difficulties. — The election of the Ar-

menian Catholics at Etchmiadzin took place May 21. Since the majority of the dioceses in Turkey, the Turkish Armenians have hitherto controlled the choice of their ecclesi-
TURKEY.

astical head; but the Russian Government determined to transfer the preponderance to Russia, which now contains not only the spiritual capital, but the main body of the nation. It insisted also in applying the laws known as the Balagenia, according to which the Czar would select the Catholics from among the candidates receiving the largest number of votes. This Russian law has always been objected to by the Armenians as contrary to their canons and an invasion of their ancient liberties. The Armenian Patriarch of Constantinople, Nerses, decided to hold a preliminary election in Constantinople, and send delegates to Etchmiadzin to deliver the collective votes of the Turkish bishoprics. When the election took place in Etchmiadzin, Monsigneur Nerses received the most votes, the next highest number going to Melchisedek, Bishop of Smyrna. The Czar's representatives objected to receiving the vote of the Turkish delegation, except as a single vote for the See of Constantinople. Nerses had repeatedly refused to be a candidate for Catholics, and now declined the office. The name of Melchisedek was thereupon submitted to the Czar for confirmation. The Czar's Government, on account of this and other deviations from the Balagenia, declared the election void, appointing a new one in a year.

The efforts of Abdul-Hamid to strengthen and nationalize Turkish institutions, and emancipate the country from foreign control, brought him into fresh conflicts with the Christian churches. The Armenian Patriarch resigned in earnest when, in addition to the neglect of long-promised reforms and the denial of protection to the oppressed Armenians of the Lebanon, the Porte now infringed upon the ancient privileges and autonomous rights of the church. The Greek Patriarch had already resigned, for the same reason. The Greek Catholics refused to yield up rights enjoyed ab antiquo, by giving Turkish judicial authority criminal jurisdiction over parish priests. The dispute was finally compromised on the basis of the status quo ante. The Fanar was at the same time disturbed by an intestine division, which was finally composed by the election of the Archbishop of Derkos to the patriarchate. Phothis Pasha, the Christian governor appointed over Crete, resigned, but the difficulties with the Cretans were amicably settled by an agreement to reserve 1,500 Turkish pounds of the Vakhf revenues for the mosques, and to pay the rest into the local treasury.

Macedonian Outrages.—Many reports were sent abroad during the latter part of 1884 describing outrages committed on Christians by Musulman fanatics. The Turkish Government made an investigation, and reported that the disturbances were not of a religious nature, but were acts of brigandage and robbery committed by both Christians and Mohammedans. The governors reported that there was a political agitation in progress against Turkish rule conducted from Bulgaria and Eastern Roumelia.

Rebellion in Yemen.—An insurrection in Arabia necessitated the dispatch of considerable bodies of troops, which succeeded in partially suppressing the rebellion, though the country was still so disordered at the end of the year that no taxes could be collected.

The Governorship of Eastern Roumelia.—The term of Aleko Pasha expired in 1884. The appointment of Aleko Pasha for a new term of five years would have been satisfactory to most of the powers; but Russia objected to him or to Rustem Pasha, or to any Turkish or foreign candidate, except one predisposed to Russian and Slavonic interests. Accordingly, M. Crevostovich, a Bulgarian, was appointed.

Commercial Treaty.—The United States and Turkey could not come to an agreement in the matter of a provisional commercial convention. As the Turkish Government refused to accept Gen. Wallace's view, and insisted that the treaty had expired, the United States concluded to fall back on the treaty of 1830, which secured the most-favored-nation treatment. Austria declined to modify her treaty before its expiration, as she had done by Germany, but agreed to an increase of specific duties under the new tariff. The English Government in its negotiations for a commercial treaty took the ground that the capitulations in respect to foreign trade, superseded by the treaty of 1861, would revive when the treaty expired.

The Montenegrin Frontier.—When Prince Nicholas of Montenegro visited Constantinople and, under the auspices of Russia, whose relations with Austria were strained at that time, formed an alliance with the Sultan, the object of which was to prevent the advance of Austria to Bosnia, the Sultan agreed to a considerable extension of Montenegrin territory in northern Albania, which would finally set at rest the Montenegrin boundary question. Orders were given for banding over the territory, but the Albanians determined to prevent it. On June 8 the inhabitants of the Gusinje district attacked a Montenegrin village and carried off the heads of thirteen Montenegrins. Armed bands were raised in all the villages of the north. Larger re-enforcements of Turkish troops were sent to Macedonia and Albania. The turbulent chief Ali Pasha, of Gusinje, was arrested. Collisions took place with the Turkish troops, but the affair subsided, and the ultimate delineation of the frontier was postponed. Albania was in a state of ferment and anarchy during the entire year. In October bands of marauders fell upon Christian villages in the part of Albania known as Old Servia, and burned the houses and committed murders.
UNITARIANS.

UNITARIANS.  The "Unitarian Church Directory and Missionary Hand-Book" for 1884 contains a list of 344 Unitarian churches in the United States and Canada, which are listed as follows: In Canada, 3; California, 8; Colorado, 3; Connecticut, 2; Delaware, 1; District of Columbia, 1; Illinois, 16; Indiana, 4; Iowa, 8; Maine, 19; Maryland, 1; Massachusetts, 178; Michigan, 14; Minnesota, 3; New Jersey, 1; New York, 17; Ohio, 3; Pennsylvania, 6; Rhode Island, 4; Vermont, 5; Wisconsin, 7. Directory" gives the names of 267 ministers who are in charge of churches, and of six secretaries who are in charge of churches. Organizations for religious and benevolent work consist of the American Unitarian Association; the National Conference of Unitarian Churchmen; and the Southern Unitarian Conference. The American Unitarian Association includes women's conferences; the Women's Western Unitarian Conference; the Unitarian and the Western Unitarian School Societies; twenty-five State and annual conferences and associations; twelve national organizations, unions, and educational institutions; three general organizations in behalf of lay-schools; and numerous local organizations. The theological schools are the School of Harvard University, Cambridge, Mass., with a faculty of eight members, and the Meadville Theological School, Meadville, Pa., with ten instructors.

Unitarians in Great Britain.—The Unitarians in England 288 places of worship; in England, 29; in Wales, 92; in Ireland, 41; and at Man, 91. The number of ministers in active duty in Great Britain and Ireland, 361; while 91 other ministers are engaged in literary or other pursuits, or have retired from work. The principal Unitarian denominational institution in England is Manchester College in London, of which the Rev. Martineau, LL.D., is principal. The nation has also a college for the education of missionaries in Manchester.

Unitarians in Hungary.—The Unitarian order in Hungary (Transylvania) is a form with one bishop whose cathedral is at Kolozsvar, and includes about 60,000 members. The at Klausenburg has twelve professors and 800 students; gymnasiums are at Thorda and St. Keresztur; and law-schools return more than 5,000 students. The Hungarian Church is on fraternal terms with the American Unitarian Association and a regular correspondence is kept between the two bodies.

The Conference of Unitarian Churches.—The eleventh meeting of the National Conference of Unitarian and other Christian churches was held at Saratoga, N. Y., beginning September 22. The Hon. Dorman B. Eaton presided. Two hundred and twelve churches and 23 conferences, associations, etc., were represented by 638 delegates. The Council of the Conference reported that in the last two years since the last meeting of the body, the churches united in it had contributed $428,000 to the various objects then proposed by it. In the twenty years since the Conference was formed, the Unitarian Church had endowed Antioch College with $110,000, Meadville Theological School with $75,000, and the Cambridge Divinity School with $130,000; while the American Unitarian Association, besides its regular and enlarging work of missions, has collected the means and made the plans of a central home of its missionary efforts.

The report of the American Unitarian Association stated that in the past two years $199,000 had been given through it to special objects, viz.: $153,000 to erect a denominational building, and $47,000 more to relieve the church in New Orleans from debt; to complete the additional endowment for the seminary at Meadville, Pa.; to establish a professorship in the Unitarian College in Hungary; and to support the Rev. A. D. Mayo in his work for Southern education. Besides these sums, $145,000 had been bequeathed to increase the permanent missionary fund, and the regular contributions had continued to increase, amounting now to $78,000. The Association had kept alive twenty-fifteen parishes, helped twenty-four other churches in growing towns, supported religious services in eight educational centers, helped sustain nine State missionaries, maintained the mission in India, and participated in the support of a church in Buda-Pesth, Hungary, and had sent out several thousand volumes and more than 200,000 tracts. Reports were received from the Western Conference, which, besides co-operating with the Western State Conferences in the work of missions and church extension, has established a large book-store and Unitarian headquarters in Chicago; and from the Southern Conference, the headquarters of which are at Atlanta, Ga.

The Conference adopted resolutions recommending the maintenance of State Conferences where that is practicable without interfering with existing local conferences, and the appointment of a State missionary for each; recommending the setting apart of $30,000 as the nucleus of the church-building loan fund to be established by the American Unitarian Association, and the addition of $20,000 more to be raised by immediate subscriptions; and approving the formation of Unitarian clubs for the purpose of uniting the laity.
D. Wright, of Massachusetts, was se-

r authority of an act of Congress, ap-

July 7, a commission was appointed by

sident "to ascertain the best modes of

more intimate international and com-

relations between the United States

several countries of Central and South

a." The commissioners consisted of

H. Sharpe, of New York; Thomas C.

Is, of Missouri; and Solon O. Thacher,

gas; and W. E. Curtis, of Washington,

pointed secretary to the commission.

nices were given on the subject of the

in several cities of the country, and

ember the commission made a visit to

Retuming thence by way of New

, it embarked for Venezuela early in

es.—The commercial treaty with Mexi-

was negotiated in 1882-83, was rati-

the Senate, March 11, by a vote of 41

out the legislation necessary to give it

as not been adopted. A treaty was nego-

during the year with the Spanish Gov-

Madrid, by the American minister,

. Foster, the purpose of which was to

foster interchange of products between

ed States and the islands of Cuba and

ico. This was submitted to the Senate

th of December, but was not ratified

the session of Congress which had then

The object of the treaty, as stated by

ary of State, was:

- establish such reciprocity of exchange of the

of the United States and of the neighboring

nies and islands of Cuba and Porto Rico;

ual shipping privileges as will tend to a

development of commerce. 2. To remove the

and obstructions to which American trade

have for many years been exposed un-

and customs regulations of these islands;

plement the treaty of 1795 with Spain by

modern provisions as to commercial freedom,

ction of the rights of persons and property;

most-favored-nation' clause, which do not

eral reduction in the duties on sugar

co imported from Cuba and Porto

used a strong opposition to the treaty,

instrumental in preventing its immu-

ification. It was still pending at the

ment of Congress, but was subse-

called from the Senate by the new

nt during the special session of that

ichi began on the 5th of March, 1885.

of reciprocity with Santo Domingo was

Washington on the 4th of December

ary of State Frelinghuyzen and Se-

uel D. J. Galvin as plenipotentiaries for

pors. It provided for the free inter-

of certain products, and a liberal reduc-

dues on others, and made provision

less restricted commercial inter-

No action was taken upon this by the

rding the session ending March 4, 1885,

as afterward withdrawn by President

A treaty with Nicaragua was signed

at Washington on the 1st of December by Sec-

etary Frelinghuyzen on the part of the United

ates, and Gen. Joaquin Zavala for the Cen-

American republic. The purpose of this

was to secure the construction of the proposed

canal in Nicaragua by the Gov-

ment of the United States. This met with

osition, and failed of ratification during the

session of the Forty-eighth Congress. This

was also withdrawn by the President during

the special session of the Senate.

The Political Canvas.—The political canvas-

for the election of President and Vice-Presi-

dent was one of exceptional interest and im-

portance. As early as December, 1883, cer-

tain Republicans in the city of Boston began a

movement in behalf of the "adoption of meas-

ures and the nomination of men fitted to com-

mand the hearty approval and support of the

independent, thoughtful, and discriminating

oters of the United States." A committee

was formed and a correspondence entered into

which resulted in a call for a conference of

ependent Republicans in New York on Febru-

ary 23. At this conference the following

resolution, offered by the Hon. Frederick A.

otts, of New Jersey, was adopted:

Whereas, A consistent and faithful adherence to the

principles of administrative reform, heretofore in-

ored in State and National Convention, is abso-

utely essential to the vitality and success of the Re-

publican party; and events have shown that the

ard of these principles has led to party defeat

several of the most important States; and,

Whereas, The adoption of a similarly mistaken poli-

cy would inevitably lead to defeat at the next Presi-

dential election:

Resolved, That it is indispensable to the success

of the Republican party that the character, record, and

associations of its candidates for President and Vice-

President of the United States should be such as to

arrant entire confidence in their readiness to defend

ance already made toward divorcing the pub-

ic service from party politics, and to continue these

in the separation of the same made final and

A committee was appointed "to provide for the

terchange and practical expression of

opinion in harmony with the foregoing reso-

ution, and to take such action in relation

ero to as they may deem expedient." At

irst only men from New York were selected,

uthority being given to them to add repre-

atives from other States. Gen. Francis C.

low, of New York, was made chairman of

committee. Circulars were sent out, set-

fing forth the object of the Independent move-

ent and inviting co-operation, and on the

th of May the committee sent a circular

r letter to the delegates to the Republican

ational Convention.

Republican Convention.—The time and place

for the Republican Convention had been de-

termined upon by the National Committee at a

meeting held in Washington in December,

93, together with the plan of representation

States and congressional districts. (See "Annu-

" Annual Cyclopaedia" for 1888.) As the

pro

aminal canvas opened in the several States,
view that everywhere the protection to a citizen birth must be secured to citizens by adoption, and we favor the settlement of differences by international arbitration.

Republican party having its birth in a hatred for and in a desire that all men may be just, is unalterably opposed to placing our in competition with any form of servile labor at home or abroad. In this spirit we oppose immigration of contract labor, whether in Asia, as an offense against the spirit of the Constitution, and we pledge ourselves to present law restricting Chinese immigration provide such further legislation as is necessary to its purposes.

rem of the civil service, auspiciously begun by a functioning administration, should be completed and its operation and purpose be observed in all executive and all laws at variance with the objects of reformed legislation should be repealed, to attract the dangers to free institutions which power of official patronage may be wisely and safely avoided.

ic lands are the heritage of the people of States, and should be reserved as far as possible, and the acquisition of large tracts of these lands by individuals, especially where such tracts are in the hands of non-resident alien, and those who seek to obtain such legislation as will aid them.

the speedy forfeiture of all which have been lapsed by reason of non-compliance acts of incorporation in all cases where no attempt is made to perform the bonds such grants.

dial thanks of the American people are due a soldier’s work of war, and can parties stand pledged to suitable pensions who were disabled, and for the widows of those who have perished in the war. The party also pledges itself to the repeal of the remaining act of 1867, so that soldiers shall share alike, and their pensions with the date of disability or discharge, to the date of the application.

abroad party favors a policy which shall be that foreign effort to mediate in American policy which seeks peace and fair trade with but especially with those of the Western and the restoration of our navy to its old efficiency, that it may in any sea rights of American citizens and the inter-erican commerce, and we call upon Congress to undertake the burdens under which American has been depressed, so that it may again be a have a commerce which leaves no sea and a navy which takes no law from such.

That appointments by the President to be Territorial should never be from the citizens and residents of the Territories which serve. That it is the duty of Congress to enact a bill promptly and effectually suppress polygamy within our territory, and by positive and by the ecclesiastical power in the Mormon Church, and that the law so made be rigidly enforced by the civil authority in the case of individuals living within the States, in their organized institute a nation, and not a mere confederacy. The national Government is in the sphere of its national duty, but the States have reserved rights which should be faithfully maintained. Each should be guarded with jealous care, so that the harmony of our system of government may be preserved and the Union be kept inviolate. The perpetuity of our institutions rests upon the maintenance of a free ballot, an honest count, and correct returns. We denounce the fraud and violence practiced by the Democracy in Southern States, by which the will of the voter is defeated, as dangerous to the preservation of free institutions, and we solemnly arraign the Democratic party as being guilty recipients of the fruits of such fraud and violence.

We extend to the Republicans of the South, regardless of their former party affiliations, our cordial sympathy, and pledge to them our most earnest efforts to promote the passage of such legislation as will secure to every citizen, of whatever race or color, the full and complete recognition, possession, and exercise of all civil and political rights.

In the presentation of candidates the name of Senator Joseph B. Hawley, of Connecticut, was offered by Mr. Brandegee, of that State, in a eulogistic speech; that of Senator John A. Logan, of Illinois, by Senator Cullom; Mr. Blaine’s, by William H. West, of Ohio; President Arthur’s, by Martin I. Van Buren, of New York; Senator Sherman’s, by Judge J. B. Foraker, of Ohio; Senator Edmunds’s, by ex-Governor John D. Long, of Massachusetts. On Saturday, June 7, the fourth day of the convention, four ballots were taken, with the following result:

**FIRST BALLOT.**

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Votes</th>
</tr>
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<tbody>
<tr>
<td>James G. Blaine</td>
<td>3814</td>
</tr>
<tr>
<td>Chester A. Arthur</td>
<td>276</td>
</tr>
<tr>
<td>George F. Edmunds</td>
<td>198</td>
</tr>
<tr>
<td>John A. Logan</td>
<td>92</td>
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<tr>
<td>John Sherman</td>
<td>80</td>
</tr>
<tr>
<td>Joseph H. Hawley</td>
<td>10</td>
</tr>
<tr>
<td>Robert T. Lincoln</td>
<td>4</td>
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<tr>
<td>W. T. Sherman</td>
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**SECOND BALLOT.**

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<tr>
<td>James G. Blaine</td>
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<tr>
<td>Chester A. Arthur</td>
<td>276</td>
</tr>
<tr>
<td>George F. Edmunds</td>
<td>209</td>
</tr>
<tr>
<td>John A. Logan</td>
<td>41</td>
</tr>
<tr>
<td>John Sherman</td>
<td>88</td>
</tr>
<tr>
<td>Joseph H. Hawley</td>
<td>17</td>
</tr>
<tr>
<td>Robert T. Lincoln</td>
<td>4</td>
</tr>
<tr>
<td>W. T. Sherman</td>
<td>3</td>
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</table>

**THIRD BALLOT.**

<table>
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<tr>
<td>James G. Blaine</td>
<td>375</td>
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<tr>
<td>Chester A. Arthur</td>
<td>274</td>
</tr>
<tr>
<td>George F. Edmunds</td>
<td>192</td>
</tr>
<tr>
<td>John A. Logan</td>
<td>46</td>
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<tr>
<td>John Sherman</td>
<td>80</td>
</tr>
<tr>
<td>Joseph H. Hawley</td>
<td>18</td>
</tr>
<tr>
<td>Robert T. Lincoln</td>
<td>3</td>
</tr>
<tr>
<td>W. T. Sherman</td>
<td>2</td>
</tr>
</tbody>
</table>

**FOURTH BALLOT.**

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>James G. Blaine</td>
<td>541</td>
</tr>
<tr>
<td>Chester A. Arthur</td>
<td>307</td>
</tr>
<tr>
<td>George F. Edmunds</td>
<td>41</td>
</tr>
<tr>
<td>John A. Logan</td>
<td>92</td>
</tr>
<tr>
<td>Joseph H. Hawley</td>
<td>15</td>
</tr>
<tr>
<td>Robert T. Lincoln</td>
<td>3</td>
</tr>
</tbody>
</table>

The changes on the fourth ballot were entirely adopted, and at the evening session Senator Logan was nominated for Vice-President without opposition.

B. F. Jones, of Pennsylvania, was subsequently made chairman of the new National Committee.
tee, and James B. Chaffee, of Colorado, chairman of the Executive Committee thereof. The headquarters were established in New York. The significant portions of Mr. Blaine's letter of acceptance are given on page 87.

The nominations caused much dissatisfaction and excited the opposition of the Independent Republicans, among whom were a number of persons who had been prominent in the party.

At a conference in New York on the 16th, called by the Independent Committee, and participated in by prominent representatives from several States, the following resolutions, offered by Mr. Carl Schurz, were adopted:

Whereas, We are met in conference as Republicans and Independents to take action in opposition to the nominations of James G. Blaine for President and John A. Logan for Vice-President of the United States; and

Whereas, Those candidates were named in absolute disregard of the reform sentiment of the nation, and representing political methods and principles to which we are unalterably opposed;

Resolved, That it is our convinctions that the country will be better served by opposing those nominations than by supporting them;

Resolved, That we look with solicitude to the coming nominations by the Democratic party; they have the proper men, we hope they will put them before the people for election;

Resolved, That a committee of twenty-five members be appointed, whose duty it shall be, in co-operation with similar committees to be appointed elsewhere, to take without delay suitable measures for rallying and organizing the Republicans and Independents dissatisfied with the nominations of Blaine and Logan, with a view to the holding, at as early a day as possible, of a general representative conference for the purpose of concerting such further steps as may be found advisable for the expression and effective enforcement of our views of public interest.

