Adelomyrmecini new tribe and *Cryptomyrmex* new genus of myrmicine ants (Hymenoptera: Formicidae)

by

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ABSTRACT.

Descriptions of **Adelomyrmecini new tribe** and *Cryptomyrmex* **new genus** are made. A key to genera (*Adelomyrmex*, *Baracidris* and *Cryptomyrmex*) is offered, as well as a key for the two known species of *Cryptomyrmex*, *C. longinodus* (Fernández & Brandão) **comb. n.** and *C. boltoni* (Fernández) **comb. n.**

Key Words: Adelomyrmecini new tribe, *Cryptomyrmex* new genus, Key to Genera.

INTRODUCTION

Bolton's (2003) recent synopsis of the Formicidae includes a new arrangement for Myrmicinae (excluding Agroecomyrmecini) in several tribal groups, defining some new tribes and redefining others. In his solenopsidine tribe group, Bolton (2003) includes the tribes **Stenammini** and **Solenopsidini** (new sense), with *Adelomyrmex* plus *Baracidris* as *incertae sedis*.

These genera form a monophyletic clade, described here as a new tribe, that includes a third genus, also new. The taxonomy of species was recently revised (Fernández 2003b) and the phylogeny of the group is currently under study (Fernández, in preparation). The main purpose of this paper is to provide a tribal name and generic name for the forthcoming catalogs of World and Neotropical Formicidae. The phylogeny and biogeography of genera and species of the tribe will be published elsewhere.

The ants are deposited in the following collections: BMNH, The Natural History Museum, London; UNCB, Instituto de Ciencias Naturales, Universidad Nacional de Colombia and the MZSP, Museo de Zoología, Universidad de São Paulo, São Paulo.

ADELOMYRMECINI, new tribe

Type genus: *Adelomyrmex*.

Diagnosis. With characters of solenopsidine tribe group (Bolton,

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2003:57). Mandibles with four to seven teeth in the masticatory border (Fig. 4). Basal margin of mandibles simple to armed. Internal side of mandibles with a row of 2 - 3 to 5 - 6 hairs modified as lamelliform setae. Clypeus with median longitudinal plate, ridge or strip raised (Fig. 3). A median clypeal seta usually present. Palpal formula 2,2 or less. Antennae 12 segmented, with club 2-segmented. Propodeum angulated or armed with teeth. U-shaped sulcus in the basalmost portion of the first tergum. Monomorphic.

Genus-rank taxa of Adelomyrmecini: *Adelomyrmex*, *Baracidris* and *Cryptomyrmex* gen. n.

Comments. Fernández (2003b) presents the justification for considering the *Adelomyrmex* genus-group monophyletic, the most important reason being the possession of a series of modified hairs on the internal side of the masticatory border of the mandibles (Fig, 1). In other ants, these hairs are simple and normal, whereas in all the species examined from this group these hairs are modified as spatuliform, translucent lamellae (Fig. 1). No other ants are known to have this type of hair; Fernández (2003a) described a Malaysian genus with modified hairs,

