THE LARVA OF BLEPHARIDATTA
(HYMENOPTERA: FORMICIDAE)

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Abstract. — The larva of the myrmicine genus Blepharidatta is described for the first time and illustrated. The genus is transferred from the tribe Ochetomyrmecini to a new tribe Blepharidattini.

HISTORY

Wheeler described the genus Blepharidatta in 1915 and assigned it to the myrmicine tribe Attini; he added, “but it differs so much from the other known genera in the structure of the head and especially the 2-jointed club of the antennae, the 4-toothed mandible and the regularly arranged setiform hairs on the dorsal surface, that it seems necessary to establish a distinct genus for its accommodation. Apart from the head the structure of the body is very simple and primitive for an Attine [sic!] ant, even simpler and more primitive than in the genus Proatta, recently established by Forel for a unique Sumatran species.” Wheeler also described as the type species brasiliensis from Pará, Brazil.

Gallardo (1916:319) reported finding several worker ants at Alta Gracia, a mountain resort ca. 20 mi south of Córdoba, which is in the province of Córdoba, in north-central Argentina.

Emery (1921–1922) placed Blepharidatta in the Dacetini (p. 12) because of its “tête cordiforme, échancrée par derrière et fort rétrecie devant” and separated it from the other genera (p. 313) by the “scrobe occupant tout le bord latéral de la tête; mandibules courtes, pouvant se croiser.” He gave the distribution (p. 315–316) as “Brésil: Pará, Argentine” and said: “Cette Fourmis a une ressemblance frappante avec le genre fossile Hypopomymex de l’ambre de Sicile. M. Wheeler classe le genre Blepharidatta parmi les Attini. Il me semble avoir bien plus d’affinité avec les Dacetini.”

Wheeler stated (1922:376) that the habits of Blepharidatta are unknown. In his key to genera (p. 668) he separated Blepharidatta from all other attine genera by its distinct 2-jointed antennal club and its long antennal scrobes.

In 1953 Brown transferred Blepharidatta to the tribe Ochetomyrmecini because it is “very closely related to the species Wasmannia Forel, differing chiefly in its more elongate head with produced posterior angles and in having a long, low petiolar node.”

Kempf in 1967 described a second species (B. conops), from Três Lagoas, Mato Grosso State, Brazil. He also placed the genus in the tribe Ochetomyrmecini.

In 1975 Kempf devoted several pages to prove that Ochetomyrmex and Wasmannia could not be in the same tribe and suggested “at least as a provisional solution, the transfer of Ochetomyrmex to the Solenopsidine tribal complex, in the sense of
Ettershank. Thus the tribe name Ochetomyrmecini (nov. syn.) becomes meaningless, and the genera Wasmannia and Blepharidatta are without a tribal name. I refrain from coining a new name for these two groups, because it seems that the whole classification, generic and tribal, of the lower Myrmicinae needs urgent overhauling."

Our study of larvae supports the tribal separation of Wasmannia and Ochetomyrmex and the transfer of the latter to tribe Solenopsidini, but we are not about to join Kempf's refrain and put Blepharidatta and Wasmannia in the same tribe. We prefer to leave Wasmannia in Tribal Limbo, pending the Great Overhaul.

**TRIBES**

Before beginning the study of the larvae, we decided it would be advisable to get acquainted with the workers of the tribes involved. Characterizations of tribes are generally unsatisfactory, so we supported them by reality, namely examination of actual workers in our reference collection.

In his key (1922:655) Wheeler characterized the Dacetini thus: Clypeus prolonged between frontal carinae; head cordate, strongly narrowed in front, its dorsal corners not spinose. Antennae 4- to 12-jointed, the last joint being very much longer than the preceding; mandibles porrect.

We characterize the Proattini thus: Monotypic. Antennae 12-segmented, not clubbed. Head with an antennal scrobe, each dorsal corner produced into three tubercles. Dorsum with 10 spines on thorax and three on epinotum. Male with 13-segmented antennae and well developed pterostigma. Do not cultivate fungi. Old World (Malaysia).

We characterize Wasmannia thus: Monomorphic. Antennae 11-segmented, with 3-segmented club, with terminal segment decidedly predominant. Antennal scrobe shallow. Meso-epinotal suture impressed; surface of thorax roughened with sculpture only. Epinotum armed with spines. Hairs long and sparse.