The chairman of this meeting, and of the committee which subsequently acted under its authority, was George William Curtis, of New York. There was an anti-Blaine Republican meeting at New Haven, Conn., June 25, at which a committee was chosen to co-operate with others having a similar purpose.

Democratic Convention.—The Democratic National Committee, at a meeting held in Washington on the 19th of February, decided upon Chicago as the place, and July 8 as the time, of meeting of the National Convention. In the call, "all Democratic conservative citizens of the United States, irrespective of past political associations and differences, who can unite with us in the effort for pure, economical, and constitutional government," were "cordially invited" to join in sending delegates to the convention. In the preliminary canvass in the several States preferences were developed in various quarters in favor of Samuel J. Tilden, of New York, Thomas B. Bayard, of Delaware, Joseph E. McDonald and Thomas A. Hendricks, of Indiana, Samuel J. Randall, of Pennsylvania, Allen G. Thurman, of Ohio, John G. Carlisle, of Kentucky, and Gov. Grover Cleveland, of New York, as the candidates for the presidency, a number of State conventions giving formal expression to their preferences.

While the Democratic party in the State of New York was not altogether harmonious in support of Gov. Cleveland for the candidacy, a majority of the delegates chosen at the State Convention were favorable to it, and the delegation was instructed to vote as a unit. The opposition came chiefly from the Tammany faction of New York city, and was carried into the National Convention, notwithstanding the imposition of the unit rule by the State Convention. Mr. Cleveland's advocates were greatly strengthened by the assurance that, if nominated, he would receive the support of the Independent Republicans, who had declared against Blaine. In the convention the Tammany delegates made a vigorous contest against the "unit rule," but an amendment to the rule, providing that the votes of delegates, in case of difference, should be recorded in accordance with their individual preferences, was voted down, 635 to 468.

Gov. Richard B. Hubbard, of Texas, was the temporary, and William F. Vilas, of Wisconsin, permanent chairman of the convention. On the second day, after the permanent organization was effected, on a motion to lay on the table a proposition to proceed to the nomination of candidates, Mr. Manning, chairman of the New York delegation, announced its vote as "73 no," whereupon a Tammany delegate vigorously protested that it should be "49 no, 19 yeas, and 4 absent," but it was recorded as announced by the chairman. The presentation of candidates was then begun and continued the next day. The name of Mr. Bayard was presented by Attorney-General Gray, of Delaware; that of Mr. McDonald by Mr. Hendricks, of Indiana; that of Mr. Thurman by John W. Breckenridge, of California; that of Mr. Carlisle by J. A. McKenzie, of Kentucky; that of Gov. Cleveland by Daniel S. Lockwood, of New York; the Tammany delegates opposing him through Mr. Thomas F. Graff, who declared that the Irishmen, the Roman Catholics, and the lobbying-men of New York were against him; that of Gov. Hoechley, of Ohio on the third day of the convention, by Thomas E. Powell, Mr. Randall's, by ex-Senator Walls. A number of speeches were made seconding the nominations, and on the evening of the third day the platform was presented. This occasioned a new contest, led by Gen. F. G. Butler, of Massachusetts. The platform, as reported by William R. Morrison, of Illinois, chairman of the committee, was as follows:

The Democratic party of the Union, through delegates in the several States, representing in the National Convention assembled, recognizes that, as the nation grows older, new men are born of time and progress and old issues pass. But the fundamental principles of the Democracy are proved by the united voice of the people, remain and will ever remain as the best and only security for the continuance of free government. The preservation of personal rights, the equality of all citizens before the law, the reserved rights of the States, and the
shock its moral sense. Its honest members, its independent journals, no longer maintain a successful contest for authority in its councils or a veto upon bad nominations. That change is necessary is proved by an existing surplus of more than $100,000,000, which has yearly been collected from a suffering people. Unnecessary taxation is unjust taxation. We denounce the Republican party for having failed to relieve the people from crushing war burdens, which have paralyzed business, crippled industry, and deprived labor of employment and of just reward.

The Democracy pledges itself to purify the Administration from corruption, to restore economy, to revive respect for law, and to reduce taxation to the lowest limits consistent with due regard to the welfare of the nation to its creditors and pensioners. Knowing full well, however, that legislation affecting the operations of the people should be cautious and conservative in method, not in advance of public opinion, but responsive to its demands, the Demo- cratic party is pledged to revive the tariff in a spirit of fairness to all interests. But, in making reduction in taxes, it is not proposed to injure any domestic industries, but rather to promote their healthy growth. From the foundation of this Government, taxes collected at the custom-houses have been the chief source of Federal revenue. Such they must continue to be. Moreover, many industries have come to rely upon legislation for successful continuance, so that any change of law must be at every step regarded as affecting the labor and capital thus involved. The process of the reform must be subject in the execution to this plain doctrine of justice. All taxation shall be limited to the requirements of economical government. The necessary reduction in taxation can and must be effected without depriving American labor of the ability to compete successfully with foreign labor, and without imposing lower rates of duty that may result in covering any increased cost of production which may exist in consequence of the higher rates of wages prevailing in this country. Sufficient revenue to pay all the expenses of the Federal Government economically administered, including pensions, interest and principal of the public debt, can be got under our present system of taxation from custom-houses on fewer imported articles, bearing heaviest on articles of luxury and bearing lighter on articles of necessity. We therefore denounce the abuses of the existing tariff, and, subject to the preceding limitations, we demand that Federal taxation shall be exclusively for revenue purposes, and shall not exceed the needs of the Gov- ernment economically administered.

The system of direct taxation known as the "internal revenue" is a war-tax, and so long as the law continues the money derived therefrom should be sacrificially devoted to the relief of the people from the remaining burdens of the war, and be made a fund to defray the expense of the care and comfortable support of worthy soldiers disabled in line of duty in the wars of the republic, and for the payment of such pensions as Congress may from time to time grant to such soldiers, a like fund for the sailors having been already provided, and any surplus should be paid into the Trea- sury.

We favor an American continental policy based upon more intimate commercial and political relations with the fifteen sister republics of North, Central, and South America, and entangling alliances with none.

We believe in honest money, the gold and silver coinage of the Constitution, and a circulating medium convertible into such money without loss. Asserting the equality of all men before the law, we hold that it is the duty of the Government in its dealings with the people to mete out equal and exact justice to all citizens of whatever nativity, race, color, or persuasion, religious or political.

We believe in a free ballot and a fair count, and we recall to the memory of the people the noble struggle of the Democrats in the Forty-fifth and Forty-sixth
CONGRESS OF THE UNITED STATES.

773

Congress, by which a reluctant Republican opposi-
tion was coerced to assent to legislation making
everywhere illegal the presence of troops at the polls,
as the conclusive proof that a Democratic Administra-
tion must respect the dignity of the Union, and
preserve liberty with order.

The selection of Federal officers for the Territories
should be restricted to citizens previously resident
therein.

We oppose sumptuary laws which vex the citizen
and interfere with individual liberty.

We favor a liberal return of Democratic reform and the com-
penation of all United States officers by fixed salaries;
the separation of church and state, and the diffusion
of useful institutions, so that every child in the land may be taught the rights and duties
of citizenship.

We favor all legislation which will tend to the
achievable distribution of property, to the preven-
tion of monopoly, and to the strict enforcement of
individual rights against corporative abuses; we hold
that the welfare of society depends upon a scrupulous re-
gard for the rights of property as defined by law. We
believe that labor is best rewarded where it is freest
and most enlightened. It should therefore be fostered
and cherished. We favor the repeal of all laws re-
straining the free action of labor, and the enactment
of laws by which labor organizations may be incorpo-
rated, and of all such legislation as will tend to enlighten
the people as to the true relations of all capital and
labor.

We believe that the public land ought, as far as
possible, to be kept as homesteads for actual settlers;
that all unearned lands hereafter improvidently
granted to railroad corporations by the action of the
lions will preserve liberty with order to the public
domain, and that no more grants of land shall be made
to corporations, or be allowed to fall into the owner-
ship of alien absentee.

We are opposed to all propositions which upon
any pretext would convert the General Government into
a land company for the purpose of property to be distributed
among the States or the citizens thereof.

In reaffirming the declaration of the Democratic
party in 1856, that the liberal principles enunciated
by Jefferson in the Declaration of Independence, and
sanctioned in the Constitution, which make ours the
land of liberty and the asylum of the oppressed of
every nation, have ever been cardinal principles in
the Democratic faith, we nevertheless do not sanction
the importation of foreign labor or the admission of
servile races, unfitted by habits, training, religion, or
kindred, for absorption into the great body of our
people, or for the citizenship which our laws confine.
American civilization demands that against the immi-
grant or importation of Mongolians to those shores
our states be closed.

The Democratic party insists that it is the duty of
this Government to protect with equal fidelity and
vigilance the rights of the citizen, in his home and natural-
ized, at home and abroad, and, to the end that this
protection may be assured, United States papers of
naturalization issued by course of competent jurisdic-
tion must be respected by the executive and legisla-
tive departments of our own Government and by all
foreign powers. It is an imperative duty of this Gov-
ernment to efficiently protect all the rights of persons
and property of every American citizen in foreign
lands, and demand and obtain all such laws as have
now inseparable in the history of this republic been
the labor and the name of Samuel J. Tilden.

With this statement of the beliefs, principles, and
purposes of the Democratic party, the general issue
of reform and change in administration is submitted
to the people in full confidence that the year
will pronounce in favor of new men and new
more favorable conditions for the growth of industry,
the extension of trade, the employment and pro-
duction of labor and of capital, and the general welfare
of the whole country.

Gen. Butler submitted a minority report, the
essential feature of which was a formal and
explicit declaration in favor of a protective
tariff. On the question of substituting his
brief declarations for those in the platform
reported, the vote was yeas 974, nays 714. The
platform was then adopted without a count. The first ballot for candidate for President was taken the same night, and resulted as follows:

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grover Cleveland</td>
<td>293</td>
</tr>
<tr>
<td>Thomas F. Bayard</td>
<td>170</td>
</tr>
<tr>
<td>Joseph McDonald</td>
<td>56</td>
</tr>
<tr>
<td>Samuel J. Randall</td>
<td>78</td>
</tr>
<tr>
<td>Allen G. Thurman</td>
<td>68</td>
</tr>
<tr>
<td>John G. Carlisle</td>
<td>57</td>
</tr>
<tr>
<td>George Hoar</td>
<td>8</td>
</tr>
<tr>
<td>Thomas A. Hendricks</td>
<td>1</td>
</tr>
<tr>
<td>Samuel J. Flower</td>
<td>1</td>
</tr>
<tr>
<td>Roswell F. Flower</td>
<td>4</td>
</tr>
</tbody>
</table>

When the vote of New York was announced as 73 for Cleveland, it was stated that in the delegation it had stood 49 for Cleveland and 28 divided between Bayard, Slocomb, and Flower. On the fourth and last day of the convention, the second ballot for candidate for President resulted as follows:

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grover Cleveland</td>
<td>688</td>
</tr>
<tr>
<td>Thomas F. Bayard</td>
<td>514</td>
</tr>
<tr>
<td>Thomas A. Hendricks</td>
<td>42</td>
</tr>
<tr>
<td>Allen G. Thurman</td>
<td>20</td>
</tr>
<tr>
<td>Samuel J. Randall</td>
<td>18</td>
</tr>
<tr>
<td>Joseph McDonald</td>
<td>16</td>
</tr>
</tbody>
</table>

The nomination of Cleveland was made unanimous by the motion of Mr. Hendricks, who was subsequently nominated for Vice-President by acclamation after a roll-call had begun, all other names being withdrawn. A new National Committee was selected, of which William H. Barnum, of Connecticut, was afterward made chairman; Senator Gorham, of Maryland, being chairman of the Executive Committee. Headquarters were established in the city of New York.

Independent Convention. — Shortly after the Democratic Convention, another conference of the Independents was called, to be held in New York on the 22d of July. It was attended by a large number of delegates from different parts of the country, and presided over by Charles R. Codman of Massachusetts. An address to the people was adopted, and committees appointed to carry on the work of the movement, the object of which was to defeat the Republican candidates. The address closed as follows:

No citizen can rightfully avoid the issue or refuse to cast his vote. The ballot is a trust. Every voter is a trustee for good government, bound to answer to his private conscience for his public act. This conference, therefore, assuming that Republicans and independent voters who for any reason can not sustain the Republican nomination desire to take the course which, under the necessary conditions and constitutional methods of presidential election, will best reach and surely secure the result at which they aim, respectfully recommends to all such citizens to support the electors who will vote for Grover Cleveland, in order most effectually to enforce their conviction that nothing could more deeply stain the American name and prove more disastrous to the public welfare than the deliberate indifference of the people of the United States to increasing public corruption, and to the want of official integrity in the highest ranks of the Government.

Throughout the canvass, by the dissemination of documents and by public meetings, the Independents, under the direction of their committee, labored for the election of the Democratic candidates. Their principal speaker was Mr. Carl Schurz, of New York, who traveled through several of the Northern States, making addresses on the issues and candidates before the people.

Anti-Monopoly, Greenback-Labor, and People's Parties. — A National Convention of the "Anti-Monopoly" party was held in Chicago on the 14th of May, and nominated Gen. Benjamin F. Butler, of Massachusetts, for President. The National Greenback-Labor party held a convention in Indianapolis on the 27th and 28th of May, which was presided over by Gen. J. B. Weaver, of Iowa. A dispatch was sent to Gen. Butler, asking him if he would accept a nomination on a satisfactory platform. He replied:

BOSTON, May 28.

To Gov. J. W. Brooks, Indianapolis:

Thanks for your consideration, but why should I be asked a question which under the circumstances was never put to any other man? Is not my record as a Greenbacker for twenty years sufficient without a formal pledge to you which would cause me to be pointed at as a man who bids for the nomination?  BENJAMIN F. BUTLER.

Gen. Butler was nominated by a vote of 323 to 98, the latter being cast for Jesse Harper, of Illinois. The platform set forth the principles and purposes of the party, demanded the substitution of greenbacks for national-bank notes, the destruction of "land, railroad, money, and other gigantic corporate monopolies," the restoration to the public domain of lands granted to railroads, abolition of alien ownership of land, regulation of interstate commerce, a government postal telegraph, a graduated income-tax, abolition of convict-labor systems, reduction of the hours of labor, the fostering of education, the abolition of "child-labor," prohibition of "importations of contracted labor," and reduction of the terms of Senators. On the subject of the tariff it said:

While we favor a wise revision of the tariff laws, with a view to raising a revenue from luxuries rather than necessaries, we insist that, as an economic question, its importance is insignificant as compared with financial issues, for, whereas we have suffered our worst panics under low and also under high tariffs, we have never suffered from a panic nor seen our factories and workshops stopped while the volume of money in circulation was adequate to the needs of commerce. Give our farmers and manufacturers money as cheap as you now give it to our bankers, and they can pay high wages to labor and compete with all the world.

The nomination of a candidate for Vice-President was left to the National Committee, and Gen. Abielom M. West, of Mississippi, was selected for that place on the 16th of August. In reply to the formal notice of his nomination, Gen. Butler replied in a letter dated June 12th, in which he discussed the currency question, but said nothing about accepting the candidacy. He was then taking part with the Democrats of Massachusetts in their preliminary canvass, and afterward went to the Chicago Convention as one of their delegates at large. There he opposed the platform
## UNITED STATES.

in 11—total, 182; majority for Cleveland.

The popular vote in the several States is shown in the following table, prepared from official returns:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>59,144</td>
<td>92,979</td>
<td>782</td>
<td>610</td>
<td></td>
<td></td>
<td>152,990</td>
</tr>
<tr>
<td>Indiana</td>
<td>60,996</td>
<td>73,997</td>
<td>1,947</td>
<td>947</td>
<td></td>
<td></td>
<td>22,990</td>
</tr>
<tr>
<td>Illinois</td>
<td>102,418</td>
<td>80,168</td>
<td>2,987</td>
<td>2,987</td>
<td>18,150</td>
<td></td>
<td>170,325</td>
</tr>
<tr>
<td>Missouri</td>
<td>89,186</td>
<td>97,968</td>
<td>1,961</td>
<td>1,961</td>
<td>8,949</td>
<td></td>
<td>187,688</td>
</tr>
<tr>
<td>Iowa</td>
<td>18,058</td>
<td>14,075</td>
<td>10</td>
<td>10</td>
<td>4,970</td>
<td></td>
<td>39,968</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>25,081</td>
<td>81,789</td>
<td>72</td>
<td>72</td>
<td></td>
<td></td>
<td>106,789</td>
</tr>
<tr>
<td>Minnesota</td>
<td>47,915</td>
<td>96,858</td>
<td>185</td>
<td>185</td>
<td></td>
<td></td>
<td>144,789</td>
</tr>
<tr>
<td>Washington</td>
<td>207,411</td>
<td>81,256</td>
<td>9,349</td>
<td>9,349</td>
<td></td>
<td></td>
<td>295,657</td>
</tr>
<tr>
<td>Oregon</td>
<td>201,480</td>
<td>94,696</td>
<td>8,995</td>
<td>8,995</td>
<td></td>
<td></td>
<td>306,176</td>
</tr>
<tr>
<td>California</td>
<td>117,069</td>
<td>117,316</td>
<td>1,676</td>
<td>1,676</td>
<td></td>
<td></td>
<td>234,385</td>
</tr>
<tr>
<td>Nevada</td>
<td>154,468</td>
<td>90,199</td>
<td>18,841</td>
<td>18,841</td>
<td>4,604</td>
<td></td>
<td>245,045</td>
</tr>
<tr>
<td>Utah</td>
<td>116,126</td>
<td>109,061</td>
<td>1,686</td>
<td>1,686</td>
<td></td>
<td></td>
<td>225,187</td>
</tr>
<tr>
<td>Idaho</td>
<td>46,347</td>
<td>63,545</td>
<td>190</td>
<td>190</td>
<td></td>
<td></td>
<td>110,092</td>
</tr>
<tr>
<td>Montana</td>
<td>146,769</td>
<td>96,566</td>
<td>578</td>
<td>578</td>
<td></td>
<td></td>
<td>243,335</td>
</tr>
<tr>
<td>Wyoming</td>
<td>148,764</td>
<td>72,522</td>
<td>9,396</td>
<td>9,396</td>
<td></td>
<td></td>
<td>246,560</td>
</tr>
<tr>
<td>Colorado</td>
<td>132,609</td>
<td>106,961</td>
<td>706</td>
<td>706</td>
<td></td>
<td></td>
<td>242,570</td>
</tr>
<tr>
<td>New Mexico</td>
<td>111,667</td>
<td>70,660</td>
<td>5,506</td>
<td>5,506</td>
<td></td>
<td></td>
<td>182,227</td>
</tr>
<tr>
<td>Arizona</td>
<td>45,360</td>
<td>76,010</td>
<td>15,126</td>
<td>15,126</td>
<td></td>
<td></td>
<td>121,386</td>
</tr>
<tr>
<td>Nevada</td>
<td>200,350</td>
<td>25,096</td>
<td>1,381</td>
<td>1,381</td>
<td></td>
<td></td>
<td>225,537</td>
</tr>
<tr>
<td>Utah</td>
<td>7,188</td>
<td>5,576</td>
<td>90</td>
<td>90</td>
<td></td>
<td></td>
<td>13,764</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>90,305</td>
<td>89,157</td>
<td>2,524</td>
<td>2,524</td>
<td></td>
<td></td>
<td>182,459</td>
</tr>
<tr>
<td>New York</td>
<td>108,666</td>
<td>197,718</td>
<td>9,456</td>
<td>9,456</td>
<td></td>
<td></td>
<td>298,295</td>
</tr>
<tr>
<td>Mass.</td>
<td>400,933</td>
<td>368,308</td>
<td>17,132</td>
<td>17,132</td>
<td></td>
<td></td>
<td>769,245</td>
</tr>
<tr>
<td>Conn.</td>
<td>26,664</td>
<td>26,864</td>
<td>706</td>
<td>706</td>
<td></td>
<td></td>
<td>54,528</td>
</tr>
<tr>
<td>N. Y,</td>
<td>478,964</td>
<td>402,790</td>
<td>17,069</td>
<td>17,069</td>
<td></td>
<td></td>
<td>881,753</td>
</tr>
<tr>
<td>Conn.</td>
<td>22,123</td>
<td>25,291</td>
<td>429</td>
<td>429</td>
<td></td>
<td></td>
<td>67,414</td>
</tr>
<tr>
<td>Mass.</td>
<td>91,328</td>
<td>69,764</td>
<td>1,141</td>
<td>1,141</td>
<td></td>
<td></td>
<td>161,092</td>
</tr>
<tr>
<td>Ohio</td>
<td>194,040</td>
<td>150,579</td>
<td>957</td>
<td>957</td>
<td></td>
<td></td>
<td>344,618</td>
</tr>
<tr>
<td>Ind.</td>
<td>91,701</td>
<td>92,617</td>
<td>3,821</td>
<td>3,821</td>
<td></td>
<td></td>
<td>185,518</td>
</tr>
<tr>
<td>Mich.</td>
<td>85,814</td>
<td>73,387</td>
<td>1,258</td>
<td>1,258</td>
<td></td>
<td></td>
<td>159,192</td>
</tr>
<tr>
<td>Calif.</td>
<td>104,667</td>
<td>98,447</td>
<td>135</td>
<td>135</td>
<td></td>
<td></td>
<td>203,112</td>
</tr>
<tr>
<td>Colo.</td>
<td>69,097</td>
<td>57,817</td>
<td>599</td>
<td>599</td>
<td></td>
<td></td>
<td>127,916</td>
</tr>
<tr>
<td>Nev.</td>
<td>144,439</td>
<td>144,439</td>
<td>8,560</td>
<td>8,560</td>
<td></td>
<td></td>
<td>293,999</td>
</tr>
<tr>
<td>Utah</td>
<td>4,066,585</td>
<td>4,311,917</td>
<td>188,800</td>
<td>151,969</td>
<td>466,706</td>
<td>468,829</td>
<td>10,046,061</td>
</tr>
</tbody>
</table>

would be noted that the Blaine electoral votes were supported by the Republicans and people's party in Missouri and West Vir- ginia. The Cleveland tickets supported by the Democrats and the party in Iowa, Michigan, and Nebraska People's party claimed to have cast 1,000 votes for the Fusion ticket in 0, and about 50,000 votes in Iowa, where 11,368 blank and scattering votes which are included in the total above. The there were 935 votes cast for a or “Whig-Republican” electoral ticket, counted for Blaine. These, with the for Belva Lockwood, “Equal Rights” is, are included in “scattering.”

