

MELISSOTARSUS Emery

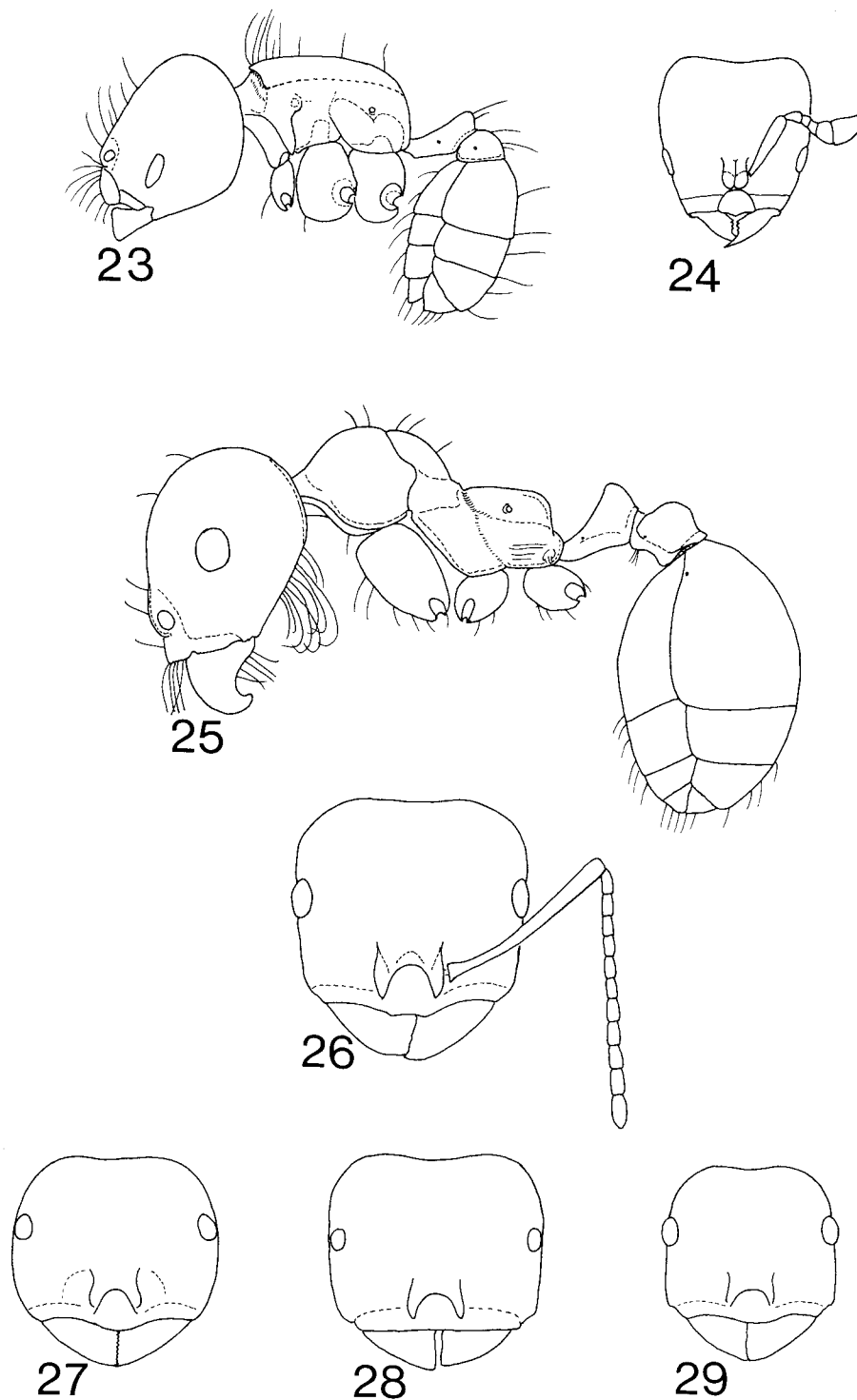
(Figs 23, 24)

Melissotarsus Emery, 1877: 378. Type-species: *Melissotarsus beccarii* Emery, 1877: 379, fig., by monotypy.