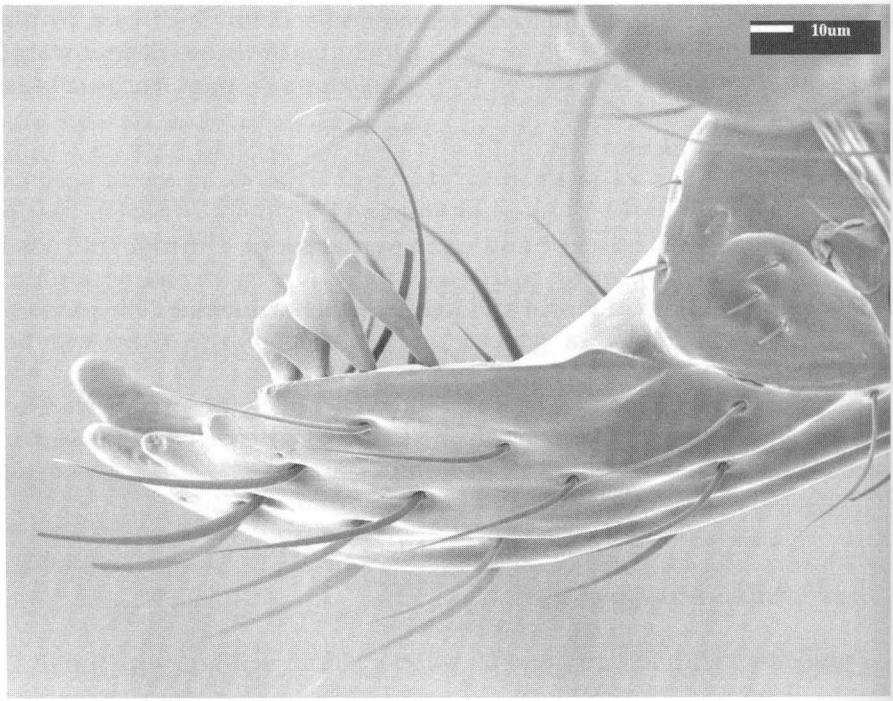

Fig. 1. Ventral view of the mandible of *Adelomyrmex robustus* (worker, Mexico) showing the modified setae on the subapical margin.

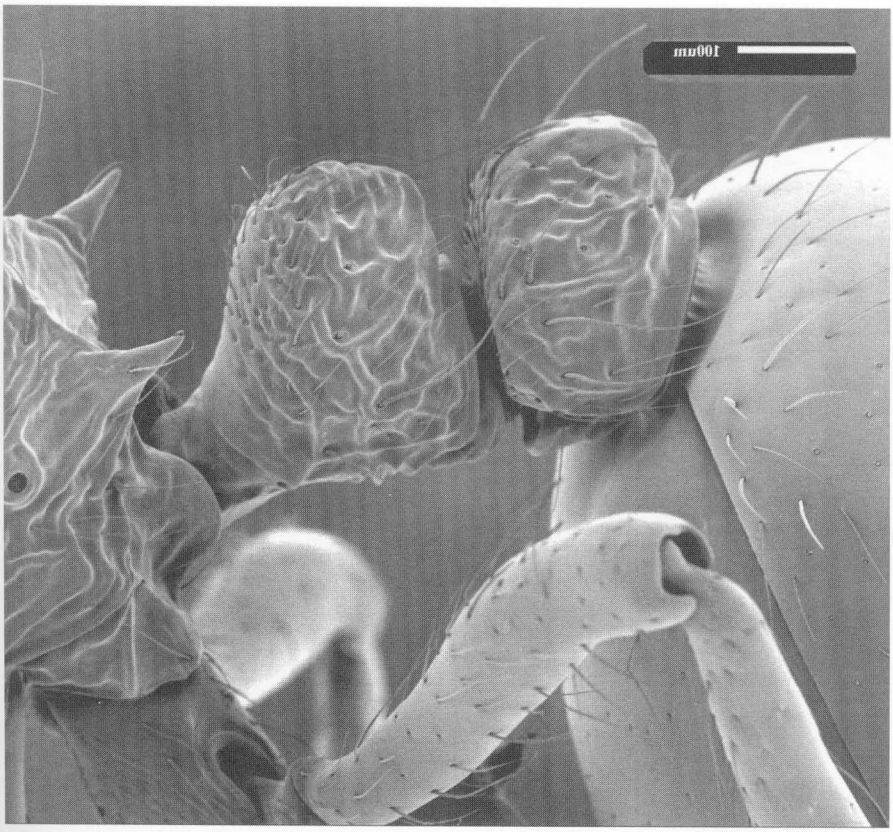

Fig. 2. Lateral view of the petiole, postpetiole, and anterior part of the gaster of *A. robustus* (worker, Mexico).

but these are different and the ant's other characteristics do not allow it to be included within the concept of the adelomyrmecines.

Bolton (1981, 1994) had previously suggested that *Baracidris* and *Adelomyrmex* are neighbor genera. Fernández (2003b) placed both genera as the sole constituents of the *Adelomyrmex* group. Notwithstanding, Bolton (personal communication) and Brandão (personal communication) have independently considered that the species referred to as *A. longinodus* and *A. boltoni* in Fernández (2003b) could constitute a separate genus [called, respectively "unnamed" and "new genus"]. I concur that *A. longinodus* and *A. boltoni* (*sensu* Fernández, 2003b) should comprise a new genus and describe it below.