A letter signed by the President of the National Civil-Reform League, commanding the cease service reform to his "patriotic care," Orel had wrote a letter, which the reader L page 149 of this volume.

—No change was made during the the aggregate strength of the army; force of enlisted men is subject to odifications from casualties. In three total casualties numbered 29,858, exceeded the maximum strength of the nearly 5,000. Of these, 18,158 were 5,690 deaths, and 10,091 desertions—an average of 6,061 discharges, 231 deaths, and 3,664 desertions each year, the term of enlistment being five years. The number of enlistments during the year was 7,600, only about one sixth being re-enlistments. There was scarcely any field service for the army during the year, its duties consisting of occupation of posts on the frontiers of Canada and Mexico, and stations near the Indian agencies. The protection of Indian reservations and the guarding of the Indian Territory from intrusion was its most important service. The invasion of the Indian Territory by parties of settlers from the adjacent State of Kansas, in violation of law and in spite of Executive warnings, led to the establishment of the new Military District of Oklahoma, under command of Col. Edward Hatch, of the Ninth Cavalry, and the movement of a considerable force of troops to that quarter. This induced the withdrawal of the invaders without any use of force. There were 314 cadets at the West Point Academy on the 1st of September. The number of inmantes of the Soldiers’ Home was 712, of whom 193 were admitted during the year. There were 533 prisoners in the Military Prison at Fort Leavenworth, June 30. There were 3,290 trials by general court-martial during the year, leading to 700 convictions for desertion, and 10,968 trials by garrison and regimental courts.
and private associations without ex-
the Government. Three new indus-
schools were put in operation during the
at Chilopeco, Indian Territory, for
one at Lawrence, Kan., pro-
or 300; and one at Genoa, Neb., for
new school-building was erected at
ques, N. M., which will accommodate
. At the industrial schools in serv-
, chiefly those at Hampton, Va., and
Pan, 565 Indian pupils were main-
ly the Government at a yearly cost of

aving Service.—The Life-Saving Service
the last fiscal year 201 sta-
which 156 were on the Atlantic coast,
the lakes, 7 on the Pacific, and 1 at the
the Ohio, Louisville, Ky. The number
ers within the field of their operations
year was 697 to documented vessels,
t smaller craft. The former carried
mos of whom only 16 were lost, and
$7,075,975, of their cargoes
454,050. Of this total of $10,580,025
y, but all $1,495,921 was saved. In
of small craft 189 persons out of 175
ed, and $71,200 of the $77,915 of
perilled was saved. The total num-
pwrecked persons that were succored
ious stations of the service was 532,
1,818 days' relief in the aggregate

Service.—The number of post-offices on
of June was 50,017, of which 8,414
lished during the year preceding,
discontinued. The number filled
ental appointment was 2,323; by
of the Postmaster-General, 47,654.
ber of appointments made during the
er was 11,893. The number of money-
nership to the previous year was 1,243, an increase of 886 dur-
year. The number of offices at which
elivery system was established was
number of carriers employed being
the inland mail service covered an
1,328 routes, with a total of
7,779 miles, and an annual trans-
1,519,053 miles, at a cost of $55-
117 steamboat routes, 15,591 miles,
annual transportation 3,882,288 miles, at a
cost of $596,573; 1,578 railroad routes of 117-
160 miles, and an annual transportation of
24,541,929 miles, at a cost of $15,012,505, ex-
clusive of $3,979,362 for railway postal clerks.
The total amount of the receipts for postal
service was $43,838,127; while the expendi-
tures were $46,404,986.

Prime-Meridian Conference.—An International
Conference was held at Washington, beginning
the 1st of October, for the purpose of
agreeing upon a common prime meridian.
Twenty-five nations were represented by
delates. On the 18th of October it was
agreed to recommend the adoption of the
meridian of Greenwich, which had been op-
posed by the delegates of France and Brazil.
It was decided that longitude should be reck-
oned east and west from Greenwich to 180°,
and that the universal day should begin for all
the world at the moment of mean midnight of
the initial meridian, and be counted from zero
up to twenty-four hours. A full discussion of
the subject may be found in the astronomical
article of this volume, page 54.

Washington Monument.—The marble cap-
stone, with the pyramidal apex of aluminum, which
completed the monument to Washington at the
national capital, was set on the 6th of Decem-
ber. The final dedication of the monument
was deferred until Washington's birthday, Feb.
22, 1885. For full particulars as to the dimen-
sions of the monument, and the progress of the
work, see the article WASHINGTON MONUMENT,
in the present volume.

UNITED STATES, FINANCES OF THE. The his-
tory of the national finances for 1884 was
marked chiefly by the continued reduction of
the public debt, contraction of the national-
bank circulation, and coinage and accumula-
tion in the treasury of the standard silver dol-
ars, and by the failure to enact any legislation
for the further reduction of the revenue, the
relief of the national banks, or the stoppage of
the silver coinage.

Receipts and Expenditures.—The receipts and
expenditures of the National Government for
the calendar years 1883 and 1884 were as
shown in the following tables:

<table>
<thead>
<tr>
<th>RECEIPTS</th>
<th>1883</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>revenue</td>
<td>$261,159,539 50</td>
<td>$168,666,191 96</td>
</tr>
<tr>
<td>gross</td>
<td>$265,740,626 28</td>
<td>$117,588,625 96</td>
</tr>
<tr>
<td>state</td>
<td>$10,677,811 37</td>
<td>$7,834,677 04</td>
</tr>
<tr>
<td>local</td>
<td>$4,348,360 59</td>
<td>$3,000,380 71</td>
</tr>
<tr>
<td>national</td>
<td>$4,448,645 76</td>
<td>$4,000,765 77</td>
</tr>
<tr>
<td>total</td>
<td>$19,474,828 89</td>
<td>$17,639,845 99</td>
</tr>
<tr>
<td>of interest by Pacific Railway Companies</td>
<td>$1,061,105 86</td>
<td>$1,000,448 01</td>
</tr>
<tr>
<td>of surveying public lands</td>
<td>$57,738 56</td>
<td>$87,409 74</td>
</tr>
<tr>
<td>reparation property</td>
<td>$412,700 91</td>
<td>$150,004 89</td>
</tr>
<tr>
<td>of Office property in New York city</td>
<td>$640,994 53</td>
<td>$60,065 98</td>
</tr>
<tr>
<td>in favor of the nation</td>
<td>$3,000,583 96</td>
<td>$3,000,583 96</td>
</tr>
<tr>
<td>of the Debt</td>
<td>$571,805 96</td>
<td>$571,805 96</td>
</tr>
<tr>
<td>to Treasury</td>
<td>$2,978,687 67</td>
<td>$2,978,687 67</td>
</tr>
<tr>
<td>in favor of the nation</td>
<td>$380,000 92</td>
<td>$380,000 92</td>
</tr>
</tbody>
</table>
any year since 1864. They reached est point in 1867, when they were 561.91. The decrease in the surplus # as $28,485,816.92. Notwithstanding ng off, the surplus revenue was greater any year since 1867, with the exception in 1883. Exceps from the various sources of in- venue during the last two fiscal years represented in the table in the adjoin- 

<table>
<thead>
<tr>
<th>LIABILITIES</th>
<th>Dec. 31, 1883</th>
<th>Dec. 31, 1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td>$8,048,908 87</td>
<td>$8,978,921 98</td>
</tr>
<tr>
<td>Officers</td>
<td>$8,178,922 98</td>
<td>$9,071,460 97</td>
</tr>
<tr>
<td>Writement of bank circulation</td>
<td>$8,314,023 50</td>
<td>$9,071,460 97</td>
</tr>
<tr>
<td>at, redemption fund</td>
<td>$14,511,974 73</td>
<td>$12,480,117 86</td>
</tr>
<tr>
<td>for special purposes, and interest</td>
<td>$5,096,048 57</td>
<td>$5,038,206 90</td>
</tr>
<tr>
<td>Notes</td>
<td>$17,905,328 90</td>
<td>$5,038,206 90</td>
</tr>
<tr>
<td>State</td>
<td>$9,091,920 00</td>
<td>$10,021,160 00</td>
</tr>
<tr>
<td>with certificates</td>
<td>$159,928,611 00</td>
<td>$10,021,160 00</td>
</tr>
<tr>
<td>Gold certificate</td>
<td>$14,560,000 00</td>
<td>$10,021,160 00</td>
</tr>
<tr>
<td>Silv &amp; miscellaneous items</td>
<td>$165,170,156 98</td>
<td>$141,560,160 00</td>
</tr>
<tr>
<td>Total liabilities</td>
<td>$473,729,910 87</td>
<td>$504,550,407 90</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ASSETS</th>
<th>Dec. 31, 1883</th>
<th>Dec. 31, 1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States notes owned by banks 1878, by resolution amended</td>
<td>$3,273,164 64</td>
<td>$3,136,354 63</td>
</tr>
<tr>
<td>Cash in banks</td>
<td>$1,553,859 90</td>
<td>$1,553,859 90</td>
</tr>
<tr>
<td>Gold coin</td>
<td>$10,000,000 00</td>
<td>$10,000,000 00</td>
</tr>
<tr>
<td>Silver coin</td>
<td>$10,000,000 00</td>
<td>$10,000,000 00</td>
</tr>
<tr>
<td>Silver certificates</td>
<td>$10,000,000 00</td>
<td>$10,000,000 00</td>
</tr>
<tr>
<td>State and United States notes</td>
<td>$10,000,000 00</td>
<td>$10,000,000 00</td>
</tr>
<tr>
<td>Total assets</td>
<td>$473,729,910 87</td>
<td>$504,550,407 90</td>
</tr>
</tbody>
</table>

The State of the Treasury.—The following is a comparative statement of the condition of the treasury on Dec. 31, 1883, and Dec. 31, 1884:

old coin and bullion on hand increased 19,014,739.68 to $234,975,851.95, or 112.32. The gold certificates actually ran up from $65,585,149 to $92, or $29,703,990, making a reduction in gold belonging to the Government of 167.68—from $155,429,599.93 to $141- 
95. The standard silver dollars on ceased $27,059,480, and the outstanding xed increased $18,148,190—from 721 to 114,885,911. The silver dol-

The aggregate increase in the circulation of the country during the the issue of gold and silver certificates ,550 the coinage of the United States, and as largely due to payments by the to the Clearing-House in New York. of that association, adopted Nov. 12, abolished payment of balances between ks at the Clearing-House in silver pes or silver dollars. The act of July 1, provides that no national banking on shall be a member of a clearing-which gold and silver certificates are not receivable in payment of balances. Upon the passage of this act, the associated banks, by resolution, amended the rule of 1878 as far as it conflicted with the law; but, by a tacit agreement among the members of the association, silver certificates are not tendered at the Clearing-House, and the question of their receivable in payment of balances does not arise. The treasury, since 1878, has been a member of the association. It is usually a debtor in the clearing-house settlements. Prior to August, 1884, it paid balances chiefly in gold or gold certificates. Under this policy the available gold ran down from $155,429,599 on Jan. 1, 1884, to $116,479,979 on August 12. In the same time the silver dollars and bullion not represented by outstanding certificates increased from $27,566,037 to $48,803,908. The Assistant Treasurer was therupon directed to pay one half of the Clearing-House balances in United States notes, of which a supply had accumulated beyond the needs of the treasury. This caused an immediate increase in the gold balance, though at the expense of the supply of United States notes. The stock of gold was also increased by the sale, during the latter part of the year, of exchange on the sub-treasuries in the West and South, payable in silver certificates, in return for deposits of gold in the sub-treasury in New York. By the end
UNITED STATES, FINANCES OF THE.

<table>
<thead>
<tr>
<th>LIABILITIES:</th>
</tr>
</thead>
<tbody>
<tr>
<td>paid in...</td>
</tr>
<tr>
<td>k notes issued...</td>
</tr>
<tr>
<td>total...</td>
</tr>
</tbody>
</table>

Outstanding: |
| notes outstanding... | $202,157,280 00 |
| paid... | $185,640,000 00 |
| deposits... | $447,246,000 00 |
| United States national banks... | $72,928,800 00 |
| United States banks and bankers... | $8,459,734 07 |
| rediscounted... | $8,415,294 07 |

Total... | $2,297,148,474 27

The increase in redemptions during the year 1884 was $28,245,176, or more than 20 per cent. The kinds and amounts of United States bonds held by the Treasurer as security for circulating notes issued to national banks at the close of the years 1883 and 1884 are shown below:

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Six per cents...</td>
<td>$2,588,000</td>
<td>$2,712,000</td>
</tr>
<tr>
<td>Four and one half per cents...</td>
<td>$4,294,000</td>
<td>$4,908,000</td>
</tr>
<tr>
<td>Three per cents...</td>
<td>$107,212,000</td>
<td>$118,909,000</td>
</tr>
<tr>
<td>Total...</td>
<td>$139,051,000</td>
<td>$154,521,000</td>
</tr>
</tbody>
</table>

The aggregate deposits and withdrawals of the various classes of bonds held on this account were:

<table>
<thead>
<tr>
<th>CLASSES OF BONDS.</th>
<th>Deposited.</th>
<th>Withdrawn.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Six per cents...</td>
<td>$65,000</td>
<td>$64,000</td>
</tr>
<tr>
<td>Four per cents...</td>
<td>$33,512,000</td>
<td>$31,798,000</td>
</tr>
<tr>
<td>Three and one half per cents...</td>
<td>$12,909,000</td>
<td>$8,948,000</td>
</tr>
<tr>
<td>Total...</td>
<td>$48,540,000</td>
<td>$73,888,000</td>
</tr>
</tbody>
</table>

The net increase in the 4 1/2 per cent. bonds was $34,849,950, and in the 4 per cents, $110,820,000. The net decrease in the 6 per cents was $19,000; in the 3 1/2 per cents, $425,000, and in the 3 per cents, $46,112,700. The net decrease in the total on deposit was $28,868,150. The continued calling in for redemption of the 5 per cent. bonds, which form so large a part of the basis of the national-bank currency, and the contraction of the bank circulation through the surrender of the banks of a large share of the issues secured by the bonds called in, continued to cause discussion during the year. The President, in his annual message, thus referred to the subject:

The 5 per cent. bonds of the Government to the amount of more than $100,000,000 have, since my last annual message, been redeemed by the treasury. The bonds of that issue still outstanding amount to little over $200,000,000, about one fourth of which will be retired through the operations of the sinking fund during the coming year. As these bonds still constitute the chief basis for the circulation of the national
United States, Finances of the.

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The Secretary McCallough, said in his report:

Money forced to the conclusion that, unless the use of dollars and the issue of silver is suspended, there is danger that silver may become our metallic standard. There will be no immediate suspension of the coinage of silver dollars or the issue of silver certificates in gold obligations; but business of all kinds will be greatly disturbed; not only so, but gold will be a circulating medium, and severe results will be the result.

President in his annual message said:

with the Secretary of the Treasury in regard to the immediate suspension of the coinage of silver dollars and the issuance of silver certificates in gold obligations, there will be no immediate suspension, but business of all kinds will be greatly disturbed; not only so, but gold will be a circulating medium, and severe results will be the result.

1885, a letter signed by ninety-eight members of the House of Representatives was addressed to President-elect, expressing the fear that the banks, holding more than those having fixed interest in making a united effort to commit the Administration against the coinage of silver, in the case of the silver dollars, and the House would do nothing that would aid in the suspension of coinage of both gold and silver.

and replied, February 24, that a financier, under the operation of the act of Feb. 23, 1878, was at hand; that the treasury were supplied with coins worth less than 85 per cent. 1 dollar prescribed by law as the unit and that the sum of gold in the treasuries for the payment of the gold obligations of the United States for the rest of the United States, notes, if not crooked upon, was perilously near.
Brought forward.
Butter, except of brass, gilt, or silk, and materials
Oils
Vegetables
Eggs
Coal, bituminous
Clocks and watches, and parts of
Rice
Hats, and manufactures of
Household and personal effects
Spirits, distilled, and compounds
Fertilizers
Musical instruments, and parts of
Paper, and manufactures of
Salt
Cocoa, crude
Paints and colors
Beeswax
Arms, and manufactures of
Malt liquors
Hay
Livestock, animal and vegetable
Marble, and stone, and manufactures of
Cork, wood or cork-back, unmanufactured
Jewelry, and manufactures of gold and silver
Corrugated
Cement
Brass and bronze
S wheel
Back, hemp, jute, and manufactures
Boiling-clothes
Other articles
Total

$857,897,598

The value of the imports fell off from $735,180,914 in the fiscal year 1888 to $667,067,098 in 1884, a decrease of $55,480,821.

The following shows the commerce for the fiscal year 1884 with those countries our exports to which exceeded the imports from them:

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain and Ireland</td>
<td>$152,543,408</td>
<td>$155,655,268</td>
</tr>
<tr>
<td>Netherlands</td>
<td>8,772,799</td>
<td>3,950,363</td>
</tr>
<tr>
<td>Belgium</td>
<td>10,923,160</td>
<td>25,060,050</td>
</tr>
<tr>
<td>Russia</td>
<td>11,010,609</td>
<td>11,940,813</td>
</tr>
<tr>
<td>British S. American possessions</td>
<td>85,200,825</td>
<td>44,506,190</td>
</tr>
<tr>
<td>Spain</td>
<td>5,307,530</td>
<td>11,660,190</td>
</tr>
<tr>
<td>British Australia</td>
<td>4,578,452</td>
<td>12,704,250</td>
</tr>
<tr>
<td>Mexico</td>
<td>4,701,446</td>
<td>12,704,282</td>
</tr>
<tr>
<td>Portugal</td>
<td>1,992,820</td>
<td>4,813,940</td>
</tr>
<tr>
<td>Denmark</td>
<td>560,900</td>
<td>3,064,900</td>
</tr>
<tr>
<td>Chili</td>
<td>587,986</td>
<td>3,070,400</td>
</tr>
<tr>
<td>United States of Colombia</td>
<td>9,601,488</td>
<td>3,681,321</td>
</tr>
<tr>
<td>Hong Kong</td>
<td>1,504,390</td>
<td>8,085,540</td>
</tr>
<tr>
<td>New Zealand, and Labrador</td>
<td>619,052</td>
<td>2,108,594</td>
</tr>
<tr>
<td>Gibraltar</td>
<td>1,714,195</td>
<td>2,115,150</td>
</tr>
<tr>
<td>Argentine Republic</td>
<td>4,735,160</td>
<td>2,115,150</td>
</tr>
<tr>
<td>Australia, New Zealand, and St. Pierre Islands</td>
<td>500</td>
<td>448,694</td>
</tr>
<tr>
<td>Total</td>
<td>$330,241,398</td>
<td>$200,136,827</td>
</tr>
</tbody>
</table>

The value of the exports of the products of agriculture, manufactures, mining, forestry, and the fisheries, during the fiscal year 1884, is thus known:

<table>
<thead>
<tr>
<th>PRODUCTS OF</th>
<th>Value.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>$354,815,818</td>
</tr>
<tr>
<td>Manufactures</td>
<td>$104,217,921</td>
</tr>
<tr>
<td>Mining (including mineral oils)</td>
<td>$4,982,549</td>
</tr>
<tr>
<td>Forestry</td>
<td>$6,981,111</td>
</tr>
<tr>
<td>The fisheries</td>
<td>$4,717,232</td>
</tr>
<tr>
<td>All other commodities</td>
<td>$4,717,232</td>
</tr>
<tr>
<td>Total</td>
<td>$734,964,250</td>
</tr>
</tbody>
</table>

The value of the exports of agricultural products fell off from $619,289,449 in 1888 to $580,815,818 in 1884, while the exports of all other commodities increased from $194,964,183 to $218,849,534.