DIAGNOSIS OF WORKER. Myrmicine ants with moderate to conspicuous size variation in most nest samples, living under bark and in wood of live trees; general appearance as in Figs 23, 24. Mandibles short, when unworn armed with a long finger-like apical tooth followed by two much smaller teeth and sometimes also by a minute basal denticle. With wear these gradually become an undifferentiated blunt margin. Palp formula 0,1 (*weissi*). Median portion of clypeus bluntly triangular in shape and somewhat raised, not projecting back between the frontal lobes. Lateral portions of clypeus simple and unmodified. Frontal lobes narrow, confluent centrally and separated only by a narrow impressed line; the anteriormost parts of the frontal lobes abut the posterior clypeal margin. Antennal scrobes absent. Frontal carinae absent. Antennae with six segments, the scapes very short (SI 39–47), the two apical segments forming a strong club. Eyes present, distinctly longer than broad and set in front of the midlength of the sides. Alitrunk short, fusiform and box-like, without dorsal sutures or impressions except in the very largest individuals where rarely a metanotal impression is shallowly present. Propodeum unarmed and rounded. Metapleural lobes absent. Lateral portions of pronotum reduced to a narrow V-shaped wedge below the level of the conspicuous mesothoracic spiracle. Anterior coxae small, much smaller than the massively developed middle and hind coxae. Propodeal spiracle round, situated low on the side of the propodeum and just behind its midlength. Metapleural gland system easily visible through the cuticle. Basitarsal segment of each leg greatly swollen, as wide as the preceding tibia, terminating apically in a circlet of small teeth on the anterior (leading) edge on the middle and hind basitarsi. Petiole with an anterior peduncle and a small low posteriorly situated node which is broadly attached to the postpetiole; the latter broadly attached to the gaster. Dorsal alitrunk finely longitudinally costulate throughout. Elongate fine hairs present dorsally on head and body, and also present on the upper surfaces of the scapes and outer surfaces of the tibiae.

This small genus, of which only four uncommon species are presently recognized, is restricted to the Malagasy region (1 species) where it is rare, and the Afrotropical region (3 species) where it is, however, very widespread. The species nest in the healthy wood of living trees, apparently tunnelling their own galleries below the surface. For this reason most collections of *Melissotarsus* are made more by luck than by intent as their presence in the wood is usually not detectable on the surface. Delage-Darchen (1972) has shown that the method of walking in these ants is very strange; they progress on their front and hind legs with the middle pair projecting upwards, and presumably in contact with the gallery roof. She also noted the presence of coccids inside the galleries, also discussed by Ben-Dov (1978). It seems probable that coccid secretions form a major, if not the main, item in the diet of *Melissotarsus* species.

The genus most closely related to *Melissotarsus* is *Rhopalomastix* Forel, represented by three or four poorly defined species distributed throughout the Oriental and Indo-Australian zoogeographical regions and utilizing the same lifeway as *Melissotarsus*. Since Emery (1922a) and Wheeler (1922) produced their classifications these two small genera have always been placed together in a tribe of their own (*Melissotarsini*) and it is fairly certain that they represent two stages on a single adaptive line. *Rhopalomastix* is the more generalized of the two, *Melissotarsus* decidedly the more specialized, but the modifications seen in the latter are foreshadowed in the former genus. It is the accentuation of these adaptive specializations which separates the genera, as follows.



Figs 23–29 23, 24, profile and head of *Melissotarsus weissi*. 25–29, *Messor* workers. 25, profile of *angularis*. 26–29, heads of (26) *angularis*, (27) *striatifrons*, (28) *decepiens*, (29) *denticornis*. Pilosity omitted from 24, 26–29.

Rhopalomastix

Antennae 10-segmented.

Lateral portion of pronotum extensive, distinctly larger than the mesopleuron.

