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M. G. Smith.

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- 2.—*A Monograph of the Formicidae of South Africa.* By GEORGE ARNOLD, D.Sc., A.R.C.S., F.E.S., Curator of the Rhodesia Museum, Bulawayo.

(With 23 Text-figures.)

APPENDIX.

SEVERAL additions to our list have been made since the publication of the Monograph composing Vol. XIV of these Annals. There are also a few minor corrections and some misprints in the first two parts which need rectification. In the following pages these addenda and corrigenda will be arranged in their proper order according to the pagination and the sequence of the Tribes.

I have recently had the whole of the Haviland collection, now in the Natal Museum, submitted to me for examination by Dr. E. Warren, Director of that Museum. The collection is preserved in spirits and contains specimens (paratypes) of most of the species which were sent to Dr. Forel for determination. An examination of this material has brought to light a few novelties, and has enabled me to add further remarks on some of Forel's species.

PONERINAE.

TRIBE CERAPACHYINI.

CERAPACHYS PERINGUEYI, Emery, var. LATIUSCULA.

Also found at George, Knysna district, (Brauns).

CERAPACHYS ARNOLDI, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 211, ♀, 1914.

♂, 3.5 mm. Colour similar to that of *Peringueyi*, but a little paler and more reddish; the tarsi dark ochreous, the antennae yellowish brown (not ferruginous as in *Peringueyi*), the club ochreous. Smooth and shining. Puncturation like that of *Peringueyi* on the head and thorax, but the punctures smaller and shallower. The puncturation of the petiole and abdomen much more sparse and more feeble than

in *Peringueyi*; the petiole more strongly punctured than the 1st abdominal segment, the latter only slightly more strongly punctured than the rest of the abdomen. The scapes more strongly punctured than in *Peringueyi*. Pilosity shorter and less abundant than in *Peringueyi*. Head slightly longer than wide, relatively narrower behind than in *Peringueyi*, with the sides more convex, the posterior angles much more prominent, and the posterior margin more deeply emarginate. The vertex of the head is more convex. The scape is longer, extending to, or a little beyond the middle of the head; 2nd-9th joints of the flagellum twice as wide as long (less than twice in *Peringueyi*). The ventral lamella produced in its anterior half, the projection ending in a sharp angle or tooth behind (in *Peringueyi* the posterior end of the projection forms a wide and obtuse angle).

Habitat—? Cape Province. (Ex S.A.M. coll.)

(S.A.M., G.A. colls.)

Var. HEWITTI, n. var.

♂, 3 mm. Colour as in *Peringueyi*. Similar to the type of *Arnoldi* but smaller, and differing from it in the following characters. The hairs on the body are more abundant, especially on the petiole and abdomen. The thorax is shorter, the head (measured from the apex of the clypeus to the occipital margin) being a little longer than the thorax (measured from anterior margin to the brow of the declivity); in the type, the thorax is slightly longer than the head. The 1st segment of the abdomen is nearly as wide in front as behind (distinctly narrower in front than behind in the type).

Grahamstown, (Hewitt). Type in my collection.

C. ROBERTI, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 212, ♀, 1914.

♀, 3.5 mm. Castaneous red. Smooth and shining. Head and abdomen very finely and sparsely punctured. Thorax and petiole more coarsely and more closely punctured; a median longitudinal area on the thorax almost impunctate. Pilosity yellowish, thin, short, and scanty, becoming almost a pubescence in parts. Head one-fifth longer than wide, widest in the middle, the sides distinctly convex, the hind margin concave, the posterior angles rounded but very prominent, curved outwards and continued underneath the hind margin of the head as prominent elongate lobes or carinae. Mandibles oblong, as wide at the base as at the masticatory margin,

which is feebly concave. Frontal carinae close together and short. Genal carinae very distinct. Eyes composed of a single facet, placed in the middle of the sides. Antennae 12-jointed; antennal fossae deep. The scape extends back beyond the middle of the head, the 2nd-9th joints of the flagellum are wider than long, the 10th as long as wide, the apical joint fairly narrow, very little more than twice as long as wide, as long as the 7th-10th together. Promesonotal suture distinct; the pronotum in front, and the declivity of the epinotum sharply marginate. Pronotum as long as wide, one-quarter shorter than the rest of the thorax. The latter is narrowed behind the promesonotal suture, widens out again at about the posterior fourth, and thence narrowed again towards the brow of the declivity, which is nearly vertical. The anterior face of the petiole is vertical and has its sides marginate. The petiole is moderately convex above and behind, feebly so at the sides, a little longer than wide, as wide in front as behind; the ventral lamella produced at its base into a large, rectangular and semitransparent lobe. The 1st abdominal segment is two-fifths wider than the petiole, a little wider at the apical margin than at the base, distinctly longer than wide, narrower than the 2nd segment, the ventral portion projecting forwards at the base. Second segment a little longer than wide.

Allied to *wroughtoni* but much larger, the promesonotal suture much deeper, the posterior angles of the head more prominent.

The key to the species of the ♂♂ of Cerapachys, should be altered as follows.

- (4) 1. Eyes absent or composed of a single facet; reddish yellow species.
- (1b) 1a. Larger species, 3.5 mm.; posterior angles of the head very prominent and curved distinctly outwards. *Roberti*, Forel.
- (1a) 1b. Smaller species, less than 3 mm.; posterior angles of the head less prominent, not markedly curved outwards.
- (7) 8. Body castaneous brown, not very shining, more closely punctured, pubescence and pilosity rather abundant.
- (10) 9. 2nd-9th joints of the flagellum twice as wide as long; projection of ventral lamella of petiole ending in an acute angle behind. *Arnoldi*, Forel.
- (9) 10. 2nd-9th joints of the flagellum less than twice as wide as long; projection of ventral lamella ending in an obtuse angle behind. *Peringueyi*, Emery.

PHYRACACES COXALIS, n. sp.

♂, 2.8 mm. Black; mandibles, antennae, bases and apices of the femora, tibiae and tarsi brownish yellow, the middle of all the tibiae

somewhat darker. Petiole and 1st abdominal segment moderately, the rest of the body very shining. Pilosity whitish, short, decumbent and very sparse on the head and thorax, more abundant on the petiole and abdomen, the apical half of the latter with longer and exserted hairs. Antennae and tarsi sparsely pubescent. Posterior half of the head and all the thorax sparsely punctured; the punctures on the thorax fairly coarse, larger than those on the head. Dorsal face of the petiole and the 1st abdominal segment fairly closely punctate and coriaceous, the posterior fifth of the latter more sparsely punctured. Basal half of the 2nd abdominal segment finely and evenly punctured. Scape and flagellum finely punctured, mandibles edentate, sparsely and rather coarsely punctured. A patch between the eyes and antennal sockets very finely coriaceous. The rest smooth and impunctate.

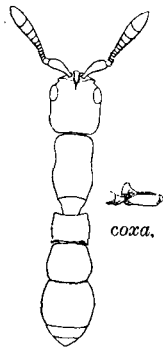


FIG. 60.
P. coxalis, n. sp.

Head subquadrate, one-seventh longer than wide, the sides and posterior margin very feebly convex, the posterior angles widely rounded. Clypeus and frontal carinae as in *P. Cooperi*, Arnold. The genal angles in front of the eyes more acute and directed more upwards than in that species. The scapes are much more abruptly incrassate than in *Cooperi* and are hardly three times as long as their greatest width, barely extending back as far as the hind margin of the eyes. First joint of flagellum as long as wide, the 2nd-8th much wider than long, the 9th one-third wider than long, the last joint half as long again as the 10th. The eyes occupy one-fourth of the sides of the head and are placed just in front of the middle. Dorsum of thorax sharply margined in front and behind, narrowed gradually towards the anterior third, thence amplified and widest at the posterior third; about three-fifths longer than wide. The thorax is convex lengthwise and rises gradually from front to back. The declivity is very smooth and shining, steep, feebly margined at the sides. Petiole not quite one-third wider than long, anterior and lateral faces vertical, the anterior also concave transversely, the posterior face convex from above to below and vertical. The dorsal face is moderately convex, sharply marginate at the sides (which are feebly arcuate), and moderately marginate and concave in front; the posterior angles end in blunt teeth which are about as long as their basal width. The ventral lamella of the petiole is produced in front into a large triangular tooth. Abdomen deeply constricted between the 1st and 2nd

segments. The 1st is narrowest at the base, a trifle wider than long, and half as long again as the petiole, its sides convex. The 2nd segment is slightly wider and longer than the 1st, and a little longer than wide. The coxae of the posterior pair of legs bear behind, internally, a lamelliform and bluntly triangular process, which is as high as it is wide at the base. This structure is also visible in *Cooperi*, but in that species it is thicker and relatively shorter.