Goods entered for Consumption, and Duties added—The following statement shows the value of dutiable merchandise entered for consumption into the United States, with the duties:

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>Exports.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cuba</td>
<td>$671,615,479</td>
</tr>
<tr>
<td>Brazil</td>
<td>$80,945,930</td>
</tr>
<tr>
<td>Switzerland</td>
<td>$70,942,418</td>
</tr>
<tr>
<td>British West Indies</td>
<td>$60,918,008</td>
</tr>
<tr>
<td>British East Indies</td>
<td>$19,500,468</td>
</tr>
<tr>
<td>Spanish, other than Cuba and Porto Rico</td>
<td>$16,689,081</td>
</tr>
<tr>
<td>China</td>
<td>$12,616,760</td>
</tr>
<tr>
<td>Japan</td>
<td>$11,276,408</td>
</tr>
<tr>
<td>Italy</td>
<td>$10,706,977</td>
</tr>
<tr>
<td>Austria</td>
<td>$1,744,640</td>
</tr>
<tr>
<td>Portugal</td>
<td>$890,160</td>
</tr>
<tr>
<td>Germany</td>
<td>$50,616,160</td>
</tr>
<tr>
<td>Hawaiian Islands</td>
<td>$2,902,800</td>
</tr>
<tr>
<td>Venezuela</td>
<td>$7,074,841</td>
</tr>
<tr>
<td>Sweden and Norway</td>
<td>$1,658,250</td>
</tr>
<tr>
<td>Dutch Guinea</td>
<td>$3,478,190</td>
</tr>
<tr>
<td>British Guiana</td>
<td>$9,402,454</td>
</tr>
<tr>
<td>Central American States</td>
<td>$2,594,470</td>
</tr>
<tr>
<td>British India</td>
<td>$2,594,470</td>
</tr>
<tr>
<td>French India</td>
<td>$2,594,470</td>
</tr>
<tr>
<td>French India</td>
<td>$2,594,470</td>
</tr>
<tr>
<td>British India and Mauritania</td>
<td>$2,594,470</td>
</tr>
<tr>
<td>Other British possessions</td>
<td>$2,594,470</td>
</tr>
<tr>
<td>Peru</td>
<td>$3,017,640</td>
</tr>
<tr>
<td>All other countries in Africa</td>
<td>$3,017,640</td>
</tr>
<tr>
<td>British West Indies</td>
<td>$1,209,550</td>
</tr>
<tr>
<td>British West Indies</td>
<td>$1,209,550</td>
</tr>
<tr>
<td>Dutch West Indies</td>
<td>$427,692</td>
</tr>
<tr>
<td>Spanish Africa</td>
<td>$118,673</td>
</tr>
</tbody>
</table>

Total: $1,212,388,818
thereon, during the year ended June the duties collected on each commodity or class of commodities, and the average ad-valorem rates of duty:

<table>
<thead>
<tr>
<th>ARTICLES</th>
<th>Values</th>
<th>Ordinary duties</th>
<th>Average ad-valorem rate of duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>sea, and confectionery</td>
<td>$24,399,589 68</td>
<td>$24,399,589 68</td>
<td>100%</td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a, and manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stores</td>
<td>$54,679,170 85</td>
<td>$54,679,170 85</td>
<td>100%</td>
</tr>
<tr>
<td>jute, and manufactures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flax, etc.</td>
<td>$12,500,000 60</td>
<td>$12,500,000 60</td>
<td>100%</td>
</tr>
<tr>
<td>rugs, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>precious stones</td>
<td>$1,126,398 92</td>
<td>$1,126,398 92</td>
<td>100%</td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a, ware</td>
<td>$7,408,200 65</td>
<td>$7,408,200 65</td>
<td>100%</td>
</tr>
<tr>
<td>pine, and china ware</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>materials</td>
<td>$1,240,900 61</td>
<td>$1,240,900 61</td>
<td>100%</td>
</tr>
<tr>
<td>engraving, etching, etc.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>machines</td>
<td>$2,340,900 61</td>
<td>$2,340,900 61</td>
<td>100%</td>
</tr>
<tr>
<td>suitcases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>metal and decorations</td>
<td>$1,240,900 61</td>
<td>$1,240,900 61</td>
<td>100%</td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>blocks</td>
<td>$1,240,900 61</td>
<td>$1,240,900 61</td>
<td>100%</td>
</tr>
<tr>
<td>molds</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>platinum</td>
<td>$2,340,900 61</td>
<td>$2,340,900 61</td>
<td>100%</td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>percha-percha manufactures</td>
<td>$1,240,900 61</td>
<td>$1,240,900 61</td>
<td>100%</td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tailorse</td>
<td>$1,240,900 61</td>
<td>$1,240,900 61</td>
<td>100%</td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>manufactures of...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>table</td>
<td>$6,340,900 61</td>
<td>$6,340,900 61</td>
<td>100%</td>
</tr>
<tr>
<td>duty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of discriminating duty</td>
<td>$661,536,836 91</td>
<td>$661,536,836 91</td>
<td>100%</td>
</tr>
</tbody>
</table>

Total duties collected, 25-77 per cent. on sugar, molasses, and confectionery 86 per cent. on wool and its manufactures 99 per cent. on manufactures of per cent. on iron and steel and their articles 99 per cent. on manufactures and 496 per cent. on flax, hemp, their manufactures. The aggregate duties collected on these six commodities and classes of commodities was $135,584,444,66, and was 71.43 per cent. of the total amount.

The total amount of duties that were collected and paid into the treasury during the last two fiscal years was the six commodities that yielded the greatest revenue, is shown in the table at the top of the succeeding page.
Under the act of March 8, 1888, the average ad-valorem rate of duty on all imported merchandise entered for consumption was reduced from 42-64 per cent. during the fiscal year 1888 to 41-70 per cent. during 1889, a fall of ninety-four hundredths (744) in the rate.

The Reduction of Taxation.—April 15, 1884, the House of Representatives, by a vote of 140 to 188, decided to proceed to the consideration of the so-called "Morrison bill," to reduce import duties and "war-tariff taxes," which had been reported from the Committee of Ways and Means on March 11. The bill, after being exhaustively debated, came up for final consideration in Committee of the Whole on May 6. Mr. Gove, a Democratic representative from Ohio, moved to strike out the enacting clause. The motion was carried by a vote of 156 to 161. The action of the committee being reported to the House, was concurred in by a vote of 189 to 165, only ten members not voting.

The President, in his annual message of 1883, said:

In my annual message of 1882, I recommended the abolition of all excise taxes except those relating to distilled spirits. This recommendation is now renewed. In case these taxes shall be abolished, the revenues that will still remain to the Government will, in my opinion, not only suffice to meet its reasonable expenditures, but will afford a surplus large enough to permit such tariff reduction as may seem to be advisable when the results of recent revenue laws and commercial treaties shall have shown in what quarters those reductions can be most judiciously effected.

The Secretary of the Treasury, in his annual report, discussed the condition of the foreign trade of the country, and urged that steps be taken to increase it. To this end he recommended the appointment of a commission, "composed of men not wedded to free trade or protection—fair-minded men, who would prosecute the inquiry thoroughly, comprehensively, and impartially." Continuing the consideration of the subject, he said:

In the commencement of its work the commission should, I think, regard the following points as being settled:

1. That the public revenues are not to be in excess of what is required for the support of the Government and the gradual reduction of the public debt.

2. That our manufactures, which under the fostering care of the Government have attained such gigantic proportions, and whose prosperity is essential to the welfare of all other interests, are not to be put in jeopardy by radical and sweeping changes in the tariff; and that all reductions of import duties should be made with a view to their ultimate advantage by opening to them markets from which they are now in a large degree excluded. . . .

Owing to the shortness of the time allowed to us for the consideration of the subject, I am not prepared to name the articles upon which duties should be removed or reduced. This much, however, may be proper for me to recommend:

1. That the existing duties upon raw materials which are to be used in manufacture should be removed. This can be done in the interest of our foreign trade.

2. That the duties upon the articles used or consumed by those who are the least able to bear the burden of taxation should be reduced. This can be effected without prejudice to our export trade.

In regard to our internal revenue taxes, I have to say that, as these taxes, with the exception of the tax upon whisky, ought not to be and will not be needed for revenue if appropriations are kept within reasonable bounds and rigid economy is established in all branches of the public service, I see no good reason for their continuance. The tax upon tobacco should, in my judgment, be removed. The tax upon whisky could not be repealed without a disregard of public sentiment, nor without creating a necessity for higher duties upon imported goods; but while this is true, the tax upon the alcohol used in manufacturing might be removed with decided benefit.

Congress did not adopt these recommendations, nor was any action on the subject of taxation taken at the second session of the Forty-eighth Congress, which closed March 5, 1888.

The colored chart shows the proportion of the total receipts from each principal source of revenue for each year since the establishment of the Government down to and including the fiscal year 1884. There were no receipts from postage in the year 1884, there being a deficit in the postal revenues, and the receipts from direct tax ($70,720.75) were too small to be indicated on the chart.

UNIVERSALISTS. The "Universalist Register" for 1888 gives the following summary of the statistics of the Universalist churches in the United States, Canada, and Scotland:

General Convention: 33 State conventions; 96 parishes, with 37,263 families; 687 churches, with 84,449 members; 611 Sunday-schools, with 51,935 members; 768 church edifices, having a value above indebtedness of $7,092,264; 689 clergymen in fellowship, and 14 licensed lay preachers. Of the members, 621 are in Canada and 120 in Scotland.

The educational institutions comprise twelve colleges, theological schools, seminaries, and academies, which report 109 professors and teachers, 1,327 students, and property valued at $2,373,000.

The Universalist Publishing- House returns about $45,000 of assets, and publishes and owns the copyrights of 150 volumes and 6 periodicals. The Chapin Home possesses property, including the building in New York city, valued at $129,102, and has 56 inmates.

General Convention.—The Universalist General * As the space allotted to the total receipts from all sources is the same for each year, however much that total may vary, it will be understood that the colored spaces furnish no basis for a comparison between the receipts from the same source for different years, but only indicate the proportion which to receipts from any source for any year bear to the total receipts for the year. For example, the customs receipts for 1883 were less than for 1888, though the yellow space indicates it is larger.
Constitution met at Peoria, Ill., October 31, and November 1, when the Convention adjourned.

F. D. W. J. oseph Joy presided. Twenty-one ecclesiastical jurisdictions were represented in 16 sessions by eighty-one delegates. The treasurer reported that his receipts for the year had been $33,000, and his payments $16,259.

The amounts of the convention funds were returned as follows: Murray fund, $2,457; theological scholarship fund, $50; John G. Gunn ministerial relief fund, $5,000. For the purpose of increasing the missionary funds of the Church, the Convention invited the parishioners to consider a plan for taking regular collections, at least once every Sunday, of the proceeds of which, one half should be retained for home use, and the other half qualitatively divided between the State and General Conventions, and recommended the formation of Young People's Missionary Associations in several parishes. The Woman's Centenary Association returned receipts during the year of $34,671, and disbursements of $34,466. Its permanent fund amounted to $4,115. It supports a mission in Scotland. The Universalist Historical Society returned a library of about 4,000 volumes, besides important manuscripts and papers.

Upholstery. Tapestries.—The ancient method of adorning mural interiors with silk and silk-and-wool tapestries has as yet been little revived in the United States. Examples, instead, of the work done by weavers of such tapestries in the several noted "periods" of French and English household art exist in American museums and in private families as wall-looms, but their presence as wall-hangings in dwellings is rare. But modern textile artists have devotedly studied the ingenious inlaidings of the silk and woolen threads that fringed these massive fabrics; while their subtle color-treatment and the majesty and beauty of their heraldic and sacred designs have inspired the pattern-makers of all progressive lands. Special interest in old tapestries was aroused by English, Flemish, French, and Flemish exhibits at the Exposition of 1876, many of the examples being of great antiquity. Some still remain among the permanent exhibits. Though not applied now, as in the furnishings of the middle ages, tapestries, by their great adaptability and varieties of texture, surpass all other decorative cloths. Washes, now so popular, combine rather than compete with them, and the two may be classed as the great staples of the trade. In tapestry-manufacture, even on power-looms, the identical weave and technique of the old hand-workers are marvelously imitated. The "Gobelin stitch" is quite creditably duplicated in American mills, and the low price of our tapestries gives them wide distribution. This is equally true in England, whence come, too, superb specimens in this branch of upholstery. France makes largely from the finest to the lowest grades; and German weavers are producing creditable tapestries. But in the profusion of rich material used, and in the disregard of time consumed in weaving, the old makers have as yet been neither eclipsed nor even reached.

First American Upholstery.—The first successful weaving in this country of cloths for coverings and draperies is credited to Philadelphia, where, about 1866, Isaac Stead, an Englishman, astonished the upholstery-dealers by producing, on hand-looms of primitive model, certain ropes and "Terry" cloths, then much used, and made mainly in England for the American trade. Stead's first product was readily taken by wholesalers, and the near approach of his cloths to standard foreign weavers deceived even expert importers, and set the customs officials of New York and Philadelphia on his track as a smuggler. The venture of this pioneer, though finally disastrous financially, was in every way creditable. The present firm of George Brooks & Son, in Philadelphia, began in upholstery in a small way, about the same time with Stead, and, after many and great discouragements, succeeded in making tapestries fully suited to the American trade. From Isaac Stead, the first weaver, came the present house of Stead & Miller. Philadelphia continues to be the center of upholstery. Each year adds to the city's yield of tapestries and curtains. George W. Ennis & Co. deserve special mention for first making in the United States (about three years since) fine, light-weight silk curtains on power-looms.

Lace.—An effort was made recently to start a lace-curtain factory in Pennsylvania, but was abandoned. Our supplies of lace curtains come now from Great Britain (Scotland, mainly), France, Germany, and Switzerland.

Materials.—It was long imagined by housekeepers and by manufacturers that only wool or silk singly, or else both, could be adapted to fit into curtains and coverings; but jute-fiber has of late years been largely substituted. Its wonderful luster, receptiveness to colors, and pliancy, make it a positive rival to silk, and the jute tapestries and velvets that reach us from abroad are freely used in high-class upholstery. The States of Mississippi and Louisiana are experimenting in jute-culture, and the fiber shown from these is superior. Our American woolens are used in upholstery cloths, and domestic mohair in small quantities is offered the plush-makers. For the silk chenille curtains and piece-goods now largely in use, and for tapestries, the silk stock used comes from China and Japan, being sold in its various stages as "raw" and "spun" silk, silk "waste," and "noils." Domestic cotton-yarns, as spun by improved machinery, enter largely into tapestries, and are freely combined with silk and wool in expensive goods. Tapestries made wholly of cotton, or relieved by threads of silk or wool, are popular, and are remarkably cheap. The illumination of tapestries and curtains with gold and silver tinsel-yarns is now common, and the effects are pleasing. The spinning of these tinsel-yarns,
at present imported, is now contemplated in New York and Philadelphia.

**Trimmings.**—Fringes, gimps, cords, and tassels for draperies, are made of silk and wool, and several large mills are employed in their production in New York, Philadelphia, and New England. Fringe-works at Chicago have recently begun business. Furniture-gimps, of silk, cotton, and worsted, are made in New York city and Philadelphia, in ample supply.

**Mohair Plushes.**—The vigilance of French and German weavers of mohair plushes has for a long period kept confined to those countries the methods proper to their production. Their great durability and beauty have secured for them a world-wide demand among upholsterers. So jealous, indeed, have been the plush-weavers, that few even of their own nationality have discovered the art, and in consequence the one town of Amiens, France, has, until recently, defied all competition, and compelled the most remote buyers to come there for plushes. German plushes first approached the French in excellence, but they lacked that subtle and pleasing finish imparted by the French manufacturers. English upholsterymen have repeatedly failed to make at home, even with imported help, a mohair plush that should sell along with that of the French. The explanation of this failure is the familiar one concerning French artisans—that the most skillful of them do not emigrate, and that, when working in the mills of other lands, they do not produce like results; in short, that French goods can only be made in France. This was seemingly verified in the experiment in 1876 of the New York Plush and Braid Company, which attempted plushes with the help of a Frenchman well trained in their weaving. They rapidly lost the capital invested, and made unmarketable goods. Subsequent events, however, have fully exploded all the superstition and glamour that attached to plush-weaving.

**Plush-Bodies.**—The recent death, in the prime of life (in 1885), of John H. Tingue, of Seymour, Conn., lends a melancholy interest to the annals of American plush-makers; for to him and to the Tingue Manufacturing Company, and to Charles Coupland, of their motive department, belong the honor of first introducing American mohair plushes, and of perfecting machinery for weaving them. We do not ignore the numerous and creditable experiments made prior to those of the Tingue company. Those (beginning in 1864-'65) were conducted mainly around New York city and in New Jersey, but in each instance, down to that of the New York Plush and Braid Company, the product was found so far below foreign standards that merchants would not handle it. In 1881 the Tingue Company, after long and careful tests, surprised the trade by submitting, for inspection and sale, genuine, merchantable mohair plush woven wholly by original methods at their factory in the Connecticut hills. Upholsterers pronounced favorably on the Tingue plushes, and their rapid distribution over the country followed. The company proceeded to enlarge their plant, and thus it was demonstrated that plush could be made in America. The carpet firm of J. & J. Dobson, of Philadelphia, made experiments in plush-making, which took definite shape about the same time as did those of the Tingue Company, and they rapidly followed with mohair plushes of equal excellence. They were the first in this country to manufacture high-grade silk plushes. To make a mohair plush that would be accepted by railways for the seatings of passenger-coaches has been from the first one of the chief aims of the mills. The first firm to claim entire success in car-plushes was L. C. Chase & Co., of Boston, whose factory in Maine has of late yielded very superior grades, especially in fine plain goods (as distinguished from the popular embossed plushes) not before attempted. This firm claim, also, machinery of their own invention and construction superior to the French, and further, that their plushes stand the “sun-tests” better than the imported. At Providence, R. I., one firm, D. Goff & Sons, large makers of cords and braids for upholstery, have recently begun making high-grade mohair plushes. Plushes of ordinary worsted, closely resembling real mohair, are made in Philadelphia and in Passaic, N. J. It is specially significant that American plush-weavers have started mainly with home-made machinery, and that, within the brief existence of the industry, our inventions in looms, in finishing-machines, and notably in embossing-machines and machines for the final accurate cutting of the pile, we have far surpassed all former inventions.

**Window-Shades.**—An important and growing branch of upholstery is that of window-shades and shade-cloth, made of ordinary bleached cotton-muslin, which, after passing through various processes of sizing and coloring, is sold in long pieces, or cut up into pairs of various widths and lengths, and decorated. The first seamless, plain oil shaded windows were made in Buffalo, N. Y., about the year 1867. In his efforts to perfect a machine for wide shadings, the owner of the factory sunk his fortune, and his subsequent manufacture has been conducted in New York city. Plain window “holland” (a cotton fabric finished somewhat like linen) was long imported from Scotland; but within the past five years American hollandes have supplanted them. The largest window-shade factories are in and around New York City. The best-equipped factories on plain oil shadings are at Oswego, N. Y.

**Threads and Tacks.**—In the minor essentials of tacks and threads for upholstery these American makers leave nothing to be desired. Several extensive upholstery tuck-work factories exist in New England, and a number have been successfully planted in the Western States, notably in Illinois. The Central Manufacturing Company's
the title of a huge corporation, which includes in its pool every important task-factory in the United States, and regulates absolutely the prices of tasks. The best of flax threads are required for upholstery, and extensive works are successfully conducted at Paterson, N. J., New York city, and Schaghticoke, N. Y. Each of these makes threads and flax yarns of all descriptions for upholstery.

**Upholstery Hardware.**—American shade-fixtures find a destination in every civilized country. In metal upholstery decorations decided progress is apparent. Large factories in New York, New Jersey, and Connecticut turn out all classes of drapery and cabinet hardware. In stair-rods of brass, silver, and wood, American goods are in the highest repute.

