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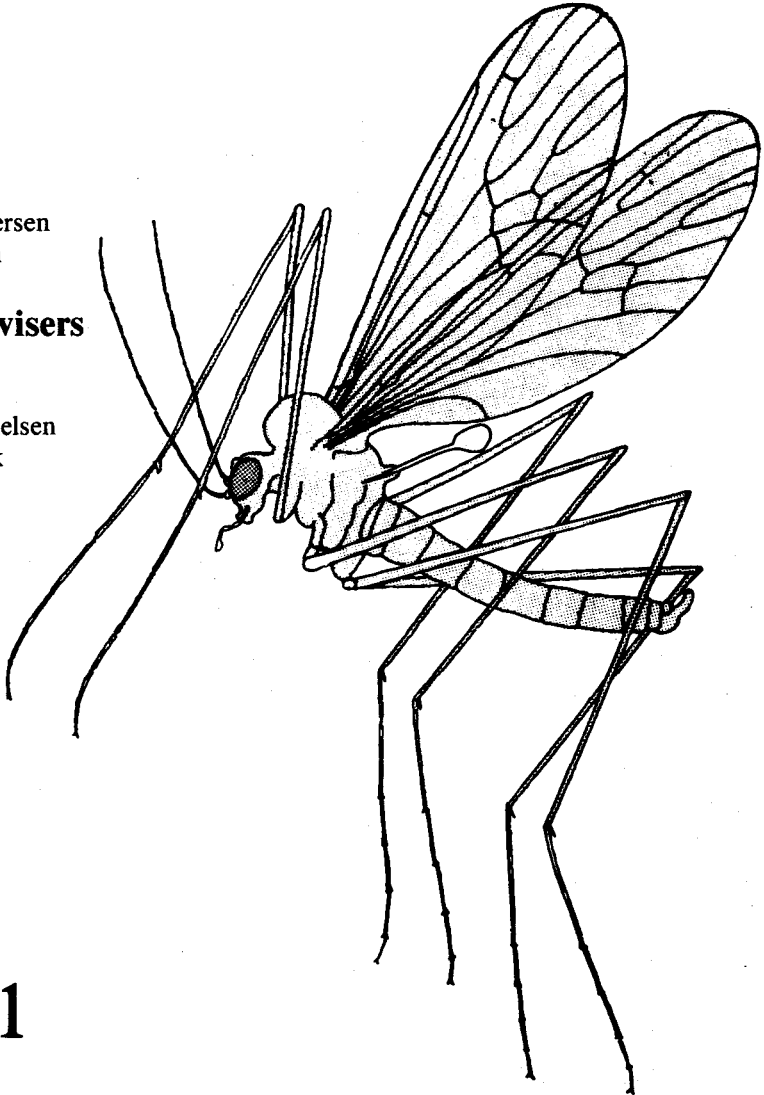
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A new genus of myrmicine ants (Hymenoptera: Formicidae) from Venezuela

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Based upon a single alate female the ant genus *Bariamyрма* from southern Venezuela is described as new. Recognized as a member of the lower Myrmicinae, its closest affinities with other myrmicines appear to be in the group of genera related to *Lordomyrma*.

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The Cerro Neblina expedition brought a considerable number of researchers into a relatively inaccessible part of the world in southern Venezuela. The results of the collections made continue to be published and as a part of this flux of information the description of an interesting ant specimen representing an undescribed genus taken with a flight intercept trap is presented.

Bariamyрма gen. n.

Type-species: *Bariamyрма hispidula* sp. n.

Diagnosis of queen

Ants belonging to the subfamily Myrmicinae.

1. Mandibles triangular, with a series of 9 teeth on the masticatory margin, the apical tooth being the largest.
2. Palp formula 3,2 (*in situ* count).
3. Anterior clypeal border convex, medially produced into a blunt point and covering basal mandibular margins.
4. Clypeus posteriorly narrowly inserted between the widely separated frontal lobes.
5. Clypeus with longitudinal rugae, not distinctly bicarinate but with a prominent anteromedian carina.
6. Lateral portions of clypeus not posteriorly raised into a shield-wall in front of the antennal fossae.
7. Anterior margin of clypeus with hairs but without a single prominent median seta.
8. Frontal carinae extend posteriorly to slightly behind the eyes; almost as long as the scapes and posteriorly diverging one from another.
9. No evident antennal scrobe present.
10. Antennae with 12 segments, funiculus clavate with a vague 3-merous club; each funicular segment sharply constricted one from another.
11. Frontal triangle well defined, smooth and shining.
12. Propodeal spiracle situated slightly above mid-height of sclerite, close to junction of metapleuron and anterad of teeth, well back from the edge of the declivitous face.
13. Declivitous propodeal face with a pair of sharply pointed triangular lateral teeth joined by carinae to the well developed, bluntly pointed inferior propodeal plates.
14. Posteroventral alitrunk with a median convex emargination, not open and extending anterad of hind coxae.
15. Metasternal process absent.
16. Strongly pedunculate petiole, node conical with a bluntly pointed apex, petiolar ventrum with a low longitudinal carina, no prominent process.
17. Petiolar spiracle is at mid-peduncular length.
18. Postpetiolar node dome-shaped as seen laterally, and campaniform dorsally; prominent transverse subpostpetiolar process.
19. Sting weakly sclerotized and ending in a prominent lobular flange.
20. Apex of meso- and metatibiae each with a single simple spur.
21. Strongly sculptured cuticle except for gaster.