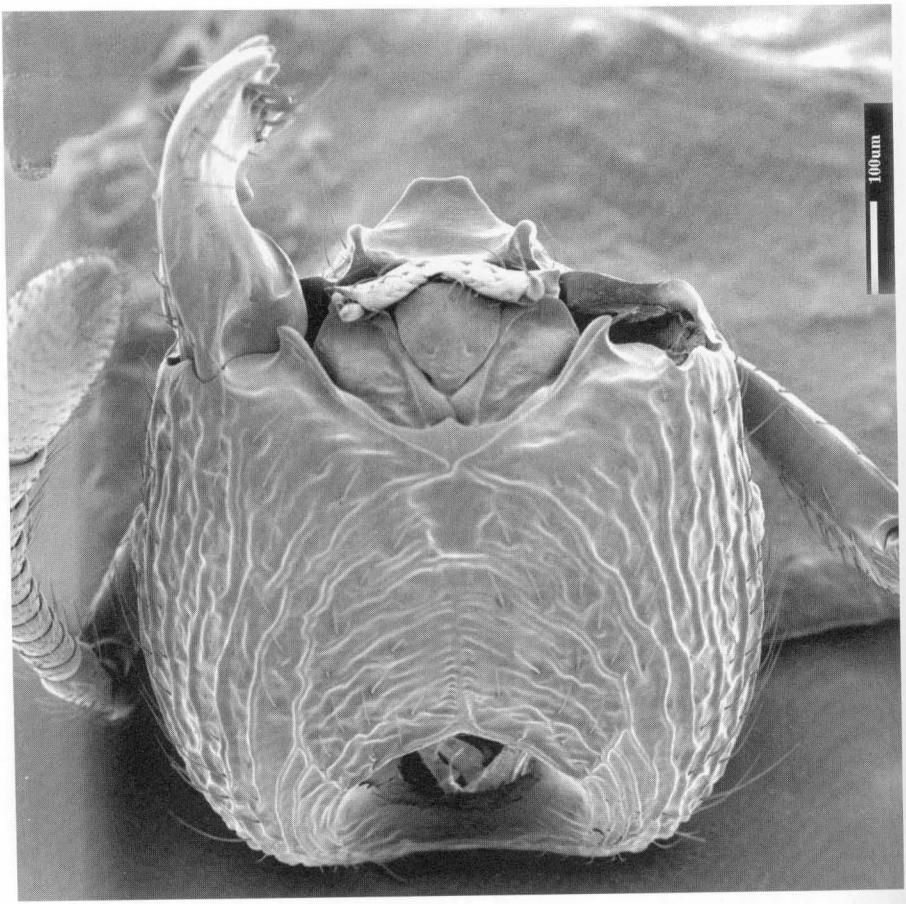

Fig 3. Ventral view of the head of *A. robustus* (worker, Mexico) showong the small hypostomal tooth. See also the lateral clypeal teeth.

Cryptomyrmex, new genus

(Figs. 5-7)

Type species: *Adelomyrmex longinodus* Fernández and Brandão 2003 in Fernández 2003b.

Generic diagnosis (worker). Head with convex posterior and evenly rounded corners. Hypostomal bridge strong and evenly developed; very much distinct from head venter. Hypostomal teeth absent. Sides of head slightly concave before the eyes, slightly convex past eyes. Mandibles with 4 teeth decreasing in size from the apical teeth, the antepenultime (subbasal) smallest. Mandibles with distinct tooth in