**Summary.**—Except in plushes we do not, as yet, make upholstery textiles the finish and finish of which would commend them for very high-class decorations. But in coverings and in silk draperies of moderate cost, in silk shantung and light-weight silk curtains, and in the items of silk and mohair plushes, real and imitation hair-cloths, upholstery hardware, and metal decorations, upholstery twines, threads, and tacks, the most gratifying progress has been made, and the yield in all of these essentials is abundant and of excellent quality. The seat of the industry is Philadelphia, where the number of plants far exceeds the entire aggregate of those elsewhere. The class of goods made at the several respective points are as follows: Philadelphia, tapestries, curtains, mohair and silk plushes, real and imitation hair-cloths; Paterson, N. J., worsted plushes; New York city and Brooklyn, tapestries and curtains; Seymour, Conn., mohair plushes; Woodbury, Conn., tapestries; Tarifville, Conn., silk twines; damasks; South Manchester, Conn., silk plushes; Sandford, Me., mohair plushes; Providence, R. I., mohair plushes, bindings, and picture-cords.

**Tariff.**—The customs duties on upholstery cloth and sundries are moderately protective, and were reduced somewhat by the Tariff Commission of 1882–83. The imports of foreign tapestries, plushes, brocades, damasks, and velvets, while heavy, are being considerably diminished by the rapid increase of factories. (See Hairs-Cloth, page 897.)

**URUGUAY.** A republic in South America. Area, 59,835 square miles; population in 1880, 498,424; in 1892, 505,507. The republic is divided into thirteen departaments: Montevideo, Canelones, La Colonia, Soriano, San José, Malvínado, La Florida, Paysandú, Salto, Cerro Largo, Minas, Durazno, and Tacarambó. Of the 438,246 inhabitants, according to the census of 1880, 388,026 were Indians and 140,222 foreigners. Of the latter, 59,780 were Spaniards, 38,303 Italians, 20,178 Brazilians, 15,546 Argentines, 14,875 Frenchmen, 2,772 Englishmen, 2,135 Germans, and 5,145 of other nationalities. Montevideo, capital of the country, had in 1879 a population of 73,838.

**Immigration.**—The number of persons arriving and departing during 1879–92 was:

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Immigration</th>
<th>Emigration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1879</td>
<td>20,867</td>
<td>34,428</td>
</tr>
<tr>
<td>1880</td>
<td>20,426</td>
<td>32,798</td>
</tr>
<tr>
<td>1881</td>
<td>25,926</td>
<td>34,841</td>
</tr>
<tr>
<td>1882</td>
<td>21,933</td>
<td>38,952</td>
</tr>
<tr>
<td>Total</td>
<td>115,808</td>
<td>208,402</td>
</tr>
</tbody>
</table>

**Gains in four years:** 9,604

**Irish Settlement.**—The Irish informers made a settlement in Uruguay in 1884, close to the Swiss colony on the Rio Negro. The British Government made arrangements with a "ranchero" on the Rio Negro to provide them work. At home they were all members of the Invisibles Society.

**Government.**—The President is Gen. Máximo Santos, who was elected for four years on the resignation of Dr. Vidal, and whose term of office will expire on March 1, 1886. The Cabinet is composed of the following ministers: Foreign Affairs, Dr. Manuel Herrera y Otero; Finance, Dr. J. L. Terra; Interior, Dr. Carlos de Castro; and War and Navy, Gen. Tajes. The Minister Resident of the United States, accredited July 5, 1882, is Hon. W. Williams, and the American Consul at Montevideo is A. L. Russell. The Uruguayan Consul-General at New York is Mr. H. Estrazulas.

**Army.**—The standing army comprises three battalions of sharpshooters, five regiments of horse, and two regiments of artillery, together 3,900 men and 354 officers. There is, besides, a police force of 3,900 men, and a National Guard of 20,000 men.

**Finances.**—The public debt on Jan. 1, 1888, was as follows:

| Outstandmg, redeemable without int€rest | $14,573,067 |
| Consolidated debt, originally bearing 12 per cent. interest, but converted into bonds paying 9 per cent. the first three years, and 6 per cent. the following seven years | 13,148,601 |
| Total | $27,721,668 |

Two and three per cent. bonds having ten years to run | $1,660,756 |

**Total | $28,050,414**

A bill was passed on May 12, 1888, unifying the internal and external debts, and by virtue of this law a 5 per cent. loan to the amount of $26,296,000 was contracted with London bankers, interest dating from Jan. 1, 1884. Toward the extinguishment of this debt a sinking fund was simultaneously created, which provides for the setting aside of one half of 1 per cent. annually for that purpose.

The revenue for the year 1879 was $5,252,087. The expenditures were $8,925,087. In 1881 the revenue was $7,890,000, and the expenditure $7,657,276. For 1882 the budget estimate of outlay was $8,900,000.

In December, 1884, the duties collected at Montevideo amounted to $541,943.

On December 31 the Credit Bureau paid the French legation $50,000, the second installment of the sinking fund, to extinguish the French debt; and on Jan. 5, 1885, the twenty-
second sinking-fund payment on the Italian debt was made, as well as that of the Higue-ritas Railroad bonds falling due. In spite of the promptness with which the Government was meeting all demands on the treasury, the market value of Uruguayan bonds in January, 1885, at Montevideo, was a fraction above 50.

Communications. Railroads.—There are in operation: 1. The Central Railway of Uruguay; Montevideo-Durazno line, 210 kilometers; the section from Juan Chaco to the city of San José, 32 kilometers; and the line between Juan Chaco and Higueritas. 2. The Upper Uruguay Railway, from Salto Oriental to Santa Rosa, 154 kilometers, and the line from Montevideo to Pando, 39 kilometers.

 Telegraphs.—There were in operation, in 1882, 1,002 kilometers, including a submarine cable of 160 kilometers. The offices numbered 19, the employés 64; 26,609 domestic messages were sent in the year, and 19,918 abroad, besides 7,630 in transit; together 53,557, against 29,538 in the previous year.

Postal Service.—There are in the republic 234 post-offices. The items of mail-matter dispatched were as follow:

<table>
<thead>
<tr>
<th></th>
<th>1880</th>
<th>1881</th>
<th>1882</th>
</tr>
</thead>
<tbody>
<tr>
<td>Items</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private letters</td>
<td>985,404</td>
<td>1,252,896</td>
<td>1,008,585</td>
</tr>
<tr>
<td>Registered letters</td>
<td>16,003</td>
<td>11,045</td>
<td>16,244</td>
</tr>
<tr>
<td>Government letters</td>
<td>69,111</td>
<td>69,164</td>
<td>66,780</td>
</tr>
<tr>
<td>Postal cards</td>
<td>11,267</td>
<td>12,541</td>
<td>12,185</td>
</tr>
<tr>
<td>Newspapers</td>
<td>1,016,696</td>
<td>1,708,147</td>
<td>9,644,711</td>
</tr>
<tr>
<td>Samples</td>
<td>2,600</td>
<td>9,050</td>
<td>4,319</td>
</tr>
<tr>
<td>Total</td>
<td>5,347,184</td>
<td>9,040,682</td>
<td>9,707,089</td>
</tr>
<tr>
<td>Money orders</td>
<td>819,000</td>
<td>640,866</td>
<td>640,867</td>
</tr>
<tr>
<td>Revenue</td>
<td>115,051</td>
<td>115,054</td>
<td>127,051</td>
</tr>
</tbody>
</table>

The Pampas.—A traveler who made a trip through the pampas of the republic in 1884 reports as follows:

The peculiar characteristics of these vast level plains, which descend from the Andes to the great river-basin in unbroken monotony, are the absence of rivers or water storage, and the periodical occurrence of droughts. These conditions determine the singular character of both its flora and fauna. The soil is naturally fertile and favorable for the growth of trees, and they grow luxuriantly wherever they are protected. The eucalyptus is covering large tracts wherever it is inclosed, and willows, poplars, and the fig surround every estancia when fenced in. The open plains are covered with droves of horses and cattle, and overrun by numberless wild rodents, the original tenants of the pampas. During the long period of drought which are so great a scourge to the country, those animals are starved by thousands, destroying in their efforts to live every vestige of vegetation. At the time of my visit, 50,000 head of oxen and sheep and horses perished from starvation and thirst, after treading dry underfoot, with soil every trace of vegetation, including the wiry roots of the pampas-grass. Large tracts are still honey-combed by the ubiquitous viscach, a gigantic rabbit, and numerous other rodents still exist, including rats and mice, pampas hares, and the great nutria and carpincho on the rivers. The death of plants is due to the unsuitability of the sub-tropical species of the neighboring zones does not hold good with respect to the fertile valleys of the Andes beyond Mendoza, where a magnificent hardy flora is found.

Agate.—The famous agate-quarries of Stein, Germany, were abandoned owing discovery, fully half a century ago, of supply of those stones in the river-gra Uruguay. Some German workers in who had emigrated to that region, not six court-yard of a farm-house paved with that reminded them of the agates of the live Oberstein. Specimens were soon sent home and cut, and the surprise to be correct. Since that time there has regular export of agate nodules from U to Oberstein. These "Brazilian agate" arranged in lots and are generally a auction—stones of ordinary quality bringing not more than four dollars a hght.

Farming.—Mr. C. P. Schmutz, in Journal, at Bremen, Germany, about zation in Uruguay, from which we tr the following: Cattle-raising and sheep ing will prove in the long run in Brazil and the northern La Plata state profitable for the colonist than agric As for wheat-growing, for example, been carried on energetically in some inces for several years, but in view of production elsewhere, and the great de prices, it lacks a future. Even now fi to a great extent, taken its place, but products does not promise well. Other products are not adapted for cultivation by rainy season being too short, the strong vailing, especially in the southern and portions, being such that while procen that direction you first traverse woo then isolated woods, grazing-grounds, s and finally deserts are reached. Another back is the grasshoppers. Between 1874 this scourage seldom made its appes since then they have afflicted the immemorial clouds. The raising of potato dian corn, and other crops that is p Stock-farming enjoys many advantages cially the mild winters and the three that lucern produces, affording an x fodder which even the grasshoppers c quite obliterable. Jerked beef is put the Brazilian, Cuban, and even Medi trade. It commands on the spot $5 to 46 kilograms, and a net profit of $11 is cleared from every head of cattle shape of beef, the hide, tallow, etc. Th is so cheap that it is profitably used manufature of beef-extract and meat-p the so-called "carne pura." Mutton in cater steamers, fitted up for the purp also being profitably exported to Eng stock markets.

Wool.—The ensuing tabular statement the wool production in Australia, at the of Good Hope, and in La Plata, redes millions of pounds of scoured wool:
UTAH.

<table>
<thead>
<tr>
<th>COUNTRIES</th>
<th>1884.</th>
<th>1883.</th>
<th>1882.</th>
<th>1881.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>2542</td>
<td>1484</td>
<td>1792</td>
<td>368</td>
</tr>
<tr>
<td>The Cape</td>
<td>49</td>
<td>246</td>
<td>328</td>
<td>464</td>
</tr>
<tr>
<td>La Plata</td>
<td>327</td>
<td>142</td>
<td>264</td>
<td>354</td>
</tr>
<tr>
<td>Total</td>
<td>3269</td>
<td>1998</td>
<td>2384</td>
<td>3544</td>
</tr>
</tbody>
</table>

Commerce.—The foreign trade movement of Uruguay, from 1880 to 1888, was as follows:

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>$19,200,000</td>
<td>$19,700,000</td>
</tr>
<tr>
<td>1881</td>
<td>17,200,000</td>
<td>29,200,000</td>
</tr>
<tr>
<td>1882</td>
<td>21,200,000</td>
<td>21,100,000</td>
</tr>
<tr>
<td>1883</td>
<td>28,300,000</td>
<td>25,300,000</td>
</tr>
</tbody>
</table>

American Trade.—The imports into the United States from Uruguay, and our exports to that country, for five years, are shown in the following table:

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Hides and skins</th>
<th>Wool, raw</th>
<th>Total imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>2,575,750</td>
<td>7,877,080</td>
<td>10,452,830</td>
</tr>
<tr>
<td>1881</td>
<td>2,890,620</td>
<td>8,224,255</td>
<td>11,114,875</td>
</tr>
<tr>
<td>1882</td>
<td>1,722,233</td>
<td>5,895,062</td>
<td>7,617,295</td>
</tr>
<tr>
<td>1883</td>
<td>1,716,020</td>
<td>5,902,718</td>
<td>7,618,738</td>
</tr>
<tr>
<td>1884</td>
<td>1,613,800</td>
<td>5,299,801</td>
<td>6,913,601</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>2,575,750</td>
</tr>
<tr>
<td>1881</td>
<td>2,890,620</td>
</tr>
<tr>
<td>1882</td>
<td>1,722,233</td>
</tr>
<tr>
<td>1883</td>
<td>1,716,020</td>
</tr>
<tr>
<td>1884</td>
<td>1,613,800</td>
</tr>
</tbody>
</table>

UTAH. Territorial Government.—The following were the Territorial officers during the year

- Governor, Eli H. Murray; Secretary, Arthur L. Thomas; Auditor, Nephi W. Clayton; Treasurer, James Jack; Superintendent of Public Instruction, L. J. Nutall. Supreme Court: Chief-Justice, John A. Hunter, succeeded by Charles S. Zane; Associate Justices, Philip F. Emerson and Stephen P. Twiss.

Legislative Session.—The commissioners appointed under the act of Congress of March 22, 1883, report, under date of April 29, 1884, that the Territorial Legislature met on January 14, and adjourned on March 14 "without accomplishing such legislation as is contemplated by said act of Congress." The members of this body were all Mormons, but none of them disqualified under the act of Congress (not being in polygamy). No act was passed concerning the marriage relation. A bill relating to registration and elections, and declaring the qualification of voters and office-holders, was passed in both houses, but failed to receive the approval of the Governor. By congressional law the Governor is a part of the legislative authority in Utah, and no law can take effect without his approval. In the opinion of the Governor, as set forth in his veto message, the bill was an evasion of the law of Congress, and did not come up to the requirements of the country in regard to polygamy.

Operation of the Edmunds Law.—The commissioners in their April report say:

Thus far the legislation of Congress has been directed against the crime of polygamy and "unlawful cohabitation," a full exposition of which was submitted in our last report. The present law provides for the punishment of polygamy and unlawful cohabitation by fine and imprisonment upon conviction in the courts of justice, and also for the disfranchisement of polygamists. Prior to this time when this board took charge of the conduct of registrations and elections in Utah, in August, 1883, nearly all the principal offices in the Territory were held by polygamists. The Legislative Assembly of 1883 (consisting of thirty-six members) were all in polygamy with the exception of two or three. Other offices, such as delegate to Congress, and Territorial, county, and municipal offices, were filled by polygamists in about the same proportion. The doctrine of "rotation in office" was almost unknown in Utah, and many of the polygamists had been kept in the same office from youth to old age. All this has changed under the act, and this commission entered upon its duties there have been elected in the Territory 1,851 officers, not one of whom is a polygamist. In this number are included 890 municipal officers. We have estimated the number of voters (male and female) who have been disfranchised by reason of polygamy at 12,000, and there is not now a polygamist in office in Utah. That the leading polygamists among the Mormons feel the effect of the Edmunds act as a heavy blow against their dominating influence has been proved to our satisfaction in many ways. Whether the actual practice of polygamy is on the decrease or not is a disputed question. We are of the opinion that in the more rural districts, chiefly in the southern part of the Territory, there has not been much decrease, while in Salt Lake county, and other counties where there are considerable cities and towns, there has been a decided decrease.

It is said that the large influx of non-Mormons since the completion of the transcontinental railroad in 1869, and especially since the development of mining in Utah, has brought about many changes for the better. It is not expected that legislation will effect any immediate change in the religious belief of the people, but it is claimed that, in conjunction with other influences, it will "place the obnoxious feature of Mormonism in a condition of gradual declension and final extinction." In a later report (Nov. 18, 1884), the commissioners express their views as follows:

After more than two years' labor and experience here, it becomes our duty to advise the Government and the country that, although the law has been successfully administered in respect of the disfranchisement of polygamists, the effect of the same upon the preaching and practice of polygamy has not been to improve the tone of the former or materially diminish the latter. For a year or more after the effort to enforce the law was initiated, polygamous teachings from the pulpit were rarely heard, and there were indications that the practice of polygamy might be expected to at least measurably decline; but during the present year there appears to have been a polygamous revival. The institution is boldly, defiantly defended and commended by the spiritual teachers, and plural marriages are reported to have increased in number. This reported increase in plural marriages seems to be coincident with the completion of the Mormon temple at Logan, the most prominent and influential city in the northern section of the Territory. The dedication of this temple was attended with great pomp and ceremony. A large concourse of people assembled there, Mormon fanaticism was blown into a flame, and polygamous marriages received an additional impetus; and although we have no official data upon which to base a statement—because the record of Mormon marriages, if there is one in this Territory, is a sealed book to all the world—it is undoubtedly true that an unusual number of plural marriages followed this event. There are four Mormon temples in Utah—one at Salt Lake City, Mant, Logan City, and Saint
George—only the last two being finished. Three former convictions of the Mormon adults, male and female, have never entered into the polygamous relation, yet every orthodox Mormon believes in polygamy as a divine revelation. There is, however, in Utah and several of the States a sect styling themselves the "Reorganized Church of Jesus Christ of Latter-Day Saints," commonly called Josephites, who discard polygamy as a spurious revelation, but who give full faith and credit to all the other so-called revelations given to the "Prophet Joseph." These "Josephites" are comparatively few in Utah.

**Polygamy Cases.**—Several indictments for polygamy were tried during the year. In the case of the United States vs. Rudger Clawson, the charge in the indictment was, that on Aug. 1, 1870, the defendant married Florence Ann Dinwoody, with whom he is still living as his wife, from whom he has not been divorced, and that on June 1, 1883, he married Lydia Spencer. The second count charged unlawful cohabitation under the "Edmunds act." Of this trial the commissioners say:

The jury had been selected under an act of Congress applicable only to Utah, which would ordinarily require the empanelling of a jury approximately composed of half Mormons and half Gentiles, provided there were no challenges. But in this case, in pursuance of a provision of the "Edmunds act," each juror was asked, "Do you believe it right for a man to have more than one living and un-divorced wife at the same time?" Each and every Mormon in the box—a few with hesitation, but nearly all with promptness—answered, "Yes, sir." All such were successfully challenged for cause. The list of jurors drawn under the act of Congress for the year 1884 having been exhausted by these challenges, and there being fewer than twelve remaining, an open venire was issued; so the panel was completed, consisting of twelve—all being non-Mormons. A protracted trial ensued, resulting in a disagreement of the jury. A new trial was begun on the succeeding day, at which the attendance of the second wife as a witness was secured. This trial resulted in a verdict of guilty on both counts of the indictment. The sentence was a fine of $600 and four years' imprisonment in the penitentiary. The trial of this case has caused a profound sensation throughout this Territory. The defendant and his two wives, together with many of the witnesses, belong to the upper class of Mormon society. He is the son of a bishop. Among all the witnesses examined—and there were many, including the immediate relatives of the parties, the president, and other high officers of the church—every one except the last witness, the second wife, disclaimed all knowledge of the marriage.

Following this trial there was another conviction for polygamy in the case of Joseph H. Evans, on the evidence of his second wife. He was sentenced to a fine of $250, and imprisonment in the penitentiary for three and a half years. In another case, that of John Connelly, there was an acquittal upon evidence tending to show that the prosecution was barred by the statute of limitations.

The case of G. W. Dunham was taken for review to the Supreme Court of the Territory, where the conviction was sustained; and thence to the Supreme Court of the United States, which in 1885 affirmed the decision of the Territorial Court, holding the constitution of the juries under the "Edmunds act" was illegal.

**Recommendations by Commission.**—Among the recommendations by the commission for congressional action are the following: A law giving the first (or legal) wife the right of dower as at common law; that the number of elective officers in the Territory be reduced, and the number of officers appointable by the Governor be correspondingly increased; that the confirmatory power be taken from the council and given to the commission; that the provisions of the law of 1874, relative to juries and the mode of selection, be revised either by providing for a greater number of jurors, or by authorizing an open venire when the names in the box have been exhausted. The commissioners regard it as "not unlikely that finally the Federal Government will find it necessary to take into its own hands all civil power in this Territory."

**Denominational Churches and Schools.**—On this subject the commissioners say: Honorable mention is due to the many Christian denominations that have established colleges, schools and churches in Salt Lake City and many other parts of the Territory. Among these are churches or schools maintained by the Presbyterians, Methodists, Congregationalists, Episcopalians, Baptists, Catholics, and perhaps others, all or nearly all of which have been accomplished within the last fifteen years. One or more of these churches and schools may be found in nearly all the principal cities and towns of the Territory, and are chiefly supported by the benevolence of the people and the churches of the States. The denominational schools now number 70, with an average daily attendance of nearly 6,000 pupils, many of whom are the children of Mormons.