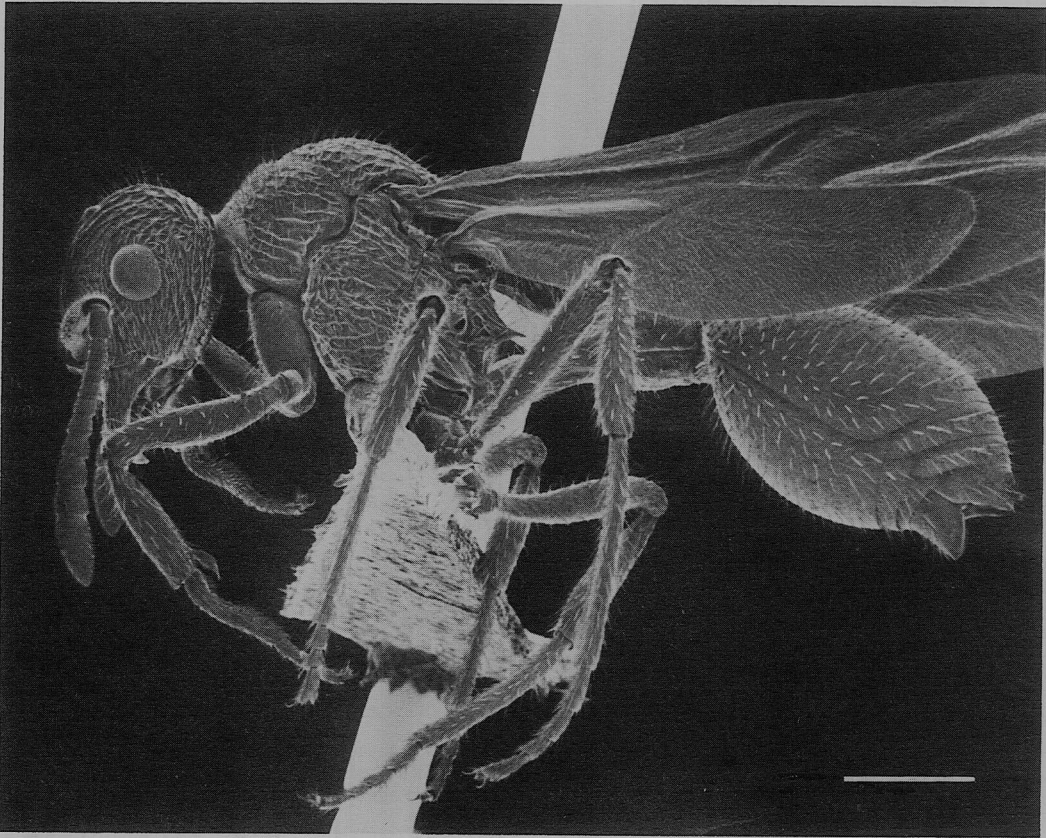


Fig. 1. *Bariamyрма hispidula* gen. n., sp. n., alate queen. Scale = 0.8 mm.

Features of the anterior wing venation include Mf1 branching out quite distad of cu-a, the absence of 1r and r-m, the continuity of 2r and Rsf2-3. One cubital cell is present and the radial cell is closed. The posterior wing has only one cell, neither Rs, M, nor CuA extends after r-m, and M-Cu does not reach the wing base. A thickened cu-a reaches toward but does not touch the brief and thick anal vein. Wings with abundant decumbent pilosity, borders of posterior wings with a fringe of short hairs, but such a fringe lacking about the anterior wings.

Bariamyрма hispidula sp. n.

(Figs. 1-4)

Type material. - Holotype ♀, Venezuela: Amazonas, Cerro de la Neblina Basecamp, 0°50'N 66°10'W, 140 m,

flight intercept pan trap in rainforest, 21-28.II.1985, P. J. Spangler. In the Instituto de Zoología Agrícola collection, Universidad Central de Venezuela, Maracay, Venezuela.