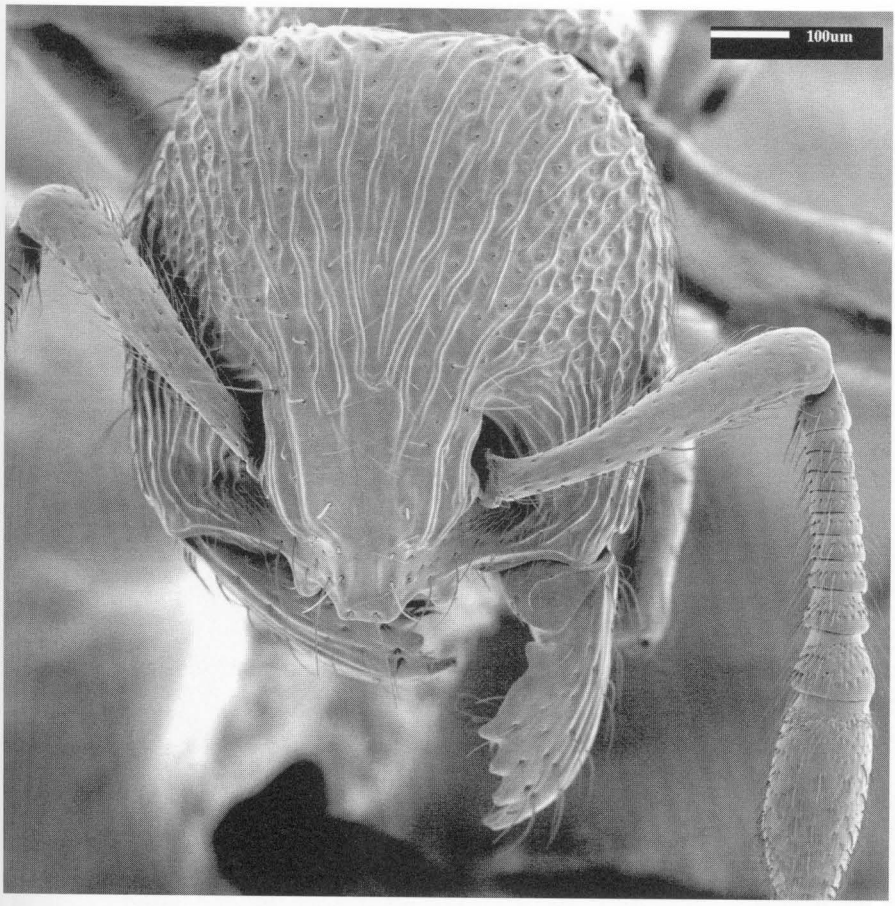

Fig. 4. Dorsal oblique view of the clypeal area and mandibles of *A. robustus* (worker, Mexico) showing the clypeal setae, lateral clypeal teeth, and the teeth on the basal margin of the mandibles.

their basal margin, at midlength, not followed by a notch. Maxillary palpomere subcylindrical and the labial palps geniculate. Eyes lenses absent, although the pigments are clearly visible under the reflective light, but not under the SEM picture, or poorly developed (Fig. 7). Clypeus short, elevated in the middle as a narrow stripe, pointed and fused with frontal carinae. Anterior margin of the clypeus without teeth, although with feebly projections instead. Dorsal view of thorax as in figure 7. Propodeum spiracle relatively large, its orifice circular and situated just above the midlenght of the sclerite; propodeum dorsum straight, meeting declivity in sharp diverging teeth, gently curved inwards when seen from above; declivity smooth, the metapleural lobes not jointed over the foramen. Opening of the metapleural gland