**Mining.**—The value of the bullion product of the Territory in 1884 has been stated at $5,389,836. Another statement is as follows:

<table>
<thead>
<tr>
<th>Metal</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>4,540,927 pounds refined lead</td>
<td>$180,484.56</td>
</tr>
<tr>
<td>3,508,986 pounds copper</td>
<td>$608,432.15</td>
</tr>
<tr>
<td>5,629,436 ounces fine silver</td>
<td>$1,368,187.75</td>
</tr>
<tr>
<td>2,538 ounces fine gold</td>
<td>$115,000.00</td>
</tr>
<tr>
<td>68,873 pounds copper</td>
<td>$3,937.00</td>
</tr>
</tbody>
</table>

**Total export value.** $1,306,364

Computing the gold and silver at its market valuation, and other metals at their value at the seashore, would increase the value of the product to $2,301,508.

**Elections.**—The general election for county and precinct officers was held on August 4. The election for delegate to Congress occurred on November 4. Both elections were preceded by revisions of registration under direction of the commissioners, by which it is believed all polygamists were excluded from the privilege of voting. A few non-Mormons were chosen precinct officers; the other officers elected in August were Mormons not living in polygamy.

Of 40,743 persons registered, only 20,463 voted at the August election. In November, of 41,858 registered, 23,861 votes were cast. Of these, the Mormon candidate, John T. Caine, received 21,100; Ransford Smith, Gentile, 2,215; and 96 were blank. Mr. Caine has never practiced polygamy.
VENezuela, a republic in South America, is divided into eight States, one Federal District, eight Federal Territories, and two national colonies. The area is 1,889,388 square kilometres, and the population 2,121,988. The agricultural zone covers 489,489 square kilometres; pastures, 400,000; forests, 889,910. The number of foreigners settled in the country in 1881 was 44,916, of whom 11,644 were Spaniards, 4,041 British subjects, mostly from an island of Trinidad, 8,397 Italians, 206 Dutch subjects, from the neighborhood of Curacao, 2,186 Frenchmen, 1,171 Germans, 904 Danish subjects from St. Thomas, 739 Colombians, only 179 Americans, and 19 other nationalities.

The Federal capital is Caracas, at the foot of Mount Avis, which rises 2,852 meters above sea level. Its population in 1888 was 70,599. The cities next in importance are: Valencia, 6,145 inhabitants; Maracaibo, 31,931; Barquisimeto, 28,918; La Guayra, 14,000; Puerto Cabello, 10,145; Ciudad Bolivar, 10,801; Mérida, 10,747; Maturin, 14,743; Camagüey, 2,057; Carúpano, 12,689; Barcelona, 11,434; San Pedro de Lara, 12,000; Villa de Cura, 11,544; 'Ocaro, 15,388; and San Cristóbal, 10,741.

Education.—Elementary instruction has been compulsory and gratuitous since 1870. In 1879 the number of Federal free schools was 141, with 7,054 pupils, and there were besides 401 private and educational establishments. Ten years later there were 1,283 Federal free schools, 75,276 pupils attending them, besides 40 city and private schools with 17,398 pupils, and 92 barracks-schools where 1,300 soldiers were taught, making an aggregate number of educational establishments in 1884 of 1,786, attended by 94,661 pupils. In 1881 there were but 200 technical establishments, with 7,500 pupils; in 1840, 18 with 8,078; in 1854, 48 with 9,503; and in 1871, 300 with 10,000. The expenditure by the Federal Government in 1884, for 1,240 free schools, attended by altogether 77,175 pupils, was 2,123,985 bolivars or francs.

In universities and Federal colleges, 2,925 students are being instructed; in private institutions of the kind, 699; in national colleges for girls, 439; and in male and female normal schools, 106. There is a Naval School, and one of Telegraphy; and a Polytechnic Institute, as well as a School of Arts and Trades, have just been founded.

Libraries and Museums.—In 1874 all public libraries and collections, including those unearthed from convents, were united at the library of the Caracas University, which now numbers 30,000 volumes, besides the public documents. The National Museum is contiguous to the library. Another collection is being formed at the Palace of the Centennial, called the "Bolivar Library." New libraries are being founded at all the capitals of the eight States of the Confederacy. There are published in the republic 120 periodicals.

Government.—The President is Gen. Joaquín Crespo, whose term of office will expire on Feb. 20, 1886. The Cabinet is composed of the following ministers: Foreign Affairs, Señor Benjamín Quenza; Public Credit, Señor J. A. Valentini; Public Works, Señor Abelardo Arismendi; Finance, Señor Rivas Castillo; Interior, Gen. V. Amengual; and Public Instruction, Señor M. F. Pimental. President of the Supreme Court of the Confederacy, Señor A. A. Silva; and Governor of the Federal District, Gen. Bernardino Mirabal.

The Minister Resident of the United States at Caracas is the Hon. John Baker, and the American Consul at La Guayra is Scott Bird. The Minister from Venezuela to the United States is Señor A. M. Sotoelo. The Venezuelan Consul-General at New York is J. G. Call.

Finance.—There are two species of home debt: the consolidated, bearing 5 per cent. interest; and the convertible, not paying interest. The former amounted, on June 30, 1885, to 36,167,297 francs, and the coupons are paid with scrupulous punctuality. At the time the new era of radical reforms obtained ascendency, the nation owed abroad 276,000,000 francs; but the new régime, by dint of economy and clever management, succeeded in reducing the foreign debt to the trifling amount (considering the resources of the country) of 68,040,400 francs, the 8 per cent. interest being regularly paid quarterly in London. Venezuelan bonds are now looked upon with favor by foreign capitalists, and they are scarce.

The budget for 1882-'83 made the following estimates of income and outlay:

<table>
<thead>
<tr>
<th>Revenue</th>
<th>Francs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duty on imports</td>
<td>19,981,629</td>
</tr>
<tr>
<td>Transit on goods</td>
<td>4,414,401</td>
</tr>
<tr>
<td>Stamp tax</td>
<td>1,994,918</td>
</tr>
<tr>
<td>Salt tax</td>
<td>1,007,101</td>
</tr>
<tr>
<td>Income of universities and colleges</td>
<td>564,199</td>
</tr>
<tr>
<td>Income derived from Saraguro Territory</td>
<td>463,614</td>
</tr>
<tr>
<td>Income derived from Caura Territory</td>
<td>106,699</td>
</tr>
<tr>
<td>Interest earned by the state</td>
<td>187,400</td>
</tr>
<tr>
<td>Telegraph dues collected</td>
<td>120,071</td>
</tr>
<tr>
<td>Minor items of revenue</td>
<td>161,821</td>
</tr>
<tr>
<td>Total</td>
<td>38,957,093</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Expenditure</th>
<th>Francs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legislative and executive</td>
<td>183,814</td>
</tr>
<tr>
<td>Interior</td>
<td>2,855,086</td>
</tr>
<tr>
<td>Public Instruction</td>
<td>2,606,425</td>
</tr>
<tr>
<td>Public Works</td>
<td>4,540,113</td>
</tr>
<tr>
<td>Treasury</td>
<td>8,040,794</td>
</tr>
<tr>
<td>Public debt</td>
<td>4,230,090</td>
</tr>
<tr>
<td>War and Navy</td>
<td>2,410,568</td>
</tr>
<tr>
<td>Foreign Affairs</td>
<td>1,294,070</td>
</tr>
<tr>
<td>Justice</td>
<td>131,893</td>
</tr>
<tr>
<td>Contributions for States</td>
<td>8,029,068</td>
</tr>
<tr>
<td>Subsidies</td>
<td>916,907</td>
</tr>
<tr>
<td>Total</td>
<td>28,000,071</td>
</tr>
</tbody>
</table>

The actual expenditure, however, proved not to exceed 28,084,478 francs, while the revenue
collected reached 28,987,352. Aside from the Federal revenue, the Caracas city dues, and taxes in individual States collected in 1883, summed up 18,500,000 francs.

Army and Navy.—The regular army has a strength of 2,545 men, consisting of eight battalions of foot, one company of horse, and one of artillery, with 240 officers. In times of war the militia is enrolled. The navy is restricted to two small steamers and two schooners, mounting together eight guns.

Public Works.—During the six years from 1879 to 1884, the public exchequer handed over to the Minister of Public Works 59,080,086 francs, which were spent as follows: First three years, 33,137,156 francs; second three years, 25,882,920 francs. For buildings, bridges, embellishments, statues, streets, and surveys, 13,585,388 francs; and for railroads, highroads, telegraphs, hydraulic works, canals, irrigation, drainage, and mines, 12,307,547 francs.

Wages.—Common laborers are paid one hundred to one hundred and forty francs a month, if they find themselves; or fifty to eighty francs if they receive board and lodging; skilled laborers earn from one hundred and twenty francs monthly, upward, and forth; ex-cart-drivers, having their own teams, earn from eight to ten francs a day, but only four if they have to be furnished with a team; common day-laborers receive, without board and lodging, four to five francs daily; domestic servants receive eighty to one hundred francs a month; carpenters, blacksmiths, tanners, saddlers, journeymen rope-makers, masons, common mechanics, and coachmen, earn from six to ten francs a day; compositors, printers, and bookbinders are paid, without board and lodging, 6 to 12 francs a day.

Colonial Produce.—In 1873 there were under cultivation with colonial produce altogether 278,407 hectares; in 1878 there were 296,999 thus exploited; and in 1880, 941,199, of which 183,296 were devoted to coffee, 24,696 to that of cocoa, 89,300 to sugar-cane, 6,608 to tobacco, 2,000 to cotton, 650 to indigo, 11,300 to manioc, 37,500 to Indian corn, and 39,360 to other cereals, 37,383 to bananas, 1,060 to fruits and vegetables, 4,850 to wheat, and 850 were bearing cacao-nut trees. The increase in ten years was consequently 61,792 hectares, or about 22 per cent.

Stock-Farming.—There were in 1873 within the limits of the confederacy 1,889,805 head of cattle, 1,128,273 goats and sheep, 93,804 horses, 47,200 mules, 281,000 asses, and 862,597 swine. In 1876 these had increased respectively to 2,156,287, 1,209,418, 192,015, 156,020, 519,920, and 649,112; in 1883 to 2,929,728, 3,480,955, 291,608, 247,703, 658,764, and 976,500.

Dairy products and lard amounted in 1888 to 27,986,579 francs.

Minerals.—Venezuela abounds in minerals, such as gold, copper, silver, coal, iron, sulphur, lead, tin, petroleum, porcelain-clay, and asphaltum. The province of Guayana is a veritable El Do-

rado; the Aroa copper-mines are also very pro-
huctive, while Táchira has its petroleum-wells, and in the neighborhood of Caripano-silver and argentiferous lead are mined. There are be-

ing worked in Guayana fourteen gold-mines, the richest being El Callao. The latter closed in 1885 with 23,405 tons of quartz, and secured 106,396 ounces of gold, worth 10,150,355 francs. The Bolivar copper-mines of Aroa, commonly called New Quebrada, are worked by Engi-

lishmen with English capital, but find it difficult to make money at the present low copper price.

A railway connects the mines with Tucaca, and there is an iron steamer running semi-
weekly between Tucaca and Puerto Cabello. The ore-shipments of the New Quebrada Mining Company were 10,500 tons in 1880, worth 2,300,000 francs; 17,200 in 1881, worth 3,800,000 francs; 17,500 in 1882, worth 4,000,000 francs; and 80,000 in 1883, worth 6,087,561 francs; together, 78,200 tons in four years, representing a value of 16,137,561 francs.

Fisheries and the Chase.—The product in 1883 was: Turtles and fish 45,220,875 kilograms, worth 22,577,981 francs; shell-fish and sponges 1,465 kilos, worth 8,668 francs; game 25,388,940 kilos, worth 22,379,420 francs; and sial-glass, 12,274 kilos, worth 47,909 francs; together, 45,613,975 francs.

Sericulture.—Successful experiments were made on the hacienda La Cuadra, by Señor Radelli, in silk-worm breeding, and, as the climate on the plains of Venezuela seems to be eminently adapted for sericulture, a gentleman familiar with the subject of silk-production, Mr. A. Ernst, was requested by the Government to write a series of essays on the growing of silk. These essays were published, dating from June 11, 1884, in the Caracas "La Nación" newspaper.

Railroads.—In 1884 there were in operation 164 kilometres of railway, as follow: From La Guayra to Caracas, 56; from Tucaca to the New Quebrada copper-mines, 38; from La Ceiba to Mendoza, 21; from Caracas into the valley of Caracas, 6; and from Maliquita to Macuto, 10. There were then 140 miles of construction 194 kilometres, and 99 projected and actually under contract. There were being built from Puerto Cabello to Valencia, 54; from Caracas to Santa Lucia, 60; the unfinished track between La Ceiba and Mendoza, 20; from Caracas to Antimas, 10; from Santa Cruz to La Tría, 90; and from the Orinoco to the Yuruni mines, 200. Under contract, to be built without delay, there were from Caracas to Los Teques, 30 kilometres; from there to Guatire, 45; and to the Colonia de Guzman Blanco, 156; from Cerrito to Vela, 12; from Cojoro to Maracaibo, 155; and a line of 18 kilometres for the pur-
pose of avoiding the Orinoco rapids.

Telegraph Line.—There were in operation in 1884 about 1,883 kilometres of telegraph lines. A cable connects the Venezuelan system with that of Colombia, the latter, at Buenaventura,
g the world’s system. In 1888 there were 14,290 Government and 185,381 private
services, the latter producing 158,492 francs.
In 1884, the Government of Ven
macon a contract with Mr. L. Kohl, which
him permission to establish cable com-
fection between the republic and the
A contract was signed for
years, upon condition that the first
be in operation by Jan. 4, 1884.
Service.—The telephone service at Caracas
50 regular subscribers, and thence La
can be spoken to. The Intercontinental
Company has secured the privilege
riding several cities with telephone.
ial Service.—There are subordinate to the
al post-office at the capital 19 chief post-
in the States and Territories, and 140
offices. The items of domestic mail 
summed up in 1888 altogether 2,673,
at a total cost of 803,608 francs, out of
of the Postal Union received 88,435 francs.
ship Lines.—Eight lines of oce-
ships are established between Venezu-
e and the United States and Europe,
which navigate under the French flag,
der the British, one is German, two are
sh, and one is American.
merce.—The imports and exports in 1873
were as follows:

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>France</td>
<td>France</td>
</tr>
<tr>
<td>1873</td>
<td>43,167</td>
<td>82,004,580</td>
</tr>
<tr>
<td>1874</td>
<td>66,282,666</td>
<td>85,561,183</td>
</tr>
<tr>
<td>1875</td>
<td>69,909,769</td>
<td>83,894,728</td>
</tr>
</tbody>
</table>

Venezuela Trade.—The imports into Ven
from Venezuela, and exports thence,
were as follows:

<table>
<thead>
<tr>
<th>YEARS</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>France</td>
<td>France</td>
</tr>
<tr>
<td>1873</td>
<td>85,519,910</td>
<td>8,235,067</td>
</tr>
<tr>
<td>1874</td>
<td>44,225,014</td>
<td>6,901,477</td>
</tr>
<tr>
<td>1875</td>
<td>63,803,470</td>
<td>7,740,300</td>
</tr>
<tr>
<td>1876</td>
<td>62,939,262</td>
<td>7,240,300</td>
</tr>
</tbody>
</table>

Vermont State Government.—The following
the State officers during the year: Gov-
J. Barstow, succeeded by Samuel
ree, Republicans; Lieuten-Governor,
el E. Pierson, succeeded by Ebeneser J.
ried by Charles W. Porter; Treasurer,
H. Dubois; Auditor, E. H. Powell;
or of Finance, Charles Dewey, succeed-
- Carroll S. Page; Railroad Commissioner,
Bailey; Commissioner of Taxes, W. P.
Superintendent of Education, Jus-
Supreme Court: Chief Judge, Ho-
2. Royce; Assistant Judges, Timothy P.
succeeded by William H. Walker),
han Ross, H. Henry Powow, Wheelock G.
y, Russell S. Tatt, and John W. Bowell.

Legislative Session.—The Legislature met on
the 1st of October and adjourned on the 30th
of November. On the 14th of October Justin
Morrill, Republican, was re-elected United
States Senator. There were passed 137 acts
of a public character, besides special acts.
Of the work of the session a local reviewer says:

Several progressive and beneficent measures, moral
and material, of far-reaching consequence to the State
were proposed. Most of them have been either killed
outright or their strength and vigor destroyed. Many
measures of trivial importance, or of limited applica-
tion, or of local and selfish interest, have prevailed.
No measure of a distinctive general character, intim-
ately affecting the public welfare, has been passed
which will, like the act of 1880 to equalize taxation,
or of 1882 to provide a revenue for State expenses,
serve to commemorate the deeds of the General As-
sembly of 1884. Some of its more conspicuous acts are
that relating to the property-rights of married women,
a measure considerably changed by amendments in
the House from the form in which it originally passed
the Senate; the act, after more than a decade of per-
sistent refusal, to provide the means of preserving the
State Library; the act placing trust companies on the
same basis with savings-banks as to the limitations
and restrictions placed upon their management; the
act for the efficient protection of the fish in Lake
Champlain; and the high way bill. The Legislature has
appropriated money with a prodigal hand. A local-
option liquor-license bill, and a bill conferring on
women, under certain circumstances, the right to vote
at town elections, were defeated in the House.

Financial.—At the close of the fiscal year, Aug.
1, 1884, the State liabilities were as follow:

Due town, surplus fund . . . . $18,897 89
Due soldiers, unpaid balance . . . 5,508 60
Due suspended account (outstanding) . . . 1,504 54
Due Agricultural College fund . . . 185,500 00
Due temporary loan of 1869 . . . . 66,919 97

Total liabilities . . . . . . . . . . . $200,932 06

And the assets were as follow:
Cash on hand and in bank . . . . $16,149 44
Balance of corporation tax (unpaid) payable in August . . . . 75,000 00
Total assets . . . . . . . . . . . . $96,149 44

Only the loan of 1882 is subject to be paid presently, $50,310 87, showing an excess of
available assets over liabilities of $45,839 09.

All the corporations and persons reached by
the corporation tax law, with a single ex-
ception, made the returns required by the law,
and taxes were assessed during the calendar
year 1888 as follow:
Express companies . . . . . . . . . $4,279 71
Telegraph companies . . . . . . . . . 561 60
Telephone companies . . . . . . . . . 404 09
Steamboat, Car, and Transportation Company . . . . 1,718 18
Railroads . . . . . . . . . . . . . . . . 503,16 96
Savings-banks . . . . . . . . . . . . . . 6,771 78
Trust companies . . . . . . . . . . . . . 300 57
Home insurance companies . . . . . . . 1,868 65
Foreign insurance companies . . . . . . 16,850 60

Making a total for the year . . . . . $199,887 07

All which was paid into the treasury except
$2,585 36, making the amount received by the
Treasurer $196,879 71. Of this amount the
sum of $56,506 70 was paid under protest.

Relative to the "Huntington fund," Governor
Pinney says:

Also there stands another important trust in the
hands of the State not heretofore among these high,
important, and perpetual responsibilities. I refer to the "Huntington fund," which the Treasurer, in pursuance of a joint resolution of the General Assembly of 1885, directing him to collect and receive of the executors of the last will of Arunah Huntington, late of Brantford, P. Q., "all the property to which the State was entitled under said will, and deposit the same in the State treasury," has deposited the amount so received, to wit, $305,111.98, in the treasury in the month of April, 1888. This is for the common schools.

The current State expenses for the last two years were $548,494, or over $70,000 less than for the term ending in 1889. The Treasurer's report shows a deficiency of $32,171, which amount was borrowed from the Huntington fund. For many years previous to 1886 the balances were in the hands of the Treasurer and were the direct incentive to extravagance and loose practices in administration. The following is the list of taxable property for 1886 and former years: 1886, real estate, $7,14,747; personal property, $318,268; total, $89,162,909. 1891, real estate, $102,477,102; personal property, $44,936,977; total, $149,833,079. 1892, real estate, $106,577,539; personal property, $49,931,293; total, $156,408,832. 1883, real estate, $104,848,674; personal property, $49,568,180; total, $154,416,854. Offsets on personal property for debts were, in 1889, $32,000,000.

Schools.—We give below school statistics of the State for the year ending March 31, 1884:

<table>
<thead>
<tr>
<th>Description</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of districts</td>
<td>2,590</td>
</tr>
<tr>
<td>Public schools</td>
<td>2,550</td>
</tr>
<tr>
<td>Average number of pupils</td>
<td>727</td>
</tr>
<tr>
<td>Number of pupils enrolled</td>
<td>72,238</td>
</tr>
<tr>
<td>Number between five and twenty years of age</td>
<td>72,246</td>
</tr>
<tr>
<td>Average daily attendance</td>
<td>41,477</td>
</tr>
<tr>
<td>Number of male teachers</td>
<td>549</td>
</tr>
<tr>
<td>Number of female teachers</td>
<td>878</td>
</tr>
<tr>
<td>Average wages per week for male teachers</td>
<td>$4.56</td>
</tr>
<tr>
<td>Average wages per week for female teachers</td>
<td>$3.61</td>
</tr>
<tr>
<td>Total revenue for school purposes</td>
<td>$626,946</td>
</tr>
</tbody>
</table>

Comparing the above with the report for the year ending March 31, 1888, it is found that the number of school districts has decreased fifty, the number of schools has decreased three, the number of days of school has decreased four, the number of pupils enrolled has increased 569.