Sawmills, Umgusa River, S.R. Several ♂♂ taken running about on sandy soil and in hot sunshine. Quite distinct from and much smaller than *P. Cooperi* and *P. Braunsi*.

(S.A.M., R.M., G.A. colls. Type in my collection.)

TRIBE PLATYTHYREINI.

PLATYTHYREA SCHULTZEI, Forel. Also taken at the Victoria Falls and Bulawayo.

♂, (hitherto undescribed), 8 mm. Black; mandibles, legs and scapes reddish ochreous; flagellum reddish brown; the first two joints and apices of the remaining joints paler. Sculpture and pubescence as in the ♀, but the punctures are very shining and larger, particularly on the 1st abdominal segment; the punctures on the dorsum of the epinotum and on the petiole very large and deep. Head subcircular, about as wide as long, widest across the eyes, the posterior margin straight. Mandibles large, triangular, acute at the apex. Eyes large, oblique, occupying more than half the sides of the head. Antennae filiform, thick, extending back to the brow of the declivity of the epinotum; the scape short, not reaching the lateral margin of the head, about as long as the 2nd joint of the flagellum; the 1st joint wider than long, very short, hardly one-third the length of the 2nd joint, all the remaining joints at least twice as long as wide. Frontal carinae parallel, well developed, almost reaching back to the level of the posterior margin of the eyes. Ocelli not large, convex. Pronotum convex in front; mesonotum rather convex lengthwise, a little wider than long; scutellum rounded posteriorly, well above the level of the epinotum. Metanotum pointed or tuberculate in the middle. Dorsum of epinotum widest at the base, three times wider at the base than it is long in the middle, much wider than long; the declivity vertical, concave from above to below, the margins sharply defined. Petiole similar to that of the ♀, but more convex above and a little narrower in front; the posterior margin only feebly tuberculate at the lateral angles, not dentate as in the ♀. The ventral lamella is

produced at the extreme base into a long, thin spine, pointing downwards and blunt at the apex. Abdominal constriction fairly strong; the 1st segment as long as the 2nd. Wings with the nervures and stigma pale brown, the apical half smoky.

Bulawayo, taken with the ♂♂. In my collection.

PLATYTHYREA MOCQUERYSI, Emery, var. MATOPOENSIS, Arnold.

♂, (hitherto undescribed), 6 mm. Black; antennae and legs reddish brown, the tarsi paler, mandibles dark castaneous. Sculpture and pubescence as in the ♀, but the punctures are larger and deeper, especially on the epinotum and abdomen; the epinotum is also finely coriaceous. Head subquadrate, slightly narrowed behind, the posterior margin straight, the sides feebly convex, the posterior angles rounded. Eyes large, occupying the anterior half of the sides of the head; ocelli small. Mandibles large, triangular, the masticatory margin feebly denticulate. Anterior margin of clypeus convex. Frontal carinae slightly divergent behind, not reaching the level of the middle of the eyes, not so distinct as in *Schultzei*. Antennae filiform, extending back to about the middle of the mesonotum; scape short, very little longer than the 2nd joint of the flagellum; the 1st joint as long as wide and half as long as the 2nd, the remaining joints all about one and a half times as long as wide. Pronotum three times as wide as long, widest behind; the promesonotal suture arcuate. Mesonotum a little wider than long, the anterior Mayrian furrows fairly distinct (very feeble in *Schultzei*). Dorsum of epinotum about two and a half times as wide across the base as it is long in the middle. It has a median longitudinal sulcus or row of punctures, and the posterior angles are prominent and subdentate; the declivity is vertical, submarginate at the sides. Seen from above, the junction of the two faces forms a sharp and concave edge. The petiole is shorter than in the ♀, little more than one-quarter longer than wide, distinctly narrower in front than behind, convex above and at the sides, the anterior face vertical, rounded above at its junction with the dorsal surface. The ventral lamella of the petiole produced in front into a rounded and more or less triangular projection. First abdominal segment one-third shorter than the 2nd, (as long as the 2nd in *Schultzei*). Inner margin of posterior coxae subdentate.

Essexvale, S. Rhodesia; taken at light. Although not captured in company with the ♀, it is undoubtedly referable to this species on account of its general structure, sculpture and size. In my collection.

PLATYTHYREA ARNOLDI, Forel.

♀, (hitherto undescribed), 13 mm. Sides of pronotum a little straighter than in the ♂, but the segment is as large and of the same shape as in the ♂. Mesonotum one-fourth wider than long; the scutellum (excluding the paraptera) pentagonal. Dorsum of epinotum one-third wider at the base than long, very little wider there than at the apex; less abundantly punctured than in the ♂. Wings dark brown, rather short, (anterior wing 7 mm. long), nervures and stigma almost black. Otherwise exactly like the ♂.

♂, (hitherto undescribed), 10-10.5 mm. Head a trifle wider than long; a little narrower in front of the eyes than behind them, the posterior margin feebly convex. The eyes occupy a little more than the middle third of the sides. Clypeus as in the ♂. Mandibles bright ferruginous, subopaque, the apex subacute, the masticatory margin edentate and concave. The scapes are three times as long as the 1st joint of the flagellum. Pronotum three and a half times wider than long in the middle. Mesonotum nearly as long as wide, sparsely but strongly punctured in the middle. Scutellum very convex transversely, as high as the mesonotum and much higher than the dorsum of the epinotum. The latter and the petiole are very strongly and abundantly punctured, much more so than in the ♂ and ♀. The dorsum of the epinotum is more narrowed towards the apex than in the ♀, unarmed, but with the apical margin slightly raised. Petiole a little shorter than in the ♀ or ♂. Wings almost hyaline in the basal half, fuscous brown in the apical half, the nervures pale brown, the stigma black. Otherwise like the ♀.

Hillside, Bulawayo, ♀ and ♂, with ♂♂; also taken at Victoria Falls. In both instances the nest resembled the one found at Shiloh, being surrounded exclusively with the remains of beetles. Types of ♀ and ♂ in my collection.

TRIBE PROCERATIINI (pp. 159 and 33).

GENUS DISCOTHYREA, Roger

D. OCVLATA, Emery.

Ann. Soc. Ent. Belg., vol. 45, p. 52, ♂, ♀, ♂, 1901.

“♂ and ♀. Dark ferruginous, dull, mandibles, antennae, tarsi and abdomen paler; densely punctured with numerous and not deep little pits; covered with a velvety whitish pubescence; a small and oblique hair exerted from each puncture, larger than those of the

pubescence, but hardly longer. Mandibles finely denticulate; the clypeus, fused with the frontal carinae, forms a subrectangular lobe in front; the frontal carinae are longer than half the head, and together form a projection which is flat on top, with abrupt margins; it starts in an acute angle in front, widens towards the third of its length, and then narrows and gradually descends posteriorly. Eyes fairly large, with large convex facets (at least 30 in the ♂). Ocelli present in the ♀. Antennae 9-jointed. Thorax without sutures in the ♂, the epinotum obtusely angulated on each side of the brow of the declivity, the latter concave. In the ♀, the angles of the epinotum are more prominent. Petiole hemispherical, the posterior face of which is feebly concave and opposed to the 1st abdominal segment, but only about half its surface is articulated to that segment. First abdominal segment as long as the thorax; separated by a well-marked constriction from the 2nd segment, which is shorter; the remaining segments very narrow. Wings yellowish with pale nervures. ♂ 2.5 mm., ♀ 3 mm.

♂, 2.5 mm. Black, dull, sculpture as in the ♀; mandibles, scapes and legs brown, flagellum, tibiae and tarsi whitish; genital armature yellowish; wings colourless, with very pale nervures. Head globose, mandibles triangular, well developed; clypeus, as in the ♂, fused with the frontal carinae which are united to form a single median carina. Antennae 13-jointed; scape as long as the three following joints taken together, 2nd joint very short, globose, the following joints longer than wide. Thorax short, rounded. Petiole as in the ♀, 1st abdominal segment not much larger than the 2nd, the abdomen less abruptly anteflexed below than in the ♀. Subgenital plate simple; cerci well developed; genital armature only partly retractile, stipes large. Wings with 1 closed cubital cell, the 2nd hardly indicated, no recurrent nervure.

Cameroons (Conradt)."

This species has to be added to our list on the evidence of a ♀, taken by myself in the Rain Forest, Victoria Falls, which agrees in every particular with the above description except the puncturation. The punctures in this specimen may be described as deep, being nearly as deep as they are wide. In my collection.

D. TRAEGAORDHI, Santschi.

Göteborgs K. Vetensk. och Vitterh. Handl., vol. 15, 2, p. 3, ♂, 1914.