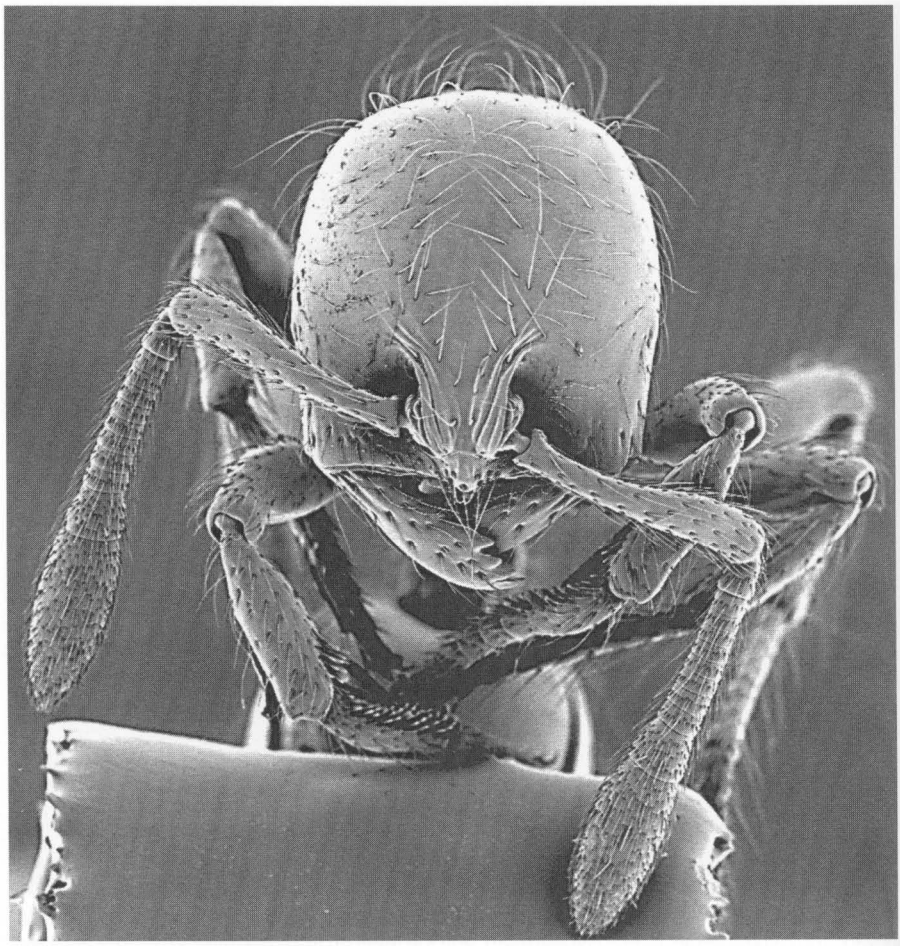

Fig. 5. *Cryptomyrmex boltoni*. Head in dorsal view (worker, Brazil).

indistinct. Petiole with a short anterior peduncle, lacking an anteroventral process; petiolar node subquadrate, dorsally broadly convex in profile till it approaches the postpetiole where it ends abruptly in a right angle. Postpetiole low and small, gently convex in profile, in dorsal view very broadly attached to the gaster. Sting large and strongly sclerotized, disproportionately powerful.

Queen: Larger, but not very much, than conspecific worker. Compound eyes with several facets over the largest diameter. Otherwise description as worker.

Male: Unknown.

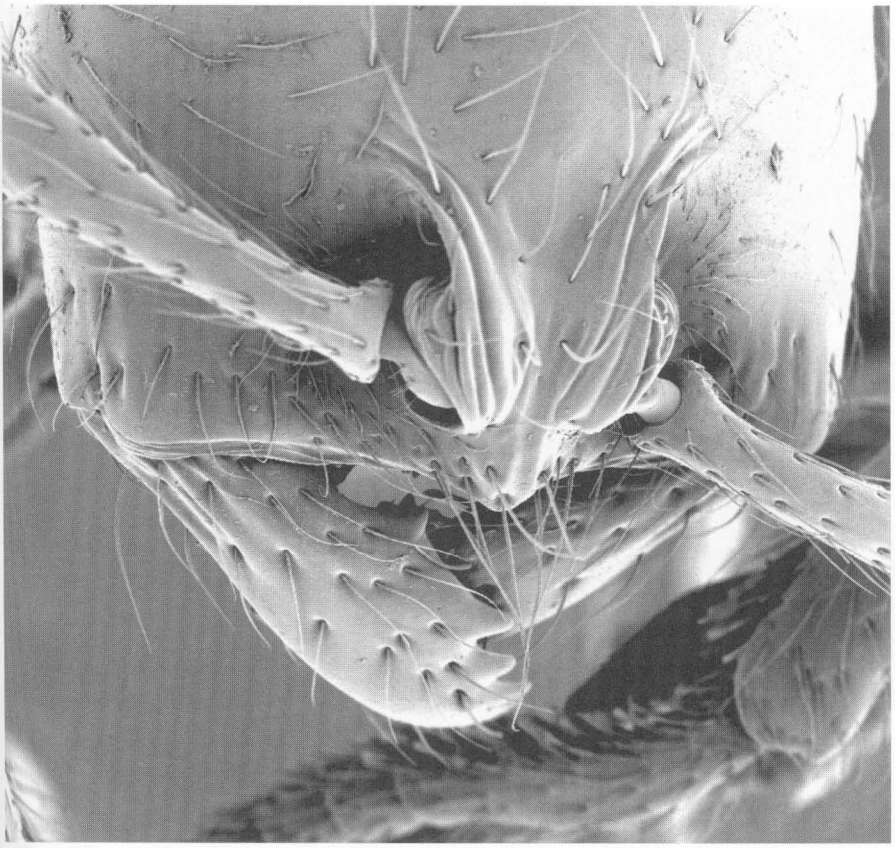

Fig. 6. *C. boltoni.* Head in dorsal oblique view (worker, Brazil).