Savings-Banks and Trust Companies.—There are twenty-four savings-banks, savings-institutions, and trust companies in active business in the State, with 45,837 depositors, holding deposits aggregating $18,724,391.53, of which amount $11,327,100.78 belong to resident depositors and $5,394,218.75 to non-residents; the average amount deposited by each being $299.35, or about one third less than the year previous. There are but 272 depositors having to their credit over $2,000 each, and about one half of these deposits were in the seven trust companies. One half of the remaining amount is deposited by individuals in the amounts receivable from any one person, while the savings-institutions are prohibited from receiving in excess of that amount except from widows, orphans, executors, etc.

Forest Insitutions and Reform Schools.—The three institutions have a capacity for accommodating 426 persons, while the number of inmates in each, on Aug. 1, was as follows:

<table>
<thead>
<tr>
<th>Institution</th>
<th>1878</th>
<th>1880</th>
<th>1882</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Prison</td>
<td>175</td>
<td>149</td>
<td>90</td>
<td>90</td>
</tr>
<tr>
<td>House of Correction</td>
<td>70</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Reform School</td>
<td>145</td>
<td>102</td>
<td>66</td>
<td>64</td>
</tr>
<tr>
<td>Totals</td>
<td>391</td>
<td>281</td>
<td>206</td>
<td>200</td>
</tr>
</tbody>
</table>

For the past two years the expenses of the State Prison exceeded the income by $17,461. The House of Correction cost the State about $5,000 for the two years. During that time it received 827 prisoners. The Reform School cost the State $32,589.

Railroads.—Vermont has 1,065 miles of railroad, which cost $41,028,915. The roads have a capital of $29,455,300 and a funded debt of $19,230,900. During the two years ended July 31, 1884, 38 persons were killed by the cars, all employed on the roads; 69 persons were injured, of whom three were passengers.

Forestry.—From replies to a circular, the Forestry Commission find that from 50 to 90 per cent. of the native forests have been cleared off in the longer settled and better agricultural portions of the State in some localities; remote from railways virgin forests are still found. The annual clearing is now comparatively small, except in the vicinity of newly constructed railways. The annual diminution of forest acreage is smaller and growing less, and, in some sections, especially in the southern and southeastern, the forest area is increasing from old pastures and abandoned lands. The new growth is less valuable than the original. There is no systematic effort to replant abandoned and worn out lands with a forest growth. About twenty-five cords to the acre are cut after a growth of twenty years, increasing about one and one half cords a year in the next ten years. The use of coal is rapidly increasing and reducing the consumption of wood. The replies indicate less damage from forest-fires than was expected: it is, however, considerable in the aggregate, and the injury seems to be greatest to the second growth, and in places where the timber has been cut, and brush and tree-tops left to feed the forest-fires. No disease now affecting the spruce is reported. Injury to maple, tamarack, and some other trees from borers, caterpillars, and insects is reported, but the damage seems not to be great or general.

The answers to the questions in regard to the effect of the removal of the forests upon the springs, streams, and ponds of the State, with scarcely an exception, tell the same story that the water-supply is year by year failing; and that the smaller springs and streams, which...
never until recently been known to fail, become totally dry in a dry season.

The following were the Republican
ations: For Governor, Samuel E. Fin-
2nd-Governor, Ebenezer J. Orms
Secretary of State, Charles W. Porter;
1st-Auditor, William H. Dubois; Auditor, E. H.
2nd-Members of Congress: First District,
3rd-Stewart; Second, William W. Grout.
allowing were the Democratic nomina-
Governor, Lyman W. Reddington; Lieu-
t-Governor, Nathan P. Bowman; Treas-
Henry Gillett; Secretary of State, Herber
smith; Auditor, Carlos S. Noyes; Con-
First District, George H. Simmons; 3rd
District, Martin H. Goddard. At the
on the 3d of September, the Republi-
tate and congressional candidates were
The vote for Governor was: Repub-
18,280; other, 854.
legislature consists of 37 Republicans and
ocrats in the Senate, and 195 Republi-
Democrats, and 9 others in the House,
t for Presidential Electors on the 4th
number was as follows: Republican, 33;
Democratic, 17,381; Greenback, 780;
bition, 1,752; scattering, 27.

State Government.—The following
the State officers during the year: Gov-
William E. Cameron, Headjuster; Lieu-
t-Governor, John F. Lewis; Secretary of
H. W. Flournoy; Treasurer, Isaac R.
dale; Auditor, Morton Marye; Second or,
Frank G. Ruffin; Attorney-General:
S. Blair; Superintendent of Public In-
land-Office, Joseph A. Wingfield; Rail-
Commissioner, George A. Martin. Court
peals: L. L. Lewis, B. W. Lacy, R. A.
ative Session.—The Legislature which was
on the beginning of the year adjourned
19th of March. An extra session, called
demand of the Democratic majority, as-
ed in August, and did not finally adjourn
the beginning of December. At the reg-
session 571 acts were passed, and at the
session 200. Of these a large number
local or private. Many political acts were
over the Governor's veto, the general ef-
f which was to concentrate power in the
ature. Among the acts of the regular
were the following:
1. New charter for the city of Norfolk;
to the appointment of Capitol police, etc.;
the charters of the city of Portsmouth; to
medical science, and to protect graves and
private decoration; to regulate the practice
medicine and surgery; authorizing religious
consistories and other benevolent, literary, and
charities which are not incorporated to sell or
her property; incorporating the city of
(formerly town of Big Lick); regulating the
of licenses for the exercise of any privileges;
and the act relative to the formation of joint
companies; amending the law regulating
the tenement of directors of lunatic asylums, the law
regulating such asylums, and the law touching the
Deaf and Dumb and Blind Institute; dividing the
city of Petersburg into new wards, and providing for a new
registration therein; amending the law providing for
the appointment and removal of district-school trus-
tees; an act for the preservation of oysters, and to ob-
tain revenue for the privilege of taking them within
the waters of the State; providing for an eight-weeks
course of instruction for the colored teachers of the
State; repealing the collateral inheritance tax; regu-
lating the taking of oysters in the Potomac river; to
provide for the assessment of taxes on persons, prop-
erty, and incomes, and imposing taxes thereon for the
support of the government and public free schools,
and to pay the interest on the public debt, and to pro-
vide for the mode of applying for licenses to transact
any business in the State, and prescribing the amount
of such licenses; providing for the organization of the
militia; to prohibit the active participation in politics
of school-officers, and officers and employees of asy-
lums and institutions of learning; to lessen the dan-
ger of traveling on railroads, and to require them to
erect suitable depots, and to fence in railroad-beds;
joint resolutions relative to the State debt; and a
congressional reapportionment bill.

The following were among the acts of the
extra session:
1. To provide for the appointment of electors for Presi-
dent and Vice-President of the United States by elec-
tion by the people; providing for the assessment of
real estate in 1866 and every fifth year thereafter;
and to provide for the establishment of the Southwestern
Lunatic Asylum; to prevent the spreading of diseases
among domestic animals; requiring the banks of the
State to make regular reports to the State Auditor.

The following are the chief features of the
joint resolutions relating to the State debt:
1. That the people of Virginia have accepted the act
of Feb. 14, 1862, known as the "Riddleberger
bill," as the ultimate settlement of the debts of this
State; that it is their unalterable purpose that that
settlement shall be final, and that any expectation
that any settlement of the debt of this State upon any
other basis will ever be made or tolerated by the peo-
ple of Virginia is absolutely illusory and hopeless.
2. That the interests of the public creditors, as well
as the safety and welfare of the State, require that this
settlement shall be accepted by the creditors as well
as by the State, and therefore the General Assembly
of Virginia, on behalf of all the people of the State,
hereby advise and call upon the holders of all of the
bonds and claims against the State to come forward with promptness and fund the same.

An election law was passed at the regular
session, which was subsequently declared un-
constitutional by the Court of Appeals. It
provided for the election, by the Legislature
in 1884, and every four years thereafter, of
treeholders for each city and county, who
were charged with the duty of appointing the
election officers for the various precincts.
There was no provision in the law requiring
these freeholders or the election officers to be of
different political parties. At the extra
session this law was re-enacted in substantially
the same form, except that the requirement
that the city and county electoral boards should
consist of freeholders was omitted. The Court
had made that requirement the ground of its
decision. The new act is in litigation.

Finances.—The following are the transactions of the treasury for the year ending Sept. 30,
1884:
ON ACCOUNT OF COMMONWEALTH.

<table>
<thead>
<tr>
<th>Date</th>
<th>Balance</th>
<th>Received</th>
<th>Disbursed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 1, 1888</td>
<td>$1,268,986.08</td>
<td>$750,288.43</td>
<td>$4,128,625.45</td>
<td>$5,949,626.33</td>
</tr>
<tr>
<td>Oct. 1, 1884</td>
<td>$745,951.01</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

LITERARY FUND.

<table>
<thead>
<tr>
<th>Date</th>
<th>Balance</th>
<th>Received</th>
<th>Disbursed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 1, 1888</td>
<td>$117,185.47</td>
<td>$77,413.00</td>
<td>$294,757.47</td>
<td>$294,757.47</td>
</tr>
<tr>
<td>Oct. 1, 1884</td>
<td></td>
<td>$256,935.04</td>
<td>$756,628.32</td>
<td>$756,628.32</td>
</tr>
</tbody>
</table>

ON ACCOUNT OF INTEREST ON PUBLIC DEBT.

<table>
<thead>
<tr>
<th>Date</th>
<th>Balance</th>
<th>Received</th>
<th>Disbursed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 1, 1888</td>
<td>$17,594.27</td>
<td>$56,053.77</td>
<td>$294,757.47</td>
<td>$294,757.47</td>
</tr>
<tr>
<td>Oct. 1, 1884</td>
<td></td>
<td>$256,935.04</td>
<td>$756,628.32</td>
<td>$756,628.32</td>
</tr>
</tbody>
</table>

SINKING FUND.

<table>
<thead>
<tr>
<th>Date</th>
<th>Balance</th>
<th>Received</th>
<th>Disbursed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 1, 1888</td>
<td>$49,939.50</td>
<td>$500,000.00</td>
<td>$500,499.50</td>
<td>$500,499.50</td>
</tr>
<tr>
<td>Oct. 1, 1884</td>
<td></td>
<td>$256,935.04</td>
<td>$756,628.32</td>
<td>$756,628.32</td>
</tr>
</tbody>
</table>

MILLER FUND.

<table>
<thead>
<tr>
<th>Date</th>
<th>Balance</th>
<th>Received</th>
<th>Disbursed</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 1, 1888</td>
<td>$288,380.51</td>
<td>$159,232.80</td>
<td>$289,528.81</td>
<td>$289,528.81</td>
</tr>
<tr>
<td>Oct. 1, 1884</td>
<td></td>
<td>$147,109.28</td>
<td>$294,220.28</td>
<td>$294,220.28</td>
</tr>
</tbody>
</table>

The act of the Virginia Legislature of Jan. 30, 1889 (amended March 18, 1884), required tax-collectors to receive in discharge of taxes, licenses, and other public dues, gold, silver, United States treasury notes, national-bank currency, and nothing else, and thereby forbade the receipt of coupons. Several suits were brought in the Federal and State courts to test the constitutionality of the latter act. These were taken to the Supreme Court of the United States, and that tribunal, in 1885, decided that the act of the General Assembly of Virginia of Jan. 26, 1880, and the amendments of act of March 18, 1884, are unconstitutional and void, because they impair the obligation of the contract of the State with the couponholder under the act of March 30, 1871.

POLITICAL.—The Readjuster State Convention met in Richmond on April 23, under the leadership of United States Senator Mahone. Delegates (favorable to President Arthur) to the Republican National Convention were chosen, and candidates for Presidential Electors were nominated.

On April 30 the Straightout Republican State Convention met in Richmond. Delegates to the National Convention of the party, favorable to Mr. Blaine, were chosen. These delegates, however, representing but a few voters, were not admitted to seats at Chicago.

The delegates from the Readjuster Conventions were recognized. The Democratic State Convention met also in Richmond, on the 14th of May. At the election on the 4th of November the vote for Presidential Electors was as follows:

<table>
<thead>
<tr>
<th>PARTY</th>
<th>Senate</th>
<th>House</th>
</tr>
</thead>
<tbody>
<tr>
<td>Democrats</td>
<td>12</td>
<td>66</td>
</tr>
<tr>
<td>Republicans</td>
<td>16</td>
<td>66</td>
</tr>
</tbody>
</table>

WASHINGTON MONUMENT. The Washington Monument, practically completed in 1884, was begun in the early summer of 1848 by the Washington National Monument Society, after designs by Robert Mills, which were, however, considerably modified soon after, the pantheon around the base of the obelisk provided for originally being abandoned. The original foundation of granite was 28 to 30 feet thick, 80 feet square at the base, and 58 feet square at its top. The shaft was started 55 feet 15 inch at the base, with 15-foot walls, which had a facing of 15 to 18 inch white marble. Work progressed slowly, till, at the close of 1866, the obelisk had been carried up to a height of 106 feet, the expense incurred by the Washington National Monument Society having been $300,000. On the 19th of January, 1877, the society conveyed all its property to the United States. No further work was done till 1878, when the first steps were taken to strengthen the foundation, in accordance with plans made by Lieut.-Col. T. L. Casey, U. S. Engineers, who had charge of the building of the monument from 1877. This strengthening, a delicate operation, since the weight of the 156 feet shaft alone was 32,378 gross tons, consisted in enlarging the area of the foundation by excavating the earth to a depth of 16 feet from under a strip 18 feet wide within the outer edges of the old foundation, and 23 feet without the same line, and filling it in with concrete. The area of the foundation was thus enlarged from 6,400 to 14,000 square feet. It was necessary, besides, in order to distribute the pressure of the shaft over this new founda-
WASHINGTON TERRITORY.

About one half of the old rubble-heap from under the walls of the shaft was removed by a concrete underpinning, and the work of building the observatory began in August of the same year. The shaft, which is 13 feet square at the base, and 547 feet 9 3/6 inches above the mean of the Atlantic Ocean at Sandy Hook, is 838 feet 9 3/6 inches above the mean of the Potomac. At the top of the shaft there is only 1 5/6 feet thick, and the apex is 7-inch marble slab, composed of separate pieces, and capped by an alpine point, the largest single article of that kind. At a height of 100 feet the wall is reduced to a thickness of 5 feet 7 inches, and from that level the walls were plumb on the inside. The total cost of the monument was $1,877,710.81, of which $20,000 was expended by the Washington Monument Society. The weight of the stone is 43,433 gross tons, the weight of the iron 300 tons, the weight of the iron 275, and the foundation and earth is 30,400 tons, making the total 53,400 tons. A pamphlet has recently been published by John C. Goodridge, containing foundation-work, and serious doubt on the stability of the structure.

HISTORY OF PUBLIC INSTRUCTION.

The Territorial officers during the time were: Governor, William A. Newell; Secretary, W. A. Squire; Treasurer, T. N. Ford; Auditor, L. D. Barrett; Surveyor-General, J. C. Kerr. Supreme Court: Chief-Judge, John S. Greene; Associate Justices, Samuel H. Wingard, George Turner, John P. Hoyt.

The Territory comprises an area of 98,964 square miles, of which 3,114 acres are timber-lands, on which there are 400,000,000,000 feet of merchantable timber; 5,000,000 acres rich alluvial bottom land, and 10,000,000 acres prairies and plains. The timber-lands are nearly all in the western part of the Territory, and the fertile cerealizing prairies and plains in the eastern Shoshonee, just north of the Columbia river, contains extensive flats with oysters, thousands of baskets of which are shipped to various cities on the Pacific coast. Large bodies of land along the Sound, near the mouths of the rivers, in Snohomish and Skagit counties, have been reclaimed from overflow by dikes, and have proved very productive. It is estimated that 27,000 acres have already been diked, and that 250,000 acres more on the sound, besides 28,000 acres on Shoalwater Bay and the Pacific coast, might be thus reclaimed. The population is estimated at 150,000.

Financial.—The Territory is free from debt, and on July 1, 1884, had $47,901.81 in the treasury. The rate of taxation is 2 1/8 mills on the dollar, besides 1/3 of a mill for penitentiary purposes. The following table shows the assessed value by counties in 1888 and 1884:

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>1883</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adams</td>
<td>$12,044</td>
<td>404,906</td>
</tr>
<tr>
<td>Asotin</td>
<td>460,919</td>
<td>1,014,181</td>
</tr>
<tr>
<td>Chelan</td>
<td>100,183</td>
<td>280,400</td>
</tr>
<tr>
<td>Clarke</td>
<td>1,504,800</td>
<td>1,654,600</td>
</tr>
<tr>
<td>Columbia</td>
<td>2,862,616</td>
<td>2,384,579</td>
</tr>
<tr>
<td>Cowichan</td>
<td>1,014,616</td>
<td>718,965</td>
</tr>
<tr>
<td>Douglas</td>
<td>500,000</td>
<td>149,008</td>
</tr>
<tr>
<td>Franklin</td>
<td>1,370,129</td>
<td>1,319,183</td>
</tr>
<tr>
<td>Garfield</td>
<td>495,006</td>
<td>405,106</td>
</tr>
<tr>
<td>Jefferson</td>
<td>145,964</td>
<td>182,619</td>
</tr>
<tr>
<td>King</td>
<td>3,190,109</td>
<td>1,147,046</td>
</tr>
<tr>
<td>Kingman</td>
<td>1,680,706</td>
<td>1,073,009</td>
</tr>
<tr>
<td>Kittitas</td>
<td>2,127,757</td>
<td>2,947,757</td>
</tr>
<tr>
<td>Kittitas</td>
<td>1,000,393</td>
<td>1,184,755</td>
</tr>
<tr>
<td>Lewis</td>
<td>1,050,578</td>
<td>1,014,590</td>
</tr>
<tr>
<td>Lincoln</td>
<td>1,001,902</td>
<td>1,001,902</td>
</tr>
<tr>
<td>Mason</td>
<td>4,774,708</td>
<td>381,105</td>
</tr>
<tr>
<td>Pierce</td>
<td>2,815,869</td>
<td>4,928,883</td>
</tr>
<tr>
<td>skin</td>
<td>192,526</td>
<td>218,395</td>
</tr>
<tr>
<td>Skamania</td>
<td>135,585</td>
<td>92,908</td>
</tr>
<tr>
<td>Skagit</td>
<td>462,814</td>
<td>624,925</td>
</tr>
<tr>
<td>Snohomish</td>
<td>624,925</td>
<td>624,925</td>
</tr>
<tr>
<td>Stevens</td>
<td>123,140</td>
<td>324,159</td>
</tr>
<tr>
<td>Spokane</td>
<td>5,437,356</td>
<td>1,180,481</td>
</tr>
<tr>
<td>Thurston</td>
<td>1,060,482</td>
<td>1,149,296</td>
</tr>
<tr>
<td>Whatcom</td>
<td>1,289,482</td>
<td>820,205</td>
</tr>
<tr>
<td>Walla Walla</td>
<td>2,569,289</td>
<td>5,928,790</td>
</tr>
<tr>
<td>Wallowa</td>
<td>3,044,149</td>
<td>4,056,941</td>
</tr>
<tr>
<td>Yakima</td>
<td>800,580</td>
<td>849,027</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$44,107,667</td>
<td>$51,908,495</td>
</tr>
</tbody>
</table>

Adams, Asotin, Douglas, Franklin, Kittitas, Lincoln, and Skagit are new counties, assessed for the first time in 1884.

Agriculture.—In fertility of soil and climate, conditions favoring the production of crops, and in the climate among the states, probably no country in the world can surpass that portion of the Territory bordering on Idaho, a boot-shaped region extending southward from near Spokane Falls to Colfax, and thence to and including the Walla Walla valley. It was expected that the Oregon Railway and Navigation Company would bring out from eastern Washington Territory alone the present year 150,000 tons of wheat and flour. Great interest is also centered in the Big Bend country lying west of Cheney. During the past year settlers have peopled this region more rapidly than ever. The extensive valleys of Klickitat, Yakima, and Kittitas, just east of the Cascade range, have great capabilities for development, being adapted to fruits and cereals as well as to stock-raising.

In western Washington less attention has hitherto been paid to agriculture than to lumbering and mining; but the recent reports of hop-farming in this part of the Territory and
TERRITORY.