Description

Holotype female (Fig. 1). - Dimensions: HL 1.34, HW (excluding eyes) 1.17, ED 0.33, ML (straight line distance along external margin from insertion to anteriormost margin) 0.73, SL 0.95, WL 2.03 mm, CI 0.87, SI 0.81, MI 0.63.

Head (Fig. 2) in full face view with posterior margin broadly convex, sides more or less parallel. Clypeus with transverse rugae. Eyes large and prominent, situated at cephalic midlength, 3 well developed ocelli present at vertex. Dorsolateral mandibular surface rugulose, but smooth and shining about the chewing and basal margins. Dorsal

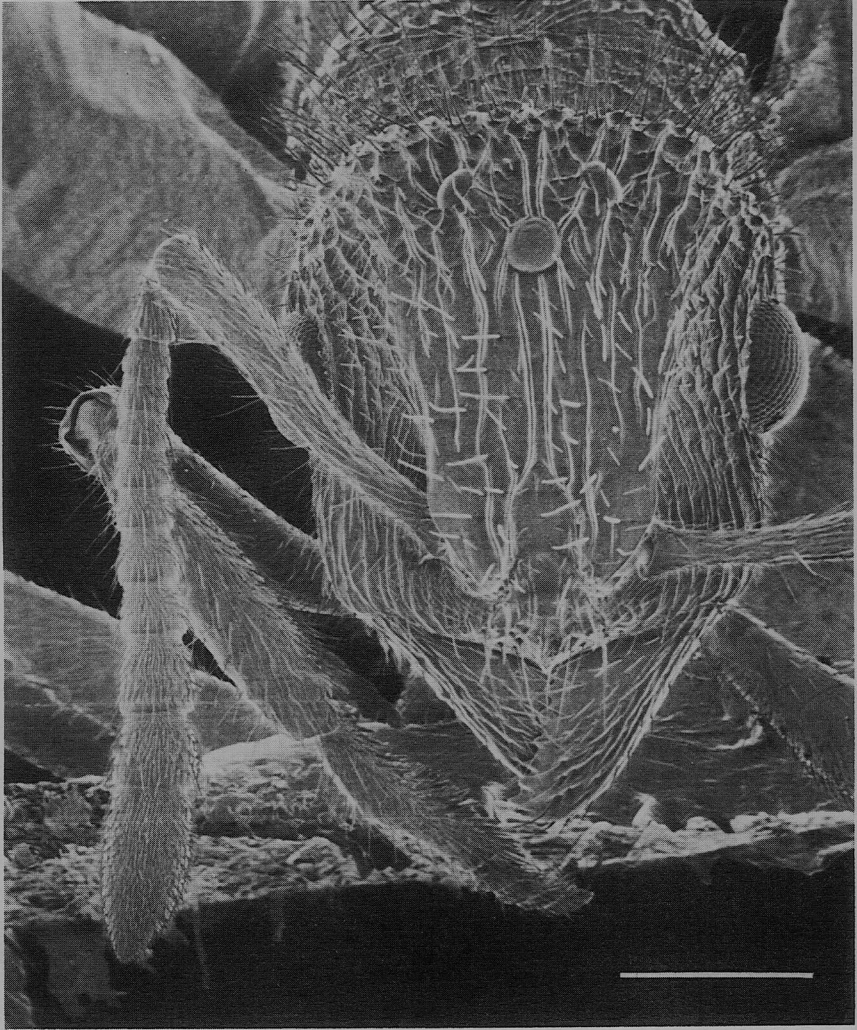
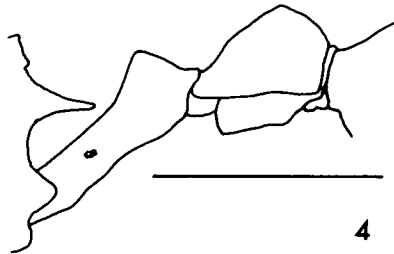
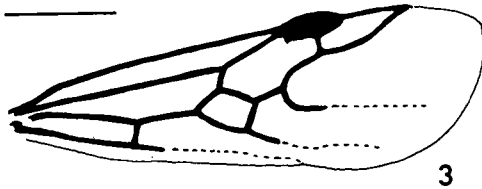


Fig. 2. *Bariamyrma hispidula* gen. n., sp. n., alate queen: head, frontal view. Scale = 0.4 mm.

cephalic sculpture between frontal carinae longitudinally porcate. Frontal lobes anteriorly thin and lamellar, partially raised and leaving the basal condyles partially exposed in frontal view. Basal antennal sclerite partially covering part of the basal condyle, condylar constriction sharp, forming an obtuse angle with an oblique basal flat surface of the scape. Antennal fossae deep, laterally bordered by more or less parallel rugulae that become more irregular between the eye and frontal carina and posterad. Flexor surface of scape with a broad sul-

cus, scape slightly bent basally, expanding apicad. Scape with longitudinal costulae; funicular segments colliculate. Cephalic ventrum with a median carina, and medially smooth and shining.