"♂, 1.5 mm. Testaceous red, upper surface of head and thorax and anterior half of abdomen brownish. Mandibles, antennae and tarsi testaceous yellow. Third to 7th joints of antennae slightly brownish.

Pubescence very fine and abundant. Erect pilose hairs absent; dull. Densely and finely punctured. Head distinctly longer than wide, narrowed in front, the posterior margin rounded, the sides nearly straight. Eye composed of 5 or 6 facets, placed in the anterior third of the sides. Antennae with 8 (9) joints, the 5th and 6th fused together. The scape, dilated at the apex, reaches the middle of the head; 2nd and 3rd joints of flagellum twice as wide as long, indistinct, the following joints increasingly wider. The last joint very large, ovoid, about two-thirds longer than wide. Frontal carinae completely fused into a single foliaceous plate, forming a raised triangular lobe, with the summit rounded in profile, and not extending beyond the anterior third of the head. Anterior margin of the clypeus transverse in its median fourth. Mandibles punctured, feebly denticulate behind, with a concave masticatory margin which ends in front in a strong triangular tooth. Thorax raised, feebly convex, dorsal surface flat, submarginate and without sutures. Declivity truncate, marginate and subdentate. Petiole about three times as wide as long, rounded above, very convex in front, with a large tooth below."

Pietermaritzburg, Natal (Traegaardh).

TRIBE PONERINI.

CENTROMYRMEX CONSTANCIAE, Arnold.

In the opinion of Dr. Forel, to whom I sent specimens of this species, the name must be sunk as a synonym of *C. sellaris*, Mayr, (Ent. Tidskr., p. 230, 1896). On the other hand, Dr. Santschi is of the opinion that the forms are distinct. Not having seen the type of *sellaris*, I am unable to pronounce any opinion on the subject myself.

Recently Dr. Santschi described as a new species (*C. Arnoldi*, Rev. Zool. Afr. 6, p. 229, 1919) some specimens of *Constanciae* which I had collected in the Amatongas Forest, P.E.A. In a later paper he admits that it is at the best only a slight variety of *Constanciae*. (Ann. S. E. Belg., vol. 60, p. 8, 1920.) For my part, I fail to detect any difference between these specimens and the type of *Constanciae*. The ♂ of the latter has been briefly described by Santschi under the name of *Arnoldi*. The following is a more detailed description.

♂, (hitherto undescribed), 5.5-5.3 mm. Black; the base of the abdominal segments narrowly dark brown, legs brown, tarsi pale yellowish brown, antennae brown and becoming brownish yellow towards the apex, the 1st joint of the flagellum brownish yellow; shining. Legs

and antennae pubescent, the pubescence on the latter decumbent and shorter than on the legs. Whole body clothed with a short, erect, coarse, and black pilosity, intermixed here and there with some longer and finer hairs; on the abdomen the coarser pilosity is less abundant.

Head coarsely punctured on the vertex and frons, also finely striate, transversely so above, more or less longitudinally on the clypeus. Pronotum closely and finely punctured, the mesonotum more closely punctured, the punctures becoming larger and deeper towards the posterior margin, also finely and transversely rugose in the middle over its posterior third. Scutellum longitudinally striolate. Epinotum and petiole smooth, abdomen sparsely and finely punctured. Head, seen from above, a little more than twice as wide as long; seen from in front, transversely oval and about one-fourth wider than high; seen from the side, thicker anteriorly. The eyes occupy the anterior half of the sides. Mandibles elongate triangular, small, not meeting when closed. Clypeus trapezoidal, as long as wide in front, the anterior margin straight. The scapes are barely one-fourth longer than wide, two-fifths longer than the 1st joint of the flagellum, which is barely longer than wide, all the remaining joints longer than wide, the 3rd-7th joints subequal. Ocelli not raised.

Pronotum narrowly exposed above, slightly flattened and horizontal at its posterior margin. Mesonotum as long as wide, not very convex, longitudinally impressed in the middle over its posterior half, the forks of the Mayrian furrows distinct only in front. Scutellum gibbous, triangular, rounded behind. Dorsum of epinotum convex transversely, slightly so and oblique lengthwise, twice as wide as long, merging by a short curve into the longer and vertical declivity. Petiole like that of the ♂, but wider, its dorsal edge much shorter, (*i.e.*, thinner above), armed below with a sharp spine as in the ♂. Abdomen three times longer than wide, widest behind the middle. Wings smoky, strongly iridescent, nervures and stigma dark brown; 2 cubital, 1 discoidal and a closed radial cell present.

Amatongas Forest, P.E.A.

Nesting in the decayed wood of a fallen tree, a fairly large colony, consisting of about 5 dozen ♀♀ and as many ♂♂.

STREBLOGNATHUS AETHIOPICUS, Smith.

Also taken at Port Elizabeth and Grahamstown, (Brauns); Durban, (Marley); Maletsumgane Falls, Basutoland, (R. M. Sloley).

Page 54, line 11, for "genus" read sub-genus.

PACHYCONDYLA STRIGULOSA, Emery.

Also taken in Natal, (Wroughton and Haviland).

PACHYCONDYLA GRANOSA, Roger.

Also taken at Victoria Falls, (Peringuey) ; Knysna, Cape Prov.,
(Brauns).

♂, (hitherto undescribed), 12 mm. Head and scutellum black, promesonotum ferruginous, the rest of the body and the legs and antennae ochreous. Pilosity yellowish, very sparse, absent from the thorax. Pubescence yellowish, short, decumbent and fairly abundant all over. Head moderately shining between the eyes and sparsely punctured, dull and coriaceous posteriorly. The body shining, very superficially rugulose on the mesonotum and epinotum, exceedingly finely and sparsely punctured elsewhere, the metanotum dull and rugoso-punctate.

Head two and a half times wider than long, one-third longer than high, the eyes very large and occupying the anterior two-thirds of the sides. Clypeus carinate in the middle. Mandibles small and dull. The scapes are about twice as long as the 1st joint of the flagellum, which is one-fourth longer than wide. The apex of the antenna reaches back as far as the base of the 2nd abdominal segment. Pronotum very narrowly exposed above. Mesonotum very convex transversely and lengthwise, about one-third wider than long. Scutellum convex and gibbous, higher than the mesonotum, subtriangular when seen from above, the sides subvertical. Dorsum of epinotum as long as the subvertical declivity ; the junction of the two faces widely angular, the apex of the angle rounded. Petiole as long as high, a trifle widened posteriorly, two-thirds as long again as wide ; the dorsal face convex, the anterior and posterior faces subvertical, feebly convex from side to side ; the anterior face twice as long as the posterior. Abdomen elongate, narrow at the base, widened gradually towards the posterior third, thence narrowed again to the apex. Wings slightly smoky, nervures yellowish brown, stigma brown.

Majuba Nek, Cape Prov., taken with the ♀♀, (Hewitt). Type in my collection.

PACHYCONDYLA (ECTOMOMYRMEX) BRUNOI, Forel.

♀, (hitherto undescribed), 5.3 mm. Pronotum two and a third times wider than long, its anterior face steeper than in the ♂. Dorsum of epinotum long, as long as the pronotum, twice as wide at its base as long ; the declivity vertical, longer than the dorsum. Petiole wider and thinner above than in the ♂. Otherwise similar to the ♂.

PACHYCONDYLA KRUEGERI, Forel, race ASINA, Santschi.

Ann. Soc. Ent. Belg., vol. 56, p. 153, ♀, 1912.

This race has been recorded by Santschi as occurring in Natal, (leg. *Traegaordh*).

It differs from the type of the species in having the dorsal profile of the thorax less arched, the dorsal surface of the node flatter, the 2nd abdominal segment wider, wider than long, and the abdominal constriction stronger.

EUPONERA CAFFRARIA, Smith.

Port Elizabeth, Lichtenburg—Transvaal, Bothaville—Orange Free State, but not occurring at Willowmore, (Brauns).

EUPONERA HAVILANDI, Forel, and PERINGUEYI, Emery

In my remarks on the first of these two species, I pointed out that if the unknown ♂ of *Peringueyi* should eventually prove to be similar to that of *Havilandi*, it might be necessary to separate those two species from the rest of the genus *Euponera*, under the subgenus *Hagensia*, or to re-erect that as a distinct genus. Prof. Emery has expressed the opinion, (*in litt.*), with which I agree, that the presence of toothed claws in the ♀ and ♂ should be sufficient grounds for such separation. It is true that the ♂ of *Havilandi* resembles that of *caffraria*, e.g. in the possession of the spined pygidium and closed radial cell, but the structure of the claws in both sexes, the shape of the petiole in the ♂, and the marginate pronotum, the mandibular fovea and the large size of the ♀♀ of both species, justify the erection of a genus distinct from *Euponera*. These two species are therefore to be placed under the new genus *Hagensia*, characterised as follows :—

Genus HAGENSIA, Forel (Arnold emend.).