Comments. This genus is created on the basis of two species from Brazil and Paraguay. Among its distinctive characteristics are mandibles with four teeth on the masticatory margin, a low tooth in the basal margin, and petiole with a long, low node. The tooth of the basal margin is lower that in *Adelomyrmex*, and is not accompanied by a notch as in that genus. An important characteristic is the head profile in frontal view, in which the anterior half (between the mandibular base and more or less the level of the eye) is slightly concave, and the posterior half is slightly convex. No other species of the group shares this head profile; this helps separate *Cryptomyrmex* as a distinct genus. The potential of this character still needs examination in the context of the myrmicine ants. Petiole shape also separates *Cryptomyrmex* from the other species of the tribe; this may be plesiomorphic, since it is present in *Hylomyrma*. The eyes are normally visible stereoscopically,

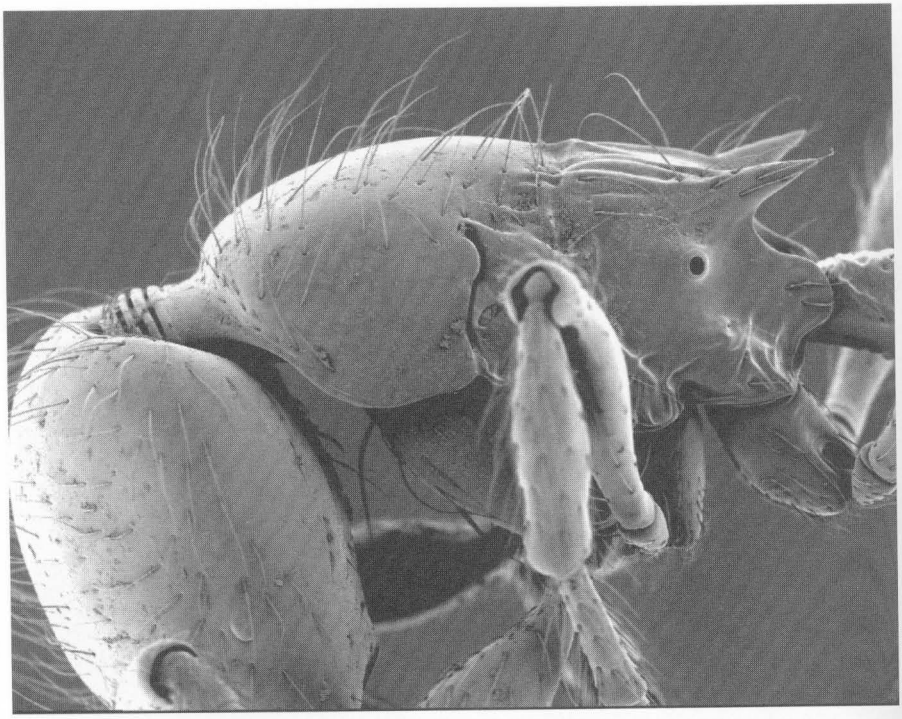

Fig. 7. Lateral view of the head and mesosoma of *C. boltoni* (worker, Brazil). See that the eye is reduced to a bulging area.

but not in SEM images, suggesting that these are dark spots beneath the tegument or slightly developed on the tegument surface (Fig. 7). This trait should also represent a potential synapomorphy for the genus. These degenerate eyes might be associated with the subterranean habit of these ants, besides which nothing is known of the biology of the genus.

LIST OF SPECIES

Cryptomyrmex longinodus comb.nov.

Adelomyrmex longinodus Fernández and Brandão, 2003: 20 in: Fernández 2003b.

Distinguished from *C. boltoni* by the smooth and shining thorax, without conspicuous and long rugulae on the sides of the propodeum and mesosoma. The propodeal spines are approximately as long or slightly longer than their bases. The species is known from Brazil (Bahia and Amazonas).