Pronotal collar with imbricate microsculpture. Frontal pronotal surface transverse porcate, anterolaterally with an excavate area of smooth sculpture behind the lower occipital corners of the head. Pronotum with a lateromedian depression and with a convex posterior lobe; sculpture porcate-rugose. Humeri bluntly angulate in dorsal view. Mesono-



Figs 3-4. *Bariamyрма hispidula* gen. n., sp. n., alate queen: (3) venation of anterior wing; (4) petiole and post-petiole, lateral view. Scales = 1.0 mm.

tum longitudinally rugose. Anepisternum with transverse rugae, divided from katepisternum by a broad and deep sulcus. Katepisternum with transverse rugae but more sharply defined than in the anepisternum, with broader and shallower areas between them. Carinae on metapleuron and lateral propodeal face as in anepisternum, slightly more effaced. Propodeal spiracle large and rounded, facing obliquely caudad. Suture before scutellum broad and with two median concave depressions. Scutellum roughly rugose, with an anterior shelf and a slight median depression deviding the sclerite into two low lateral bulges. Declivitous propodeal face transversely porcate above teeth, smooth and shining between and below them. Inferolateral propodeal margin with very broad smooth and shining areas between sparse carinae; opening of metapleural gland contained in a thin-walled cup like structure. Low rugosities on petiole and post-petiole (Fig. 4).

First gastric segment larger than other segments, mostly smooth and shining except for a short series of longitudinal carinae next to the postpetiolar junction. Gaster in lateral view ventrally convex and dorsally broadly convex. Tibiae and femora with longitudinal low rugosity; claws simple. Most of body plus extremities covered with abundant stiff,

erect to suberect, bristle-like hairs. Decumbent hairs on mandibles, scapes, funiculus. Abundant decumbent pilosity on pronotum and legs; also on anterior and anterolateral procoxal faces, mesocoxae and anterior mesocoxal face. Sparse decumbent pilosity on gaster. Body blackish brown, legs slightly lighter, wings (Fig. 3) brown.

Worker, male and larvae unknown.

Ecology. - Practically unknown. The fact that the specimen was taken from a flight intercept trap on the ground would make it likely that this is a ground nesting species and not a canopy dwelling ant.

Discussion

The following characters from the generic diagnosis can be considered as plesiomorphic since they are common to the *Myrmica* group of genera, though to be close to the ancestral myrmicine stock: 1, 5, 6, 7, 9, 10, 11, 13, 18, 21. A median clypeal carina can be found in tetramoriines, myrmicines and throughout many ectatommines, the group of ponerines thought to be direct ancestors of Myrmicinae. The carinae on the clypeus are few and it is not hard to envisage a distinctly bicarinate state from the present condition. The position of the propodeal spiracle in *Tetramorium* and most myrmicine genus-group members is low on the side and towards the propodeal declivity, yet this is probably a derived state. The plesiomorphic state of situation of the propodeal spiracles is considered to be high and tending to midlength, or a little anterad of midlength (Bolton *pers. comm.*), a position quite similar to that in *Bariamyрма*.

The following can be considered apomorphic through reduction:

2. A higher palp formula count of 4,3 is predominant in myrmicines and tetramoriines, though the latter present occasional reductions of 3,2.

4. A broader clypeus such as that found in *Myrmica* Latreille, *Tetramorium* Mayr, *Pheidole* Westwood, etc. would be the primitive state.

20. Simple spurs, or their absence, is the apomorphic condition derived from pectinate spurs on the meso- and metatibiae, which is predominant in the *Myrmica* group.

The following are considered apomorphic through development:

3. The plesiomorphic state would be a straight to evenly shallowly convex anteromedian border with no prominences nor ornaments and not covering the basal mandibular margins, as is predominant in the *Myrmica* group

and tetramoriines, with the exception of *Rhoptromyrmex* Mayr. There the clypeus is convex and covers the basal mandibular margins but it is not pronounced into a point (Bolton 1976: 295).