Characters.

♀. Claws with a distinct tooth. Middle and hind tibiae with two calcaria, the outer small, the inner large and pectinate. Mandibles with the masticatory margin long, beset with alternately large and small teeth, and with a transverse or oblique elongate fovea near the base. Checks without carinae. Scape cylindrical. Thoracic sutures distinct. Pronotum margined laterally. Node of petiole truncate behind, the junction of the anterior and posterior faces forming a sharp edge. Abdomen truncate at the base and sloping forwards; the 1st segment with a distinct tooth below at the base.

♂. Antennae 13-jointed, long and filiform; the scape short, shorter than the 3rd joint of the flagellum, the 1st joint shorter than the scape. Mandibles edentate, oblong and very small. Frontal carinae obsolete. Pronotum very little exposed above; Mayrian furrows not defined. Epinotum very bluntly bituberculate. Petiole long, much longer than wide, the node feeble. Pygidium spined. Middle and hind tibiae with two calcaria. Claws with a small tooth. Radial cell closed.

Type of genus, *HAGENSIA HAVILANDI* Forel.

The key to the genera on page 37 should be altered as follows.

- (11) 10. Claws with a ♂♂ single tooth.
 - (10b) 10a. Pronotum not margined *Megaponera*, Mayr.
 - (10a) 10b. Pronotum margined *Hagensia*, Forel.
- ♂♂
- (4) 7. Scape considerably shorter than the 2nd joint of the flagellum.
 - (7b) 7a. Claws toothed *Hagensia*, Forel.
 - (7a) 7b. Claws simple.

On page 69 I pointed out that the Natal forms differed from those taken at King William's Town. The examination of further material, including specimens which were taken at Durban and which agree entirely with Forel's description, has enabled me to clear up the confusion and to recognise the existence of two races of the type species.

HAGENSIA HAVILANDI, Forel, race *GODFREYI*, n. r.

♀, 13 mm. Larger than the type of the species from Natal. Moderately shining all over; very finely and evenly punctured, the spaces between the punctures smooth, not reticulate and shagreened as in the type of the species. Mandibles smooth and shining, the fovea near the base much deeper and wider. The longitudinal depression at the summit of the declivity of the epinotum is much deeper and ends more abruptly. The declivity is also narrower than in the type of the species. The sides of the head are more convex, and the head is shorter or only one-eighth to one-ninth longer than wide (one-fifth in the type of the species). Otherwise like the type of the species. Pirie, King William's Town, (Rev. R. Godfrey); Grahamstown, (Hewitt and Cherry). Type of ♀ in my collection. Type of ♂ in the S.A.M. coll.; this is the ♂ described on pp. 68-69.

HAGENSIA HAVILANDI, race *MARLEYI*, n. r.

♀, 13.6 mm. This differs from both the type of the species and race *Godfreyi* by its more robust build and by its sculpture, which consists

of a very dense, regular, microscopic, and reticulate puncturation on the head, and thorax, similar but less dense on the abdomen. The latter has a sparse and very shallow puncturation superimposed. The whole body, excepting the base of the abdomen, is entirely dull. Pubescence much finer and shorter than in the type species, forming only a microscopic down. Mandibles as in the type of the species, but with the foveae deeper and more transverse in direction. The anterior margin of the clypeus lacks the obtuse angle or tubercle which is present in the type, and the suture which separates the clypeus from the rest of the head is shining and deeply impressed (shallow in the type of the species). The frontal carinae are not elongated behind like an eyebrow as in the type of the species. The frontal sulcus is much deeper and ends abruptly in front and behind. The pronotum is widest in front, and wider than in the type species, very sharply marginate all round, the margin projecting slightly over the vertical sides. Mesonotum wider than long (about as long as wide in the type). Dorsum of epinotum wider and flatter, the declivity more sharply margined, very little higher than wide below (nearly two-thirds higher than wide below in the type), not longitudinally impressed at its summit. The posterior face of the scale lacks the slight tubercle below the apex which is present in the type of the species.

Eshowe, Zululand, (H. B. Marley). Type in my collection.

EUPONERA WROUGHTONI, Forel.

♀, (hitherto undescribed), 7 mm. Sculpture as in the ♂, but a little stronger on the abdomen. The yellowish pubescence is much more abundant. The mesonotum is almost flat above; the dorsum of the epinotum short and oblique, its junction with the declivity rounded; the declivity vertical in its lower half, slanting forwards in its upper half. Petiole like that of the ♂, but wider and much thinner above. Wings brownish yellow, nervures and stigma dark brown. Otherwise like the ♂.

Estcourt, Natal, (R. C. Wroughton). In my collection.

PONERA DULCIS, Forel.

Page 82, four lines from the bottom of the page, ♂ should be altered to ♀.

PONERA SULCATINYSIS, Santschi.

Göteborgs K. Vetens. och Vitterh. Handl., vol. 15, 2, p. 4, ♂, ♀, 1914.

“♂, 3.5–3.8 mm. Black, mandibles, antennae, tarsi and anus testaceous red; dull. Upper surface of pronotum, petiole and 1st

abdominal segment slightly shining. Densely and finely punctured. An abundant whitish pubescence all over. A few fine, erect, pilose hairs round the mouth and on the abdomen. Head one-sixth longer than wide, sides fairly convex, the posterior angles a little rounded, posterior margin straight, distinctly wider behind than in front. Eyes composed of 3-5 facets, placed at the anterior third of the sides of the head. Anterior border of clypeus emarginate at the sides, in the middle produced into a blunt angle, with a strong median carina which is longitudinally impressed along its anterior third, appearing almost bicarinate. Mandibles subopaque, microscopically punctured; also with a few large piliferous punctures, armed with 11 teeth, the posterior ones smaller. The scape is thicker than in *coarctata* Latr., and extends beyond the occipital margin; 3rd-10th joints of the flagellum distinctly wider than long. The profile of the thorax is evenly and feebly convex from front to back. The sutures well defined but not deep. Pronotum feebly marginate. The dorsum and declivity of epinotum subequal, their junction forming a blunt angle; the dorsum narrow, very convex transversely, the declivity margined. Scale of petiole twice as wide as long, rounded from front to back above; the anterior and posterior faces flat and subvertical, (a little thicker below than at the top), without distinct margins. It is a little higher than the thorax and abdomen, and bears below a compressed projection. First abdominal segment higher and wider than long, narrower in front than behind, and longer than the 2nd.

♀, 3.9 mm. Anterior margin of the pronotum, scutellum and metanotum testaceous red. The scutellum and metanotum much smoother and more shining than the rest of the sculpture, which, like the colour, is similar to that of the ♂. The thorax is higher and stouter than in *coarctata*. The dorsum of the epinotum is one-third the length of the declivity. The scale of the petiole is thinner above, the anterior face slightly more oblique, otherwise as in the ♂."

Richmond, Natal, (Traegaardh).

Race DURBANENSIS, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 213, ♀, 1914.

"♀, 3 mm. Much smaller than the type of the species. The scale is lower and thicker. The 1st abdominal segment is vertically truncate at the base, forming an abrupt angle with the upper surface, instead of a curve as in the type. The abdominal constriction is also stronger, and the angle between the two faces of the epinotum more abrupt. The scape does not reach the occipital margin, being short of it by

one and a half times its thickness. . . . The mesoepinotal suture is deeper. The puncturation is a little more feeble and sparse on the body, which, like the head, is shining. The pubescence is weaker. Brown; mandibles, legs, apex of abdomen and petiole brownish yellow."

♀, (hitherto undescribed), 4 mm. Body entirely black; mandibles, antennae, tibiae, tarsi and articulations of the legs dark ferruginous. Head very slightly shining, the rest of the body shining. Otherwise like the type of the species.

Durban, (Arnold, Marley); under stones in moist places. (R.M., G.A., colls.)

PONERA SPEI, Forel, race DEVOTA, Santschi.

loc. cit., p. 5.