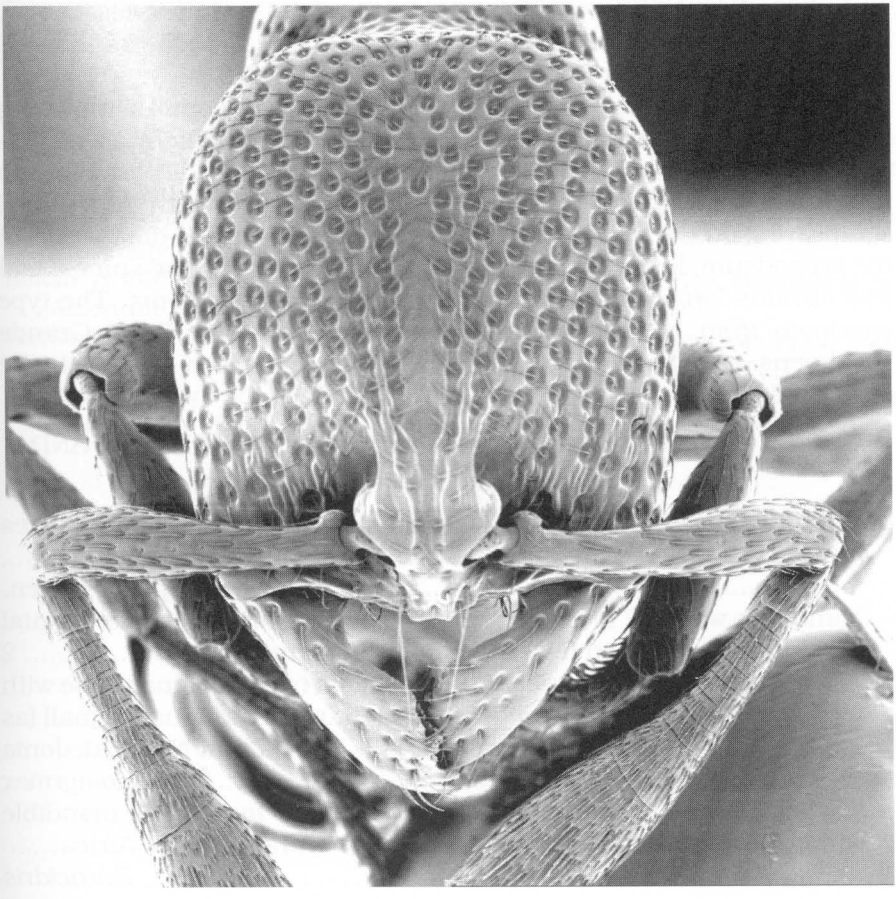

Fig. 8. Full face view of *Baracidris meketra* (Africa)

Cryptomyrmex boltoni comb.nov.

Adelomyrmex boltoni Fernández, 2003b: 14.

The longitudinal rugulae on and along the sides of the propodeum separate this species from *C. longinodus*. The propodeal spines are longer than wide (Fig. 7), in contrast to *C. longinodus*. The species is known from Brazil (Bahia) and Paraguay.

Additional records: 1 w, **Brazil**, São Paulo, Praia Grande, P.E. Serra do Mar, Núcleo Pilões-Cubatão, 23°58'31"S 46°32'24"W, 26-27.V.2001, A.A. Tavares and R.R. Silva legg.; 1 w, **Brazil**, São Paulo, Iguape, E.E. Juréis-Itatins, Núcleo Rio Verde, restinga, 24°32'59"S 47°13'19"W, 5-14.III.2001, A.A. Tavares leg.; 10 w, 1 f, **Brazil**, São Paulo, Tapiraí, 8-

14.I.2001, 24°01'55"S 47°27'56"W, Silva and Eberhardt legg., 1 w, **Brazil**, PR, Tunas, Parque das Lauráceas, 21-29.II.2001, 24°25'16"S 48°43'00"W, Silva and Eberhardt legg. (MSZP, ICN).

Variability. There are some differences in the mesosomal sculpturing in the material observed, which I consider at the moment as within-species variation. In a few specimens (Praia Grande, SP, Brazil), the mesosoma is slightly shorter than in the others, with reticulated sculpturing on the mesopleura and a double keel on the dorsal part of the propodeum, keels that unite the bases of the propodeal spines, and less obvious longitudinal rugulae on the dorsal mesosoma. The type specimen from Bahia is intermediate between these Praia Grande specimens and the other specimens. This variation seems to be geographic.

KEY TO THE GENERA OF ADELOMYRMECINI (WORKERS AND FEMALES)

1 Mandibles with four teeth in the masticatory border; frontal area lacking (Figs. 5-6); petiolar node low; Brazil and Paraguay .... *Cryptomyrmex* n. gen.

— Mandibles with 5-7 teeth in the masticatory border (Figs. 4,8); frontal area present, reduced (Fig. 8); petiolar node high (Fig. 2) 2

2(1) Clypeal lateral teeth present (Fig 4); basal margin of mandible with teeth and notch (Fig. 4); hypostomal teeth present, usually small (as in Fig, 3); Neotropics, New Guinea, Fiji, Samoa and New Caledonia ..... *Adelomyrmex*

— Clypeal lateral teeth absent (Fig. 8); basal margin of mandible without teeth (Fig. 8); hypostomal bridge without teeth; Africa..... ..... *Baracidris*

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