8. Frontal carinae are absent in the *Myrmica* group but developed in the tetramoriines. Other lower myrmicines with well defined frontal carinae are genera close to *Lordomyrma* Emery, yet these groups have gone on to develop scrobes, a character not evident in *Bariamyрма*.

14, 15. The predominant and apparently primitive state in the *Myrmica* and *Tetramorium* groups is a long and narrow V-shaped open cleft that reaches between the metacoxae and slightly beyond, and the presence of a metasternal process (Bolton 1988: 268).

16. A subquadrate node is probably plesiomorphic in myrmicines. The low conical node is characteristic of most lower and higher pheidolines and can be encountered in *Stenamamma* Westwood, *Rogeria* Emery, *Messor* Forel, *Pheidole* and others, including the *Lordomyrma* group of genera.

19. A strongly sclerotized and relatively slender sting with no flange development is considered plesiomorphic and is the condition in the *Myrmica* group. The tetramoriines present a similar flange as in *Bariamyрма* but it is preapical and the sting has not totally lost its piercing function (Kugler 1978: 499). The sting of *Bariamyрма* suggests that it has lost the piercing capacity altogether and instead functions exclusively by airing some defensive secretion.

Bolton (1987: 271) points out consistency of the position of the petiolar spiracle within narrow limits within genus groups, but the polarity of the states is difficult to assess due to the ways possible to reach that state.

The anterior wings have a closed radial cell, a primitive condition found in the *Myrmica* group, as opposed to an open cell, to be found in the tetramoriines and other groups. The loss of 1 cubital cell and of cross vein r-m is considered the derived state from 2 cells and the presence of the cross vein, as is the case with myrmicines, but lost in tetramoriines and other ants. The steps toward the loss of r-m have been documented by Bolton (1982: 339). In *Bariamyрма* Rs-M branches before r-2 but in *Tetramorium* it diverges at r-2 or apicad (Bolton 1976: 372). The significance of hairs on the wings is unknown, though Kusnezov (1962: 378) noted their presence as variable amongst groups of ants.

The placement of this genus of apparently lower Myrmicinae into established tribes or genus groups at this moment is not clear. On account of its apomorphies it is obviously not a member of the *Myrmica* nor *Tetramorium* genera groups. If we consider the *Pheidologeton* group and the characters listed by Ettershank (1966: 115) as well as those pointed out by Bolton (1987: 265) there seems to be

no affinity. The lack of a clearly defined antennal club and presence of well developed frontal carinae in *Bariamyрма* plead against such a grouping. The only other universal characters within pheidologetines are the lack of a prominent median clypeal seta and a closed radial cell of the fore wing, but both are plesiomorphic states and of limited phylogenetic value. To place it in the Pheidolini or Myrmecini, polyphyletic assemblages of genera, would be of no heuristic value. The specimen does share a number of characters with *Lordomyrma* such as the mandibular structure, convex clypeus, frontal lobes, frontal carinae, antennae, and propodeal spiracles set well forward from the margin of the declivity. Yet in *Lordomyrma* the clypeus is clearly bicarinate, and distinct, albeit flat, antennal scrobes are formed. In this genus the petiolar peduncle tends to be shorter, the humeral angles somewhat sharper, tibial spurs are wanting, the sting presents no flange and the propodeal spiracle is below the base of the propodeal spine. Wheeler (1919: 105) illustrates the forewing of a male *Lordomyrma* and it is quite similar to *Bariamyрма* except for the anal vein, which does not extend beyond cu-a. Wheeler also notes the presence of hairy wings. A survey of the other genera related to *Lordomyrma*, such as *Cyphoidris* Weber, *Lachnomyrmex* Wheeler, *Dacatinops* Brown & Wilson, and *Indomyrma* Brown reveals distinct antennal scrobes and clubs, the lack of apical spurs on the meso- and metatibiae, and a raised, usually bicarinate, median clypeus. The sting in *Lachnomyrmex* tends to be flattened, and in *Cyphoidris* terminates in a narrow spatulate appendage. *Lachnomyrmex* has its propodeal spiracles set well back from the declivitous face margin, but *Cyphoidris* and *Dacatinops* have them positioned quite posterad. Accepting *Bariamyрма* as a member of this assortment of genera, and even though it has several apomorphies in relation to them, such as the reduced palpal segmentation and form of the sting, on the whole it seems that *Bariamyрма* is a somewhat primitive member of the group. Additional *Bariamyрма* material such as workers or larvae are needed, plus a detailed analysis of the *Lordomyrma* genus-group, before relationships can be firmly established.

Etymology. - The generic name *Baria* is the name of a river next to the Cerro Neblina expedition basecamp. The species name is derived from the Latin diminutive for bristly, *hispidula*.

Acknowledgments

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