First coxa as large as or larger than the second and third coxae.

Petiole sub-sessile, with a strong ventral process.

Free posterior face of petiole node long, its articulation with the postpetiole narrow.

Basitarsal segment of each leg not swollen, without apical circlets of teeth.

Sting long and strong.

Melissotarsus

Antennae 6-segmented.

Lateral portion of pronotum very reduced, forming a V-shaped narrow wedge which is smaller than the mesopleuron.

First coxa much smaller than the swollen second and third coxae.

Petiole short-pedunculate, with feeble or no ventral process.

Free posterior face of petiole node very short, its articulation with the postpetiole very broad.

Basitarsal segment of each leg strongly swollen, with apical circlets of teeth.

Sting very reduced and probably non-functional.

So little material of *Melissotarsus* is available at present that this survey must be regarded as strictly preliminary. Three species are now recognized in the Afrotropical region but it is possible that each may be compounded of more than one different sibling-species. Conversely it is by no means impossible that further collections will bridge what appear here as species for the differences between them, though consistent in the few samples to hand, are relatively minor and may well be annulled by further collecting.

For the present I define *weissi* as having a dark brown to black strongly sclerotized male, and a similarly coloured female in which the postpetiole in dorsal view is quite narrow (1.20–1.40 × broader than long) and has a rounded or even hemispherical anterior margin. The worker of *weissi* has the alitrunk medium to dark reddish brown, the anterior margin of the pronotum in dorsal view sharply defined and angular where it meets the anterior declivity, and the sides of the alitrunk meeting the dorsum in a fairly well-defined angle.

M. emeryi and *beccarii*, on the other hand, have pale yellow feebly sclerotized males, and have females in which the postpetiole in dorsal view is quite broad (1.90–2.20 × broader than long) and lacking a rounded anterior margin, the margin instead being more or less straight or even slightly concave. The workers are yellow to light yellowish brown and have the sides of the alitrunk rounding bluntly into the dorsum when seen in dorsal view. Females of *emeryi* differ from those of *beccarii* as in the former the mesoscutum is broader than long in dorsal view; it is longer than broad in the latter. Workers of *emeryi* have the anterior margin of the pronotum sharply defined and angular where it meets the anterior declivity, whereas in *beccarii* there is no such sharp differentiation between dorsum and anterior declivity, instead the one surface rounds bluntly into the other.

The shape of the alitrunk in dorsal view shows subtle but perhaps significant differences between separate series of workers presently grouped as single species, but discovering whether these differences are meaningful, or even consistent, will have to await the amassing of considerably more samples than are presently available.

Synonymic list of Afrotropical *Melissotarsus* species

beccarii Emery

titubans Delage-Darchen **syn. n.**

emeryi Forel

emeryi var. *pilipes* Santschi **syn. n.**

compressus Weber **syn. n.**

weissi Santschi

major Santschi **syn. n.**

Key to species (workers)

- 1 With the alitrunk in dorsal view the anterior margin of the pronotum rounding evenly into the anterior declivity, the two not meeting in a sharp angle or edge. (Ethiopia, Tanzania, South Africa, Ivory Coast) *beccarii* (p. 336)

- With the alitrunk in dorsal view the anterior margin of the pronotum separated from the anterior declivity by a sharp angle or edge 2
- 2 Sides of alitrunk meeting dorsum in a fairly well-defined angle. Alitrunk colour medium to dark reddish brown. (Ghana, Congo, Zaire) *weissi* (p. 337)
- Sides of alitrunk rounding bluntly into the dorsum. Alitrunk colour yellow to light yellowish brown. (Ethiopia, Sudan, Kenya, Tanzania, Zaire, Central African Republic, South Africa, Ivory Coast, Ghana) *emeryi* (p. 337)

The three presently recognised species are basically so similar that to present a full description for each would be redundant so, for the purposes of identification, a description of the type-species *beccarii* is given and the other two are compared to it.