We characterize the adults of tribe Attini as follows: Workers and female: antennae 11-segmented, without a club. Pterostigma narrow or absent. Worker: monomorphic or polymorphic. Head with antennal scrobe. Thoracic dorsum with spines, teeth, bosses or prominent ridges. Male: Antennae usually 13-segmented. Cultivate fungi. New World.

We establish a new tribe for Blepharidatta with the name Blepharidattini based on worker characters: Monotypic. Monomorphic. Head with deep antennal scrobes extending to dorsal corners. Each dorsal corner of head with an angulate tubercle. Eyes notably protuberant. Antennae 11-segmented, with a 2-segmented club. Mandibles triangular and 4-toothed, directed ventrally. Thoracic dorsum without impessed sutures; surface roughened with sculpture only. Epinotal spines long. Petiole long and with only a small node or none. Postpetiole small. Hairs sparse, long and bristle-like.

It is difficult to compare a single genus with 11 genera of Attini, but it is possible to compare Blepharidatta with the most primitive attine genus, Cyphomyrmex. In order to facilitate a multiple comparison we prepared a table (see Table 1) of 18 characters of Blepharidatta, Cyphomyrmex and Wasmannia. Characters 1–5 are shared by all three genera; 6 and 7 are shared by Wasmannia and Blepharidatta; 8–10 are shared by Blepharidatta and Cyphomyrmex; 11 and 12 are shared by Wasmannia and Cyphomyrmex; while 13–18 are different in each genus.
Table 1. Comparison of 18 characters of workers of Blepharidatta, Cyphomyrmex and Wasmannia.

<table>
<thead>
<tr>
<th>Character</th>
<th>Wasmannia</th>
<th>Blepharidatta</th>
<th>Cyphomyrmex</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Castes</td>
<td>monomorphic</td>
<td>monomorphic</td>
<td>monomorphic</td>
</tr>
<tr>
<td>2. Mandible</td>
<td>triangular</td>
<td>triangular</td>
<td>triangular</td>
</tr>
<tr>
<td>3. Mandibular teeth</td>
<td>4 subequal</td>
<td>4 subequal</td>
<td>4 subequal</td>
</tr>
<tr>
<td>4. Eyes</td>
<td>moderately large and protruding</td>
<td>moderately large and protruding</td>
<td>moderately large and protruding</td>
</tr>
<tr>
<td>5. Antennal segments</td>
<td>11</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>6. Epinotal spines</td>
<td>present</td>
<td>present</td>
<td>none</td>
</tr>
<tr>
<td>7. Humeral angles</td>
<td>dentiform</td>
<td>dentiform</td>
<td>rounded</td>
</tr>
<tr>
<td>8. Frontal carinae</td>
<td>not lobulate below</td>
<td>lobulate below</td>
<td>lobulate below</td>
</tr>
<tr>
<td>9. Scrobe</td>
<td>shallow</td>
<td>deep</td>
<td>deep</td>
</tr>
<tr>
<td>10. Sting</td>
<td>well developed</td>
<td>vestigial</td>
<td>vestigial</td>
</tr>
<tr>
<td>11. Dorsal corners of head</td>
<td>rounded</td>
<td>angularly tuberculate</td>
<td>rounded</td>
</tr>
<tr>
<td>12. Mesoeinotal suture</td>
<td>present</td>
<td>absent</td>
<td>present</td>
</tr>
<tr>
<td>13. Antennal club</td>
<td>3-segmented</td>
<td>2-segmented</td>
<td>no club</td>
</tr>
<tr>
<td>14. Petiole</td>
<td>large; node high, narrow</td>
<td>long; low node present or absent</td>
<td>short, low, wide</td>
</tr>
<tr>
<td>15. Postpetiole</td>
<td>normal</td>
<td>small</td>
<td>small</td>
</tr>
<tr>
<td>16. Gaster</td>
<td>1st somite long, others small</td>
<td>small</td>
<td>small, 1st somite covers others</td>
</tr>
<tr>
<td>17. Body hairs</td>
<td>long, erect, sparse</td>
<td>long, bristly, erect on dorsum</td>
<td>appressed, rather scale-like</td>
</tr>
<tr>
<td>18. Thoracic sculpture</td>
<td>rugae only</td>
<td>rugae and punctures</td>
<td>bosses or carinae</td>
</tr>
</tbody>
</table>

To us, this means that Blepharidatta should be placed in a monotypic tribe, if only adult anatomy is considered. However, taxonomists now maintain that a species should be defined by all its characters.

