



Fig. 5. Strict consensus tree computed from three trees of length 11, CI = 0.73 and RI = 0.63.

brasiliensis possesses an anterior lamella, but it is opaque, while *Mycocepurus* has a distinct, though usually inconspicuous, lamella. Some species have traces of shine though, and it is very obvious in *M. tardus* where it is partially smooth and shiny. *Apterostigma*, disregarding *A. megacephala*, can be divided into two clades: one in which the smooth and shiny strip is present, the *pilosum* group, and one in which the strip has been lost, the *auriculatum* group (Lattke, 1997). The presence of lateral carinae along the gastral dorsum is shared by all these attines except *Myrmicocrypta*. All attines considered here have denticles on the mesonotum, with the exception of *Apterostigma*, in which probable vestiges of these can be seen in the prominent triangular lobes of the mesonotal carinae found in a few species of the *auriculatum* group (Lattke, 1997), yet they are retained in *A. megacephala*.

The *Apterostigma* + *Mycocepurus* + *Myrmicocrypta* clade is supported by the loss of the lateral pronotal denticles or angles, and perhaps by the development of the posterolateral clypeal ridge. This ridge stretches from the base of the frontal carinae and extends posterad along the lateral cephalic dorsum. Such a structure is lacking in *B. brasiliensis* and its absence in *Apterostigma*, other than *A. megacephala*, is interpreted as a loss.

Apterostigma megacephala shares the following synapomorphies with the rest of *Apterostigma*: (1) each compound eye is partially or totally mounted upon a tubercle; (2) presence of a posterior cephalic ridge or lamella that joins the occipital lobes; (3) an anterodorsal lobe that partially overlaps the helcium of the first gastral tergite. The ocular tubercle is far more developed in *A. megacephala*, being larger than the eye itself, whereas in other *Apterostigma* the eye is always larger. The posterior cephalic ridge is interpreted as homologous to the posterior neck characteristic of other *Apterostigma*. In most *Apterostigma* it is quite developed, forming a lamellar process that completely fuses laterally with the occipital lobes, and forms with them a single structure. The separation between the lobes and the ridge is still evident in *A. megacephala*.

The anterodorsal gastral lobe can only be seen in its entirety by removing the postpetiolar tergite. Unfortunately only the basal and median portions of the anterodorsal gastral lobe are

visible in the *A. megacephala* specimens studied. Dissection of the types was precluded due to each being a unique specimen for each collection. Nevertheless the basal and median structure of the lobe corresponds well to the state in the remaining *Apterostigma* (Fig. 4a,b), and is unlike the other ants studied (Fig. 4c,d). In the other attines dissection was not necessary, as pressing down on the gaster of relaxed specimens permitted viewing of the anterior edge of the first gastral tergite. An additional synapomorphy, considered belatedly, is the reduced palpal formula of *A. megacephala* and other *Apterostigma*. The primitive number in Attini is 4:2 except in two *Acromyrmex* social parasites and in *Apterostigma*, where it is 3:2 (T. Schultz, personal communication; Kusnezov, 1951, 1954). A sister group relationship between *A. megacephala* and the two other *Apterostigma* clades is argued on the basis of these four characters.

Some apomorphies separating all other known *Apterostigma* from *A. megacephala* are: (1) complete loss of the median clypeal seta; (2) loss of distinct mesonotal teeth, represented by two longitudinal carinae, which occasionally are raised into blunt triangles in a few species of the *auriculatum* group; (3) presence of a transverse carina on the cervical area; (4) loss of lateral denticles on the pronotum, sometimes apparently represented as a very inconspicuous swelling on each humeral side; (5) tendency toward loss of the propodeal denticles, which are conserved in a few species of the *auriculatum* group; (6) loss of the posterolateral ridges of the clypeus; (7) transformation of erect and rigid corporal hairs into flexous and curved, decumbent hairs. Autoapomorphies of *A. megacephala* include: (1) the reduced ommatidia of the compound eyes; (2) the development of spatulate ends on some of the erect corporal hairs; (3) the angulate lobes on the posterolateral petiolar and postpetiolar margins. In *A. megacephala* the median clypeal seta may occasionally be indistinct.

It is concluded that *Apterostigma megacephala* represents a basal species in the *Apterostigma* clade. The objective of this discussion has been to place this new ant within the 'lower' attines, and does not pretend to address the phylogenetic relationships of all attine genera. That will have to await an in-depth study of the entire tribe.

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References

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