"♂, 3.3 mm. Testaceous red; upper surface of head and middle of the abdomen browned; tarsi a little paler. Dull; sides of abdomen subopaque. Densely and finely punctured; sides of meso- and metasternum longitudinally striate. A downy, yellowish pubescence, fairly long, is present all over, but does not hide the sculpture; it is divergent on the frons, from a line which reaches the occiput. Pilosity fairly abundant on the abdomen, scanty elsewhere. Head rectangular, as wide in front as behind, the posterior margin straight, the sides fairly convex. The eyes have 4 or 5 colourless facets, and are placed in the anterior fourth of the head. Clypeus produced in the middle, the sides feebly emarginate; the blunt carina is feebly impressed anteriorly (much less clearly than in *sulcatinasis*). The scape extends beyond the occipital margin by about a third of its thickness; 7th, 8th and 9th joints of flagellum a little longer than wide. Mandibles with 5 teeth in front and 6 smaller teeth behind. Smooth, shining, with a few scattered punctures. Profile of thorax a little convex, thoracic sutures distinct, the mesoepinotal slightly impressed. Dorsum of epinotum a little longer than the declivity, joining it by a rounded angle, convex transversely; the declivity margined. Scale of petiole twice as wide as long, rounded above, distinctly convex transversely in front, with the two faces vertical and not margined, hardly as high as the epinotum or 1st abdominal segment. The latter as high as long, and a little shorter than the 2nd. Richmond, Natal. (Traegaardh.)"

Var. SANCTA, Forel.

Loc. cit., p. 213, ♀.

♂, 3.4-3.5 mm. Dark yellowish red, the legs paler. Very similar to the type, but the body is shining and the puncturation scantier.

The eyes are smaller and placed farther forwards. The declivity of the epinotum is as long as the dorsum. 7th-10th joints of the flagellum a little wider than long.

Durban, (Arnold). (S.A.M., R.M., G.A., colls.)

PONERA TRAEGAORDHI, Santschi.

Loc. cit., p. 6, ♀.

“♀, 2.1 mm. Testaceous yellow. Frons and abdomen rusty red. Mandibles, antennae and tarsi of a lighter yellow. Shining. Head densely and finely punctured, subopaque. Piligerous puncturation finer on the thorax and petiole than on the abdomen. Pubescence short, not abundant and not hiding the sculpture, somewhat erect on the thorax. Pilosity scanty, absent from the legs. Head rectangular, the sides subparallel, occipital margin straight, nearly one-quarter longer than wide. Eyes indistinct, reduced to a small spot on the anterior fourth of the head. Clypeal carina rounded, especially in front; anterior margin of clypeus arcuate. The scape does not reach the occipital margin, being short of it by a length equal to its thickness; 3rd-10th joints of the flagellum distinctly wider than long. Mandibles smooth, shining, sparsely punctured, with 9 or 10 teeth. Profile of thorax evenly and moderately convex from front to back; promesonotal suture distinct. Declivity of epinotum flat, distinctly margined. Pronotum with moderately distinct shoulders. Scale of petiole two and a half times wider than long, the summit transversely convex in front, feebly concave behind, nearly as thick above as below. The summit has a slightly convex surface, distinctly delimited from the anterior and posterior faces, as high as the 1st abdominal segment. The latter is higher and wider than long, shorter than the 2nd segment.”

Pietermaritzburg (Traegaordh).

PONERA DULCIS, Forel, var. UNCTA, Santschi.

Loc. cit., p. 7, ♀.

“♀, 2.5 mm. Reddish yellow. Mandibles, antennae, tarsi, petiole and anus yellow. Very shining. Puncturation more sparse than in the type, the pronotum below finely reticulate. Pubescence a little feebler. The head is a little wider, the sides more convex; the scape extends a little beyond the straight occipital margin. The flagellum is longer. Clypeus more elongate, strongly carinate, and very distinctly defined posteriorly. Mandibles smooth, shining, very finely and sparsely punctured, the masticatory margin with 3 little

teeth in front and about a dozen denticulations behind. The single-faceted eyes are very distinct, and placed in front of the anterior fourth of the head. Promesonotum slightly more convex than in the type, but less than in *coarctata*, race *boerorum*, Forel. Epinotum as in the type species. Scale of petiole a little thicker below, and rather convex in front, but the summit is as thin as in *dulcis*, i. sp., and its margin is slightly rounded transversely. The 1st abdominal segment is shorter. Otherwise similar to the type."

Dukudu, Zululand. (Traegaardh); in moss.

PONERA COARCTATA, Latr., race NATALENSIS, Santschi.

Loc. cit., p. 7, ♀.

"♀, 2.7 mm. Testaceous red, with a brown spot on the middle of the frons. Mandibles, antennae, tarsi and anus yellowish. Slightly shining, especially the angles of the head and the sides of the body. A little more finely punctured than *coarctata*, especially on the sides of the thorax where the puncturation is very scattered; a few longitudinal striae on the sides of the metasternum. The yellowish pubescence is more abundant but shorter than in *coarctata*. Erect pilosity moderately abundant on the body, especially the abdomen, absent from the legs (except a few hairs above the calcar). Head nearly one-quarter longer than wide, rectangular, the sides feebly convex, the posterior margin straight. Eyes composed of a single pigmented facet, placed in the anterior fourth of the sides of the head. The frontal sulcus reaches the middle of the head. Clypeus shorter than in *coarctata*, subtruncate in front, with a median and very blunt carina, which is not impressed anteriorly. The scape, relatively thick, almost reaches the occipital margin; 2nd-10th joints of the flagellum wider than long. Mandibles smooth, finely reticulate at the base, with a few piligerous punctures, and with 7 or 8 teeth, the last three very small. Thorax low and elongate, the dorsal profile feebly and regularly convex. Dorsum of the epinotum a little longer than the declivity, the junction of the two forming a very gradual curve. Thoracic sutures distinct. Scale twice as wide as long, strongly convex transversely in front, its summit feebly rounded and as large as its base; anterior and posterior faces vertical, submarginate in front; ventral lamella produced in front. Differs from the race *boerorum* by its shorter mandibles, the slightly longer scapes, the less deep mesoepinotal suture, the thicker scale and the colour."

Richmond, Natal (Traegaardh).

PLECTROCTENA MINOR, Emery, race CONJUGATA, Santschi.

Loc. cit., p. 8, ♂.

This must be sunk to a synonym of *P. mandibularis*, Smith. An examination of a specimen sent to me by the author shows that it does not differ from the small variety of *mandibularis*, which is found in the coastal regions of the eastern part of the Cape Province. The species becomes progressively larger the farther it is from the coast, and a complete transitional series can be found from the smallest (Durban, etc.) to the largest or typical *mandibularis*, such as is found in Rhodesia.

It is, therefore, also open to doubt whether the species *minor*, Emery, should be considered valid.

TRIBE LEPTOGENYINI.

LEPTOGENYS MAXILLOSA, Smith.

Bulawayo.

LEPTOGENYS INTERMEDIA, Emery.

Rend. Acc. Sc. Bologna, p. 32, ♂, 1901-2.

♂, 4.8 mm. Black; legs dark brown, mandibles, flagellum, tarsi and apex of abdomen ferruginous, the articulations of the legs, and the base of all the femora and tibiae paler. Smooth and very shining, almost impunctate. A very fine, short and sparse pubescence on the head, thorax, petiole, and legs, the pubescence on the abdomen a little longer; a few pilose hairs on the clypeus. Head as wide in front as behind, or only very little wider, the posterior margin convex. Very similar to *nitida*, Smith, from which it differs by the smaller size, the narrower and convex hind margin of the head, and the relatively shorter petiole, which has the anterior half very little narrower than the posterior (distinctly narrower in *nitida*).

Durban, (Cooper, Marley).

(S.A.M., R.M., G.A. colls.)

LEPTOGENYS HAVILANDI, Forel, race FURTIVA, n. r.

♂, 6.5-6.8 mm. Sculpture of the head much finer than in the type of the species, reticulate-punctate, the punctures shallow and irregular, not distinct and sharply defined, with smooth spaces in between as in the type of the species. The sculpture of the thorax like that of the head and much finer than in the type. In the latter the pronotum has some shallow grooves radiating out from a median point just in

front of the posterior margin, these are entirely absent in the race. Both thoracic sutures much deeper. The dorsum of the epinotum is shorter than in the type of the species, and is distinctly but moderately convex lengthwise, (almost flat in the type), and its junction with the declivity is more angular and abrupt. The declivity is two-thirds as long as the dorsum, (barely one-half in the type of the species), and is strongly striated transversely. Node of petiole narrowed in front and less convex transversely above. First two abdominal segments very closely and finely reticulate rugulose and dull (smooth and shining in the type of the species), 3rd segment and following segments shining, the 3rd shallowly and closely punctured. Epinotum, node and abdomen with an abundant, long and decumbent pubescence (almost entirely absent in the type of the species). Head, thorax and node dull (the node is moderately shining in the type of the species).

Hillside, Bulawayo. Marching in single file, carrying termites in their jaws.

(S.A.M., R.M., G.A. colls. ; type in my collection.)

Having seen specimens of *Havilandi*, i. sp., (*leg.* Haviland, *ex* Natal Mus. coll.), I am able to confirm the disparity between that species and *Peringueyi*.

LEPTOGENYS PERINGUEYI Forel.

Page 97, line 16. For "1st joint" read 2nd joint.