LARVAE

In September 1989 we received from Dr. J. Lattke in Caracas, Venezuela a most welcome gift of 2 workers and 12 larvae of B. brasiliensis. These not only enabled us to examine a very rare ant species but to describe a larva new to us and perhaps to shed some light on the tribal problem.

*Blepharidatta brasiliensis* Wheeler

Fig. 1

Length (through spiracles) 1.5–2 mm. Profile atetic; segmentation indistinct; spiracles on T2 0.01 mm in diameter, decreasing gradually to 0.008 mm on AI, and to 0.006 mm on AVIII. Integument minutely spinulose, the spinules more numerous
and in short rows on venter of anterior somites and dorsum of posterior somites. Body hairs sparse, 0.025–0.125 mm long, slightly curved, tip sometimes flexuous. Cranium suboctagonal, widest dorsally; integument of dorsal portion spinulose, the spinules minute and in short to long rows. Antennae large, at midlength of cranium, each with 3 sensilla, each of which bears a spinule. Head hairs few (ca. 22), very short (0.003–0.008 mm long), except for 2 near midline (ca. 0.06 mm long). Labrum crescentic, wide and very short, anterior surface with 2 sensilla; ventral surface with 6 sensilla; posterior surface with numerous rows of minute spinules. Mandible small, narrowly subtriangular; apex moderately sclerotized, sharp-pointed and without medial or superficial teeth. Maxilla with rounded apex (adnate?); palp a short frustum with 5 (4 apical and 1 lateral) sensilla; galea tall digitiform with 2 apical sensilla. Labium feebly bilobed, with short arcuate rows of minute spinules; palp an irregular projection with 5 sensilla; an isolated sensillum between each palp and the opening of the sericertes; the latter a transverse slit. Hypopharynx spinulose, the spinules minute and in arcuate rows, which are in subtransverse rows. (Material studied: 12 larvae from Alto Rio Mabaca, Amazonas, Venezuela, 2°1'N, 65°7'W, alt. 200 m, courtesy of J. Lattke.)

We have characterized the larvae of Attini (1976:60 and 1986:691) as follows: Profile attoid. Body almost naked, the few hairs minute to short and largely restricted to the ventral surface. Mandibles attoid, surface covered with coarse spinules, which are directed apically.

The larvae of several genera do not conform (see G. C. Wheeler, 1948), but they are kept in the Attini because their adults culture fungi. *Myrmicocrypta* has none of the distinctive larval characters, but it has adult characters. *Apterostigma* and *Sericomymox* have non-attoid mandibles, but adults and all other larval characters conform.

We characterized the larva of *Proatta* in 1985, but we now characterize it thus: Profile pheidoloid. Mandibles amblyponoid, without spinules. Body hairs sparse, generally distributed, short, with tip curved or bifid.

We characterize the larva of *Wasmannia* thus: Profile pheidoloid. Body hairs sparse; short and denticulate and long unbranched. Mandibles pristomyrmecoid.

We characterize the larva of Blepharidattini thus: Profile attoid. Mandibles am-
Figs. 2–4. Comparison of larvae of Cyphomyrmex, Blepharidatta and Wasmannia. 2. Cyphomyrmex. a, Profile; b, body hair; c, left mandible in anterior view. 3. Blepharidatta. a, Profile; b, body hair; c, left mandible in anterior view. 4. Wasmannia. a, Profile; b, 2 types of body hairs; c, left mandible in anterior view.

blyoponoid, with two acute teeth, one apical and one subapical. Body hairs sparse and moderately long; generally distributed; unbranched, smooth and slightly curved.

In Figures 2–4 we compare the larva of a primitive attine (Cyphomyrmex), with that of Wasmannia, and with that of Blepharidatta.

CONCLUSION

Our overall conclusion is that the tribe Attini comprises the 11 fungus-growing genera. The genus Proatta remains in the monotypic tribe Proattini. The tribe Ochetomyrmecini is dissolved and the genus Blepharidatta is transferred to a new monotypic tribe Blepharidattini.

LITERATURE CITED


Received 20 November 1989; accepted 22 May 1990.