The Hospital for the Steilacoom. This post having long been a garrison by the United States and 600 acres of land were set aside as a hospital, at a nominal price, in 1871. It was occupied by the hospital in 1871. The number of patients, was 586. The hospital is free to the Territory, which is an annual expense of $2,500 a year for its operation. It has a Penitentiary building, 18 acres, containing thirty-six cells, as of land at Seattle, near the county. The number of discharged, 25; escaped, 2. A grant for the manufacture of soap has recently been erected, and convict-labor is employed.

The following is a report of the public schools of Washington for the year beginning July 1, 1888.

<table>
<thead>
<tr>
<th>Description</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>150,148</td>
</tr>
<tr>
<td>Boys</td>
<td>536</td>
</tr>
<tr>
<td>Girls</td>
<td>564</td>
</tr>
<tr>
<td>Total</td>
<td>1,095</td>
</tr>
<tr>
<td>Expenditure</td>
<td>$10,350</td>
</tr>
<tr>
<td>Total cost per year</td>
<td>$20,600</td>
</tr>
<tr>
<td>Average cost per student</td>
<td>$15.70</td>
</tr>
</tbody>
</table>

The territory of Washington is composed of ten acres. It has a campus of ten acres. It has 157 students. There are 37 males and 70 females. Its area is 1,095 square miles. The average temperature on the coast, from June to November, is 65°, and from November to June, 60°. In the mountains, 4,000 feet above sea-level, the average is 55° the year round. The mercury has never been known to go higher than 95°, nor below 60°.

The Governor draws a salary of $30,000, with a $2,500 allowance for traveling expenses. There is a Colonial Secretary at $6,500 a year, with a staff of assistants, in all costing $30,000 a year for salaries; a Department of Public Works, with a payroll of about $65,000 yearly; an Auditor, $18,822; a Treasurer, $17,800; and a Stamp Department, $8,858; Collector.
WEST INDIES.

803

exercise of their religion. In answer to csmonstrance, the Governor ordered the f-war Dido to come round to the San ado roadstead and land marines. As ain procession would have to traverse wn, in order to get to the sea-shore, he d thither 74 negro policemen and 20 a. At Port of Spain, which has a popu-

23

of 35,000, 20 policemen and 40 soldiers except in readiness. There everything re-

1 quiet, but not so at San Fernando, the coolie procession with its pagodas 1 at the gates of the town, the policemen soldiers stopped them. The coolies be-

the greatest consternation and exict-

a few of them raised their pilgrim as though they would force a passage. were unarmed. Immediately the officer mand caused the riot act to be read, and it a word of further warning he ordered into the crowd. The volley killed 12 and ed 99, among them women and children. the morning of Jan. 29, 1884, a great fire ed almost entire the city of Port of the loss being estimated at over $4,400. The fire originated in the Union Club, and in a short time the whole south-

portion of the town was in ruins. The re no fire department.

overies of new asphaltum beds were n 1884, on the north shore, about half a ast of the Bay of Esperanza. In some the pitch flows up out of the earth in a uid condition. A workman has dug to path of eight feet, and found the pitch at ith free from all admixture with organic derived from the thick growth of brush in the neighborhood.

sugar shipments from the land in 1884 tied to 44,288 hogheads, 10,107 tereces, 37,394 bags, against 39,924 hogheads, tereces, and 115,379 bags in 1885. The shipments were 13,386,845 pounds, against,

3050 and 11,919,392 in 1885 and 1882 tively. Of asphaltum there were shipped tons, against 39,811 in 1885, and 30,873 2.

American trade with the British West for five years is shown in this table:

<table>
<thead>
<tr>
<th></th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td></td>
<td>Lionel</td>
<td>Lionel</td>
</tr>
<tr>
<td>Total imports</td>
<td>$5,425,010</td>
<td>$5,409,570</td>
</tr>
<tr>
<td>Total exports</td>
<td>$5,425,010</td>
<td>$5,409,570</td>
</tr>
<tr>
<td>Great Britain</td>
<td>$5,425,010</td>
<td>$5,409,570</td>
</tr>
<tr>
<td>United States</td>
<td>$5,425,010</td>
<td>$5,409,570</td>
</tr>
<tr>
<td>Central American republ.</td>
<td>$5,425,010</td>
<td>$5,409,570</td>
</tr>
<tr>
<td>Total countries</td>
<td>$5,425,010</td>
<td>$5,409,570</td>
</tr>
<tr>
<td>Total</td>
<td>$5,425,010</td>
<td>$5,409,570</td>
</tr>
</tbody>
</table>

The foreign debt of the colony amounts to £396,000. The income is $2,395,000, and the outlay $3,145,000.

The Royal Geographical Society has undertaken to bear a large part of the expense of E. F. im Thurm's expedition to the wonderful table-topped mountain Rosaima. (See Mountain Exploration.)

The foreign trade to this colony is as follows: Imports, $10,000,000; exports, $15,400,000. Of the total exports sugar amounted to $12,500,000, there being exported of it from Jan. 1 to Oct. 31, 1884, 91,596 tons, against 85,985 in 1883, out of which there went 77,115 tons to England, against 41,644 the previous year. Rum was shipped to the amount of $1,450,000, so that sugar and its products may be considered as constituting the whole export of the colony, which may be said to be all shipped to England and the United States.

British Honduras.—This is a colony on the Atlantic coast of Central America, fronting on the Gulf of Honduras; area, 7,582 square miles; population, 27,652. The Governor is R. T. Goldsworthy. The American Consul at Baltra is A. E. Morian.

The revenue of the colony is $280,000, and the expenditure $225,000. The total trade movement in 1883 of the colony was as follows:

<table>
<thead>
<tr>
<th></th>
<th>Imports</th>
<th>Exports</th>
<th>Total trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Britain</td>
<td>$515,094</td>
<td>$656,000</td>
<td>$1,397,094</td>
</tr>
<tr>
<td>United States</td>
<td>469,347</td>
<td>887,000</td>
<td>1,357,347</td>
</tr>
<tr>
<td>Central American republ.</td>
<td>60,600</td>
<td>173,000</td>
<td>233,600</td>
</tr>
<tr>
<td>All other countries</td>
<td>18,549</td>
<td>86,000</td>
<td>104,549</td>
</tr>
<tr>
<td>Total</td>
<td>$1,164,000</td>
<td>$1,260,000</td>
<td>$2,424,000</td>
</tr>
</tbody>
</table>

Of the exports above given, products to the value of $375,000 were foreign, the greater portion of these going to the Central American states and to the United States; those going to the former being composed principally of British cotton goods and other British manufactures, while those shipped to the United States were composed of Central American products.

Great Britain imported from Honduras during the calendar year 1888 products to the value of $1,210,000, and exported thereto manufactures to the value of $685,000; an increase in the first of $48,000, and in the second of $75,000.

The principal exports of British Honduras consist of fruits, cabinet and dye woods, and sugar. British exports thither in the order of their value were as follow: Cotton goods, apparel and haberdashery, soap, woolens, iron manufactures, linens, hardware and cutlery, arms and ammunition, beer and ale, silk goods, cordage, earthen and glass ware. Foreign goods to the value of $110,000 were among the British exports to the colony during 1888.

The exports from the United States consist of breadstuffs and provisions, cotton goods,
WEST INDIES.

brought the colony an annual revenue of 1,000,000 francs.

The Governor of Guadeloupe reported that in the very year when sugar was lowest the island produced the largest crop it ever made, of about 35,000 tons; and that the price obtained did not cover cost. The Governor also said that he had addressed a circular of inquiry to all planters and owners of sugar-houses, and they were unanimous in their reply that the only way the sugar industry could be assisted would be to pay a bounty on all sugar shipped, whether to France or abroad. Later he reported that the passage of the sugar bill in the French Chambers had infused new courage into the minds of planters, and that, with the assistance of the Colonial Bank, they had begun to actively prepare their fields for the 1884-85 sugar-crop.

In January, 1885, news was received that the agricultural and commercial condition of Guadeloupe had improved, and that the coffee-crop would yield well. Up to November 1, there had been shipped 110,501 hogsheads of sugar, against 102,699 in 1884. There had also been exported, during the first eleven months, 196,497 litres of molasses, 102,292 kilogrammes of cocoa, 874,010 kilogrammes of anatto, 1,240,138 kilogrammes of logwood, and 1,901 kilogrammes of vanilla.

The American trade with the French West Indies is shown in this table:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Total imports</th>
<th>Total exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1880</td>
<td>$3,373</td>
<td>$25,084</td>
</tr>
<tr>
<td>1881</td>
<td>3,023</td>
<td>5,692</td>
</tr>
<tr>
<td>1882</td>
<td>15,082</td>
<td>16,904</td>
</tr>
<tr>
<td>1883</td>
<td>10,284</td>
<td>16,904</td>
</tr>
<tr>
<td>1884</td>
<td>12,567</td>
<td>10,007</td>
</tr>
</tbody>
</table>

WEST VIRGINIA.

State Government.—The following were the State officers during the year: Governor, Jacob H. Jackson, Democrat; Secretary of State, Randolph Stalnaker, Jr.; Treasurer, Thomas O’Brien; Auditor, Joseph S. Miller; Superintendent of Free Schools, Bernard L. Dutcher; Attorney-General, C. C. Watta. Judiciary, Court of Appeals: Presiding Judge, Okey Johnson; Associate Judges, Samuel Woods, Adam C. Snyder, and Thomas C. Green.

Financial.—The following statements show the condition of the finances for the two years ending Sept. 30, 1983, and Sept. 30, 1984:

Receipts during the year ending Sept. 30, 1984: $618,798 36
Balance at the end of preceding year: 301,229 29
Total: $919,027 65
Disbursements during the same period: 877,710 37
Balance Oct. 1, 1884: 242,217 28
Receipts during the year ending Sept. 30, 1984: $606,992 42
Balance Oct. 1, 1883: 242,217 28
Total: $849,210 74
Disbursements during the same period: 830,810 47
Balance Oct. 1, 1884: $29,399 78

The payments into the treasury for 1883 and 1884 were largely in excess of the amounts estimated by the Auditor for these years. The excess for each year was made up from temporary loans made by the State to meet casual deficits in the treasury, amounting for 1883 to $133,000, and for 1884 to $115,000. There was a further increase for 1884 by reason of an increase of the levy for 1885 of five cents on the $100 value, the revenue for which year was paid into the treasury during 1884.

The following table shows the increase in the personal property since 1881, as also the increase of real estate, under the reassessment act of 1882:

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>1881</th>
<th>1882</th>
<th>1883</th>
<th>1884</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real estate</td>
<td>$100,000,000</td>
<td>$100,000,000</td>
<td>$100,000,000</td>
<td>$100,000,000</td>
</tr>
<tr>
<td>Personal property</td>
<td>$10,000,000</td>
<td>$10,000,000</td>
<td>$10,000,000</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>Total</td>
<td>$110,000,000</td>
<td>$110,000,000</td>
<td>$110,000,000</td>
<td>$110,000,000</td>
</tr>
</tbody>
</table>

Hospital for insane.—The entire building was completed in 1881, and was at that time deemed to be sufficient for many years to come. All of the insane were removed from the county jails to the hospital, making the total of patients treated for the year ending Sept. 30, 1881, 539. The reports of the superintendent for the past three years show a gradual increase of patients, and the hospital is now crowded to its fullest capacity. The number
1883-84, the biennial system obviated the necessity of any such expenditure in 1884. There was no receipt on the fund in 1884. The school-fund account in 1884, $15,495.67, and the producer school fund on that day amounting to $3,918,612.16, and the school-fund interest for the biennial term was $395,973.62. The total amount of the university fund proper for the two fiscal years was $152,058, of which $350 was interest on the Johnson endowment, $20,932.20 were received from the interest, and $29,701.77 from interest on the state fund, and $198,059.98 from the tax. The Agricultural College fund now interest is $385,965.62, and the income fund for the biennial term was $34,947.54. The total amount of the normal school fund now interest is $1,290,572.86, and the income for the period, including interest, tuition, etc., was $176,535.96.

**Summary Statistics.**

- **Horses:** 373,959; total value, $17,450, average value, $46.82; neat-cattle, 1,090; total value, $14,405,189; average value, $13,765.55.
- **Mules and asses:** 7,263; total value, $390; average value, $46.10; sheep and
  - **Sheep:** 1,167,534; total value, $1,886,627; average value, $1,597.
- **Swine:** 80,647; total value, $2,162,051; average value, $2,63.
- **Wagons:** 27,791; total value, $5,360; average value, $186.68.
- **Watches:** 19; total value, $537,440; average value, $27,536.
- **Pianos, organs, and melodeons:** 28,181; total value, $1,502,698; average value, $53.42.
- **Bank stock:** 46,326; total value, $9,012. Value of merchants' and manufacturers' stock, $99,911,775. Value of all personal property, $31,168,143.
- **Total value of all personal property as ascertained, $96,472. Land, 28,043,940 acres; total value, $348,389,889; average value, $12,155. Valuation of city and village lots, $130,614,995. Total value of real estate, $378,853,864. Total value of all property, $487,950,836.

**Insurant.**

From the report for the fiscal years 1883 and 1884, of the State Superintendent of Insurance, the following statistics are gleaned:

- of persons between three and twenty years of age, June 30, 1884, 289,500
- between seventeen and fifteen years of age, 35,517
- six years old and under, June 30, 1884.
- students in the public schools in 1884, 33,304; teacher during 1884, 14,739.
- with all the above being more than 185,000.
- students in normal schools, colleges, and the various denominational theological schools, including model departments in normal schools, 326,560; teachers required for all schools in 1884, 7,409.
- persons of both sexes, 1884, 326,560.
- teachers required for all schools in 1884, 7,409.
- persons of both sexes, 1884, 326,560.

The loss has been estimated at $200,000,000.

** articulate and Penal Institutions.**

- Of the whole amount appropriated for these institutions for 1883 and 1884, there remained unexpended on Sept. 30, 1884, $125,981.60, and on Jan. 1, 1885, $55,474.10. The total number of persons cared for in the six State institutions was 3,721, and the daily average was 2,016; the total cost to the State for current expenses to Sept. 30, 1884, was $551,081.60, and to Jan. 1, 1885, $721,108.40.
- The State Hospital for the Insane had an average of 475 patients under treatment for 1888, and an average of 510 for 1884, and cost $96,545.70 for 1888, and $91,732.34 for 1884. The Northern Hospital for the Insane had an average of 457 patients during 1888, and 613 during 1884, and the current expenses for 1888 were $114,755.48, and for 1884 $117,110.48.
- The Institution for the Education of the Blind had an average of 37 pupils for 1888, at an expense of $18,670.68; and an average of 63 for 1884, at an expense of $17,553.32.
- The Institute for the Education of the Deaf and Dumb had an average of 188 pupils in 1883, and 205 in 1884, at an expense of $33,660.80 for 1883, and $33,566.27 for 1884.
- The Industrial School for Boys at Waukeesa had an average attendance of 291 for 1888 and 300 for 1884; and the current expenses for 1888 were $42,936.73, and for 1884 $42,293.74.
- The State Prison at Waupun had an average of 368 prisoners during 1888, and an average of 398 during 1884. The current expenses of the prison for 1888 were $50,081.39, and for 1884 $58,949.52; and the proceeds of the convict labor for 1883 were $99,911.83; and for 1884 $44,648.92.

There are now organized, under the laws, eleven county institutions for the care of the insane. The Industrial School for Girls had, on Sept. 30, 1884, an attendance of 165 pupils.

**Railroads.**

The total miles of railroad in Wisconsin, on Dec. 1, 1884, was 3,904.54; an increase of 370.78 miles since Dec. 31, 1882. The earnings for the year ending June 30, 1883, were $19,706,888.10, an average of $3,544.20 per mile of operated road; the operating expenses and taxes were $12,513,755.93, an average of $3,393.74; and the net earnings for the year were $7,192,132.18, or an average of $1,950.46 per mile. The earnings for the year ending June 30, 1884, were $20,411,573.96; expenses and taxes, $12,689,955.48; earnings per mile, $5,131.91; expenses per mile, $3,190.54; net earnings, $7,721,577.47; and net earnings per mile, $1,941.37. The number of passengers carried in 1883 was 3,807,057, being an equivalent of 169,991,927 passengers carried one mile. In 1884 there were 4,473,480 passengers carried, or an equivalent of 199,919,011 passengers carried one mile; being an average of 46.69 miles traveled by each passenger, and at an average cost of 2.69 cents per mile. The number of tons of freight carried in the State in 1883 was 4,465,387, equal to 788,852,663.
friends and sharers of each other's among the fruits of this fellowship establishment of the doctrine of isomorphs in melilitic and cyanaric acids, the essential oil of bitter almonds, investigation of benzoic acid, which a the discovery of benzyol, and the cent of the theory of compound or- cles. Their joint researches in uric ted in the determination of fifteen sounds. On the basis of these dis- have two chemists predicted the ex-! researches of kindred character, roused by their successors, have re- the discovery of numerous series of compounds, each grouped around some mon to all its members. Among researches of Woehler may be men- ones which he conducted with Sainte- ville on boron and its compounds innum and nitrogen, which led to the of a theory of the origin of borax: waters; and those prosecuted with icon, which resulted in the discovery spontaneously inflammable hydride of i which was chosen for that element as an array of compounds as has been round carbon; his improvements in aion of nickel, and the observation upound of carbon, nitrogen, and ti- the lustrous copper-colored cubes sometimes found in the slags from -furnaces. "Of all the elements the chemist up to the period of Woeh- tion from work," says Prof. Thorpe, e safely affirmed that there was not hat had passed through his hands in or other, and the number of miner- teorists he analyzed is legion. In all, 3 author of 275 memoirs and papers; iteen were published with Liebig's sical published works are his trans- Berzelius's "Yearly Reports" and s "Text-Book of Chemistry"; the ss der unorganischen Chemie und Chemie" (Sketch of Inorganic and Organic Chemistry); "Mineral nit Beispielen" (Mineral Analysis, mples); etc. In summing up the Foehler's work, Prof. Thorpe points: that he made Göttingen famous as of chemistry; and that on the con- the twenty-first year of his connec- the university it was found that more 0 students had attended his lectures i his laboratory. "He was a man orid has delighted to honor, and there y an academy of science or a learned ich has not in some way or other rec- is services to science." Prof. Wurtz, ag his career, remarked that "with peared one of the few survivors of 1 of satans whose labors and celeb- the first half of the century, and 3 men of my age were glad to call ers."

WYOMING. Territorial Government.—The fol- lowing were the Territorial officers during the year: Governor, William Hale; Secretary, Eli- liott S. N. Morgan; Treasurer, F. E. Warren; Auditor, Jesse Knight, succeeded by Perry L. Smith; Superintendent of Public Instruction, John Slaughter; Judiciary, Supreme Court: Chief-Justice, James B. Sener, succeeded by John W. Lacey; Associate Justices, Jacob B. Blair and Samuel C. Parks. John C. Perry, of Brooklyn, N. Y., was appointed Chief-Jus- tice Sener's successor, but died before entering upon the discharge of his duties.

Legislative Session.—The Legislature, consist- ing of 8 Democrats and 4 Republicans in the Council, and 13 Democrats and 11 Republicans in the House, met on January 8, and adjourned on March 8. The following are among the acts passed:

1. To amend section 1 of an act entitled "An act to preserve the public peace by preventing the display of knives."
2. To define misdemeanors and to provide for the punish- ment thereof.
3. To prevent and punish circulation of obscene and immoral literature.
4. Concerning the occupation of the public domain.
5. To amend an act entitled "An act to prevent the spread of malignant disease among sheep."
6. To amend an act entitled "An act providing for the organization of school districts, schools, and for other purposes."
7. To authorize the Board of County Commissioners of the several counties to sink artesian wells at their respective county seats, and at other places in their counties.
8. To encourage and protect the interests of wool- growers.
9. To amend section 96 of an act entitled "An act to provide elections, the manner of conducting the same, and for other purposes."
10. To establish and define a legal standard of time in and for the Territory.
12. To incorporate the city of Laramie.
13. To define the offense of an aggravated assault and battery, and to provide for the punishment thereof.
14. To amend an act entitled "An act to create and regulate corporations."
15. For the incorporation of churches, parishes, and re- ligious societies.
16. To punish certain persons for selling or otherwise disposing of spirituous, vinous, fermented, or malt liquors to minors or habitual drunkards.
17. Authorizing the city of Cheyenne to issue bonds.
18. Concerning the keeping of swine and goats.
19. To punish the procurement of abortions.
20. To amend an act defining crime and providing for the punishment thereof.
21. To prevent the procuring of intoxication.
22. To provide for the revision and compilation of the statute laws.
23. To amend an act defining crime and providing for the punishment thereof.
24. To provide for the education and training of juve- nile delinquents.
25. To prevent the adulteration of foods, drinks, and medicines.
27. To render effective the laws of the Territory of Wyoming within that portion of the Yellowstone Park lying within said Territory, etc.
28. For the propagation and culture of fish.
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