LEPTOGENYS ATTENUATA Smith.

Page 97, *L. Jägerskiöldi*, Santschi. This is only a synonym of *L. attenuata*, Smith, (Santschi, emend. Ann. Soc. Ent. France, vol. 85, page 279, 1916).

LEPTOGENYS ATTENUATA, Smith, var. CRASSINODA, n. v.

♂, 6.8–7 mm. Smaller than the type of the species and differing as follows. The head is much less narrowed behind, being barely narrower there than in front. The scapes are a little shorter, all the joints of the flagellum also shorter, the 2nd joint one-sixth longer than the 1st (one-third longer in the type of the species ; erroneously stated on p. 98 as two-thirds longer). Node of petiole much shorter and much less attenuated in front. It is only one-third longer than wide, and three-fifths wider behind than in front, about as high behind as long (much longer than high in the type of the species). Pilosity on the abdomen scantier, otherwise like the type of the species.

East London (Dr. Rattray). Type in the Albany Museum coll. (G.A. coll.)

LEPTOGENYS NITIDA, Smith.

♀, (hitherto undescribed), 6.1 mm. Ergatoid.

Mesonotum more or less circular, a little wider than long, three-fifths as long as the pronotum. Posteriorly the mesonotum is separated by a wide and convex groove from the small and transversely oval scutellum. A trace of the metanotum is visible only at the sides. The metaepinotal suture wider and much deeper than in the ♀. Dorsum of epinotum slightly widened posteriorly, convex lengthwise, about one-half longer than the declivity, which is transversely striated. Petiole inclined forwards, three-fourths wider than long, widest behind, much higher than in the ♀, the anterior face feebly convex, the posterior face concave. Abdomen like that of the ♀ but proportionately stouter. Otherwise like the ♀.

Eshowe, Zululand, (H. B. Marley), taken with the ♂♂. Type in my coll.

LEPTOGENYS NITIDA, var. GRANDIOR, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 335, ♂, 1914.

♂, 5.5–6 mm. Larger and darker than the type of the species, almost jet-black. The head is relatively wider, and is as wide behind as in front (narrower behind in the type). The node of the petiole is a little wider behind than long (as wide as long in the type), and more convex above, the anterior and posterior faces more convex lengthwise. Otherwise like the type of the species.

Krantz Kloof, Natal, (H. B. Marley).

(S.A.M., R.M., G.A. colls.)

LEPTOGENYS NITIDA, Smith, var. AENA, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 215, 1914.

The pale form has been separated by Dr. Forel as a distinct variety, *aena*. In addition to the colour, it differs from the type of the species in having the head a little narrower, especially behind, where it is a little narrower than in front. The eyes are smaller and flatter, the scapes a little longer. The key on page 95, (12) 11 . . ., should be altered accordingly.

LEPTOGENYS NITIDA, var. ADPRESSA, Forel.

Loc. cit., p. 214, ♂.

♂, 5 mm. The legs are entirely pale ferruginous, the scapes brownish, not black as in the type. The pubescence is decumbent, not erect.

The eyes are decidedly smaller. The head is slightly wider in front. The thoracic sutures stronger; the dorsum of the epinotum a little shorter and the declivity longer and more oblique than in the type species. The node of the petiole is also distinctly shorter and wider than in the type, one-third wider behind than long, (as wide behind as it is long, in the type). Grahamstown, Hewitt, (G.A. coll.).

From Durban, (*leg.* Marley), I have received some specimens intermediate between this variety and the type and *intermedia*, Emery. They are smaller (4.3 mm.) than the variety, and have the node a little longer, but not so long as in the type or in *intermedia*. *Nitida* and *intermedia* are evidently very closely allied.

L. NITIDA, race BREVINODIS, Forel.

Loc. cit., p. 335, ♀.

♀, 5.5-5.3 mm. Varying from dark reddish brown to piceous, the head and abdomen darkest. Legs and antennae entirely reddish ochreous. Mandibles ferruginous. Head less narrowed behind than in the type of the species, almost as wide there as in front. Dorsum of epinotum a little shorter and the declivity a little longer. Node of the petiole much wider than in the type of the species, one and a half times wider than long, one-third wider behind than in front. Otherwise like the type of the species.

George, Cape Prov., (Brauns).
(R.M., G.A. colls.).

L. NITIDA, race INSINUATA, Santschi.

Göteborgs Vetens. Vitterh. Handl., 15, 2, p. 11, ♀, 1914.

“♀, 4.6 mm. Blackish brown. Mandibles, middle of the frons, antennae, legs and anus reddish yellow. Smooth and shining like the type of the species. The head is about one-quarter narrower behind than in front, twice as long as wide behind. The eyes are placed a little more forwards, and the clypeus is more angular in front. The scape extends beyond the occipital margin by about one-fourth of its length, (one-sixth in the type). The wider mesoepinotal suture extends over the side to behind the middle pair of coxae, and is coarsely clathrate. Declivity of epinotum transversely striate. The node of the petiole is a little higher behind. First abdominal segment very narrow in front, longer than wide, the 2nd segment narrower and as long. Otherwise like *nitida*, from which it differs chiefly by the shape of the head and the meso-epinotal suture.”

Richmond, Natal, (Traegaardh).

L. PARVA, var. *DISPAR*, Santschi.

Göteborgs Vetens. Vitterh. Handl., vol. 15, pt. 2, p. 10, ♀, 1914.

"The eyes are larger than in the type, composed of about 28-30 facets. The scape extends slightly beyond the occiput, but much less than in *L. castanea*. The 2-10th joints of the flagellum as wide as long. The dorsum of the thorax is feebly emarginate; the head is a little longer than wide and fairly convex behind, transitional to that of *castanea*."

Zululand, (Traegaardh).

L. PARVA, Forel, var. *BELLUA*, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 214, ♀, 1914.

♀, 3.5-3.9 mm. Differs from the type of the species by its slightly longer head, with the posterior margin almost straight or more shallowly concave. The 4th-10th joints of the flagellum are a shade wider. The node of the petiole is slightly longer, or one and a half times wider behind than it is long (one and two-thirds in the type). The declivity of the epinotum is shorter, more oblique and less angular below.

Durban, (Arnold, Marley, Cooper and Bevis).

(S.A.M., R.M., G.A. colls.)

♀, (hitherto undescribed), 5 mm. Ergatoid. Piceous, the apical margins of the abdominal segments ferruginous, legs and antennae brownish yellow, the femora and apical half of the scapes darker. Pilosity longer and more abundant than in the ♀. Head distinctly wider in front than behind, the posterior margin moderately concave, the posterior angles less rounded than in the ♀. Eyes larger; the anterior ocellus is well developed and is placed at about the posterior fourth of the head, (measured from the apex of the clypeus). Pronotum one-third wider than long, (longer than wide in the ♀). Mesonotum only a little wider than long, (twice wider than long in the ♀). Dorsum of epinotum merging into the declivity by a very gradual curve; it is very little longer than the declivity, (in the ♀ at least twice as long), and the dorsal profile is much more convex. The node of the petiole is wider and shorter, and slants strongly forwards; it is three times wider than long, (in the ♀ only a trifle wider than long); the anterior face is convex transversely and subvertical, the posterior face vertical. The abdomen is much wider than in the ♀, the 1st segment being quite twice as wide as the node and subtruncate at the base, slanting slightly forwards. Otherwise like the ♀.

Taken with ♂♀. Krantz Kloof, Natal, (Marley). In my collection.

TRIBE ODONTOMACHINI.

ANOCHEtus BEQUAERTI, Forel, race ABSTRACTA, Santschi.

Göteborgs Vetens. Vitterh. Handl., vol. 15, pt. 2, p. 12, ♀, 1914.

The only differences which I can recognise, to judge from the author's detailed description, are the slightly smaller size, (4.6 mm.), the larger eyes, which are one-fifth the length of the sides of the head, and the darker colour of the middle of the head above. Otherwise exactly like the type of the species.

Amanzimtoti, Natal, (Traegaordh).

ANOCHEtus PUNCTATUS, Santschi.

Loc. cit., p. 13, ♀.

“♀, 3.6 mm. Reddish brown; head and femora yellowish red, the rest of the legs and the flagellum yellowish. The greater part of the head, the dorsum of the promesonotum, and abdomen irregularly and fairly strongly punctured, smooth and shining. Antennal hollows, cheeks, sides of the thorax and the scale smooth and shining. Dorsum of the epinotum coarsely, the declivity superficially striato-rugose transversely. The vertex of the head, from the frontal carinae backwards, is fanwise striated as far as the middle of the head, the outermost striae curving round behind the antennal hollow and becoming extinguished at about the level of the eyes. A short pubescent hair is inserted in each puncture. Antennae and legs pubescent, the abdomen with a long and erect pilosity. Head a little longer than wide, feebly emarginate behind. Eyes moderately convex, composed of 25–30 facets. Clypeus triangular, its anterior margin transverse, prolonged backwards in a narrow strip between the frontal carinae. Mandibles half as long as the head, dilated in their distal half, the superior internal border trenchant, not dentate, margined with a row of piligerous punctures; the inferior internal margin very finely and distantly denticulate. The upper and lower apical teeth subequal, the intermediate inserted at the basal third of the lower tooth, short and obtuse. The scape extends back as far as the posterior angle of the head, 3rd–5th joints of the flagellum as wide as long, the succeeding joints distinctly longer (shorter in *punctaticeps*, Mayr.). Thoracic sutures well defined. The mesonotum is wider than long and slightly raised in front behind the promesonotal suture, which is somewhat impressed. Dorsum of epinotum flat, submarginate, parallel-sided in the anterior half, divergent behind towards the teeth, which are fairly

strong and obtuse. Declivity marginate, slightly convex. Scale oval, the summit truncate and distinctly emarginate (rounded in *punctaticeps*). Abdomen barely constricted between the 1st and 2nd segments. This species is closely allied to *punctaticeps*, Mayr, which is not known to me in nature. It differs by the stronger puncturation of the thorax and by the other characters cited above. In *talpa*, Forel, the eyes are much smaller."

Lake Sibayi, Zululand, 1 ♀, (Traegaardh); Durban (Arnold).

Var. DURBANENSIS, n. v.

♀, agrees with the description of the type species except in the following details.

The mandibles are a little less than half the length of the head; the 3rd and 4th joints of the flagellum are wider than long, the 5th as wide as long, and the scale of the petiole above is convex transversely, not emarginate.

Durban, 1, ♀. Type in my collection.

ANOCETUS NATALENSIS n. sp.

♀, 5.9 mm. Head, mandibles and antennae dark reddish amber-yellow, coxae, trochanters and femora pale straw-yellow, tibiae and tarsi pale reddish ochreous, thorax and abdomen castaneous brown, the abdomen sometimes almost piceous. An abundant, exceedingly fine and decumbent pubescence present only on the legs and antennae, the mandibles with a sparse pubescence, the abdomen with a very scanty, yellowish, exserted and fairly long pilosity, the rest of the body glabrous. Shining all over, except the striated area of the head which is slightly dull, the abdomen smooth and very shining. Middle of the head above finely and longitudinally striate, the striae starting at the apex of the frontal carinae and extending fanwise backwards, in the middle almost as far as the occipital margin, at the sides as far as the upper third of the postocular hollows, the antennal hollows and the rest of the head quite smooth. Pronotum transversely and superficially rugulose over the neck and just behind it, the rest of the segment longitudinally and also somewhat concentrically rugulose, the sculpture exceedingly superficial or almost effaced. Mesonotum strongly and transversely striate. Epinotum almost smooth, the dorsum only microscopically reticulate, the sides feebly and obliquely rugulose on their upper half, the sculpture almost effaced like that of the pronotum. Scale smooth. Head, excluding the mandibles but

including the occipital lobes, one-fifth longer than wide across the eyes, where it is widest. Antennal hollows deep, deeper than in *A. Bequaerti*, and distinctly delimited behind by the striated sculpture. Clypeus as in *Bequaerti*, but a little more deeply emarginate in front. Mandibles half as long as the head, the upper and lower inner margins straight and unarmed, the upper apical tooth very little shorter than the lower one, the latter with a smaller tooth on its upper edge which is half as long as the lower tooth. Second, 3rd and 4th joints of the flagellum of equal length, the 2nd joint twice as long as wide and two-thirds as long as the 1st, all the joints considerably longer than wide. Eyes fairly large, relatively larger and more convex than in *Bequaerti*. Occipital emargination deep, nearly one-third as deep as wide. Pronotum, excluding the neck, as long as wide; promesonotal and mesoepinotal sutures wide but shallow. Mesonotum nearly one and a half times wider than long. Dorsum of epinotum, (including the metanotal region which is indicated only by a feeble transverse impression at the anterior 3rd of the epinotum), straight, slightly oblique lengthwise, feebly convex from side to side, nearly three times longer than wide, parallel-sided or only very slightly widened posteriorly, where it ends on each side in a triangular and dentiform tubercle; declivity subvertical, one-third the length of the dorsum. Scale of petiole cuneiform, one-fourth higher than the petiole is long and higher than the brow of the declivity, twice as high as wide, the sides almost straight or only very feebly convex, the upper edge fairly thin and shallowly emarginate in the middle, the anterior face convex from side to side, straight and oblique from above to below, the posterior face flat and vertical.

Pietermaritzburg (Dr. C. Akerman), 3 ♂♂, *ex Natal Mus. coll.*

Allied to *africanus*, Mayr, and *Traegaordhi*, Mayr. From the first it differs by the almost smooth pro- and epinotum and the longer 2nd joint of the flagellum; from *Traegaordhi* it differs by having the inner, upper and lower margins of the mandibles edentate, by the epinotum (transversely striato-rugose in *Traegaordhi*), and by the darker colour.

Type in my collection.

A. JONESI, n. sp.

♂, 4.5-4.8 mm. Yellowish brown, (raw sienna); the thorax, antennae and mandibles somewhat darker and with a reddish brown tinge. Smooth and very shining. The head above sparsely but strongly punctured, except in the middle of the vertex. The sides of

the head and the antennal hollows impunctate. The frons between the frontal carinae fanwise longitudinally striate, the striae curving round outwardly, but laterally not extending to the outer edge of the antennal hollows, and posteriorly not beyond the anterior half of the head. Mandibles sparsely and finely punctured, the scapes very finely so. Dorsum of epinotum superficially coriaceous; otherwise impunctate. A sparse, yellowish, and short pilosity present all over, very scanty on the thorax. A very scanty pubescence on the mandibles.

Head, excluding the mandibles, one-sixth longer than wide across the level of the eyes, where it is widest; it is, however, not wider there than across the occipital lobes by more than the length of the 1st joint of the flagellum. The sides of the head behind the eyes more deeply excavated than in *punctaticeps*, the occipital emargination as deep as in that species. Clypeus and frontal carinae as in *punctaticeps*. Mandibles half as long as the head, their internal inferior margin very feebly and obtusely denticulate, their superior margins edentate, fairly strongly widened towards the apex, being nearly twice as wide behind the teeth as at their base.



FIG. 61.—*A. Jonesi*, n. sp.

The upper or preapical tooth is as long and as acute as the apical, and the subapical, which springs from the base of the apical is about half as long as the other two. The scapes extend back as far as the apex of the occipital emargination, but do not reach as far as the posterior angles of the head; 3rd–5th joints of the flagellum about as long as wide, all the rest longer than wide. Eyes small, not longer than the 3rd joint of the flagellum, composed of about 15–18 indistinct facets. Pronotum narrower and more elliptical in front than in *punctaticeps*, as long as wide. The promesonotal and mesoeponotal sutures shallow but very broad. The mesonotum (excluding the suture) about half as wide again as long (at least twice as wide as long in *punctaticeps*). The dorsum of the epinotum is as long as the pronotum, much narrower at the base than at the apex (shaped like an isosceles triangle), more convex transversely in its basal half than in *punctaticeps*, and ending in stronger and more prominent teeth than in that species; the declivity is vertical, shorter than the dorsum (at least as long in *punctaticeps*). The node of the petiole cuneiform in profile, its anterior face feebly convex transversely, the posterior face flat, its upper edge feebly arcuate, and thicker than in *punctaticeps*. Seen from in front, the node is barely narrower above than below; seen from the side, it is about three-

quarters higher than wide at the base ; the ventral lamella is produced into a blunt triangular tooth. Abdominal constriction feeble.

♀, 4·8 mm. Dorsum of epinotum more strongly sculptured than in the ♂, or transversely rugose. Mesonotum trapezoidal, widest in front, as long as wide. Scutellum oval, slightly wider than long and less than half as long as the mesonotum. A distinct and narrow metanotum present. Dorsum of epinotum one-third longer than wide, but little wider across the teeth than at the base. The teeth a little more acute than in the ♂. (Deälated.) Otherwise exactly like the ♂.

♂, 3·3 mm. Black ; legs and first two joints of the antennae pale ochreous, the rest of the antennae, the clypeus and mandibles pale yellowish brown. Head and thorax dull, coriaceous-reticulate, sides and declivity of epinotum and node of petiole smooth and shining, abdomen shining, very shallowly punctured. Pubescence pale ochreous, fairly dense all over except on the epinotum and petiole, intermixed on the abdomen with a few longer and darker hairs.

Head, seen from in front, semicircular, the eyes occupying the anterior half of the sides. Scapes half as long again as the 1st joint of the flagellum. This joint is as long as wide, all the other joints much longer than wide. The scapes extend laterally barely beyond the inner margin of the eyes. Clypeus obtusely carinate. Mandibles very small or atrophied. Pronotum slightly exposed above. Mesonotum wider than long, strongly convex above and in front. Scutellum gibbous, less than half as long as the mesonotum. Metanotum acuminate in the middle. Dorsum and declivity of epinotum oblique, subequal, the dorsum ending on each side in a flattened and inconspicuous tubercle. Node of petiole highest behind, as high as long, the anterior face oblique, quadrate and twice as long as the vertical posterior face ; the dorsal edge thick and rounded from front to back. Wings smoky hyaline, nervures and stigma brown.

Allied to *puncticeps*, Mayr, and *punctatus*, Santschi, but larger, darker and differently sculptured.

M'fongosi, Zululand (W. E. Jones), ex Natal Museum coll.

(S.A.M., R.M., G.A. colls. Types in my collection.)

ODONTOMACHUS ASSINIENSIS, Emery, race CAFFRORUM, Santschi.

Ann. Soc. Ent. France, vol. 60, p. 558, ♀, 1891.

(race) Göteborgs Vetens. Vitterh. Handl., vol. 15, 2, p. 14, ♀, 1914.

The description of the type of the species is as follows :—

“ ♀, 13 mm. long including the mandibles ; the latter 2·3 mm. long ; head 3·5 by 2·3.

Dark testaceous, the head in front and the thorax behind fuscous, mandibles, petiole and apex of abdomen blackish. Head striated above, the striae on the frons finer, exceedingly delicate and superficial on the sides of the occiput, almost obsolete on the antennal and postocular hollows, the occipital sulcus absent, the occipital suture fairly distinct, the margin of the occiput very slightly raised; inner margins of the mandibles denticulate, the preapical tooth broad, truncate and shorter than the apical; 1st joint of the flagellum shortest, the 2nd longest, distinctly longer than the following. Thorax moderately robust, transversely striate. Petiole and abdomen very shining. . . . The whole of the upper surface of the head is striated, as in *haematodes*, but the striae are stronger and farther apart than in that species, easily defined under a low magnification, . . . the posterior part of the head appears somewhat shining to the naked eye, whereas in *haematodes* the whole of the head is dull, with a somewhat silky sheen. Abyssinia."

The race *caffrorum* is distinguished as follows:

"♀, 13 mm. Length of the head, including the mandibles, 5 mm., widest across the eyes, 2.5 mm. Posterior tibiae, 3 mm. long. The striae on the head are much less transverse behind than in *assiniensis*, i. sp., and are intermediate in character between that species and *haematodes*. On the pronotum the striae are absolutely transverse as in the type of the species, but they are a little coarser, although becoming effaced behind. Colour as in the type. The head is much larger, the mandibles clearly larger. The scape does not extend beyond the occiput. Thorax more robust, with a longitudinal groove extending over the whole of the dorsum of the epinotum. The latter is flatter and less convex than in the type."

Dukudu, Zululand, (Traegaardh); Amatongas Forest, Portuguese East Africa, (Arnold).

(S.A.M., R.M., G.A. colls.)

In neither Emery's description of the type, nor in Santschi's of the race is the structure of the petiole mentioned. This is of far greater diagnostic value than the sculpture, which is exceedingly variable. The petiole in *caffrorum* is thinner and narrower than in *haematodes*,

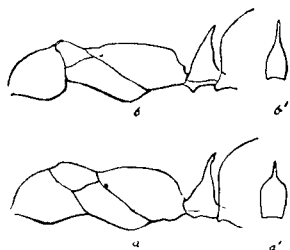


FIG. 62.

a, *O. haematodes*. ♀
b, *O. assiniensis*, race *caffrorum*.
a' and b', front view of the petiole.

and seen from in front is far more gradually acuminate than in that species. I therefore give figures of the thoraces and petiole of the two forms. The sculpture of the pronotum, even in examples from the same nest, varies between the two extremes of being transverse or longitudinal, the posterior striae becoming more and more arcuate anteriorly till at last they occupy a median and longitudinal position, the anterior striae being arranged more or less concentrically and outside them.

DORYLINAE.

Page 110, line 26. For "Membracid" read, Fulgorid.

Page 113, first line after the key, this should read, "The *Dorylini* and *Ecitini* are the only tribes represented in South Africa."

TRIBE DORYLINI.

DORYLUS BRAUNSI, Emery, p. 120. This should read,
D. BRAUNSI, Emery, race ANCEPS, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 215, 1914.

Dr. Forel's description is reproduced herewith.

"Distinguished from the type as follows: The head is distinctly of a reversed trapeze-shape, much narrower behind than in front. Its posterior margin is about one-third narrower than the anterior, even in the smallest ♂♂ it is a little narrower. The thorax is much less flattened above, hardly very obtusely submarginate. Seen in profile, the pronotum in front and the epinotum behind are convex, and pass into the dorsum by a much more gentle curve. The petiole is wider, one and a half times wider than long; its angles less rounded. The 2nd-9th joints of the flagellum are at the most only one and a half times wider than long (at least twice as wide as long in the type of *braunsi*). Moreover, the puncturation of the head, although sparse, is much more distinct; that of the thorax is also a little stronger, whereas that of the petiole, which is a little more shining than in the type, is less dense."

DORYLUS DIADEMA, Gerst., race ARNOLDI, Forel.

Loc. cit., p. 216, ♂.

♂, 22 mm. Dark ochreous yellow, the thorax slightly fuscous, the genital armature and the apical margins of all the abdominal segments darker, somewhat reddish. Head blackish brown, eyes black; mandibles and legs bright castaneous brown; antennae ferruginous, paler towards the apex.

"In greater part like the type, but differing in the following features. The posterior margin of the head is strongly convex; the eyes are smaller and less convex. The head is not wider than the thorax. The petiole is wider and shorter than in the type, nearly one and a half times wider than long. The colour of the thorax and wings is also darker. It differs from *montanus*, Sants., by the total absence of an erect pilosity, on the abdomen as well as on the thorax and petiole. Moreover, it differs from *montanus* and from the type of *diadema* by its genital armature. The stipes are not truncate at the apex as in *montanus*, but bevelled, almost as in *diadema*. The volsellae bear on one side a row of hairs and are slightly widened at the apex, which are strongly punctured and truncate curvedly. The sagittae are also somewhat swollen at the apex, which ends below in a sharp point. The subgenital plate has the same shape as in *montanus*."

Bulawayo; fairly common at light.

(S.A.M., R.M., G.A., colls.)

DORYLUS (s.g. *ALAOPONE*) *MONTANUS*, race *AUSTRALIS*, Santschi.

Rev. Zool. Afr., vol. 6, fasc. 3, p. 231, ♂, 1919.

"♂, *media minor*, 3.5 mm. Differs from the type of the species of the same size by the absence of the longitudinal frontal impression. The thorax is a little less coarsely punctured. The middle joints of the flagellum are a little thicker. The petiole is wider and angular, as wide behind as long, its posterior margin a little narrower than the front of the postpetiole. (Distinctly narrower than the postpetiole and more rounded in *montanus*.) In the ♂ 4.6 mm. long, the front of the pronotum has a fundamental sculpture which is very finely reticulate and less shining than the rest of the thorax. The head is a little more robust and less parallel. The head is also slightly more rusty red, the whole insect darker. The abdomen is a little wider and shorter.

♀, *minor*, 2 mm. Like the ♀ *minor* of *atriceps aegyptiaca*, pale yellow; antennae 9-jointed.

Probably larger forms of the ♀ exist.

Herschel dist., Cape Prov., *ex* Albany Mus. coll."

DOLICHODERINAE.

TRIBE TAPINOMINI.

TAPINOMA *ARNOLDI*, Forel, var. *TECTUM*, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 288, ♂, 1916.

♂, 1.5-1.8 mm. Pale ochreous, the posterior femora slightly smoky yellow. Smaller and more slender than the type of the species. The

head is also relatively narrower, or one-fourth longer than wide, and with quite straight sides. The eyes are nearer the anterior margin, their distance from the same being less than their own length. Otherwise like the type of the species.

Durban, (H. B. Marley) ; Pretoria, (C. K. Brain).
(R.M., G.A. colls.)

In the author's original description, this insect has been made a variety of *T. tenue*, Forel. The latter name is due to a slip of the pen and should read *T. Arnoldi* (Santschi emend. in litt.).

TAPINOMA LUGUBRE, Santschi.

(as var. of *T. gracilis*, Forel), *loc. cit.*, p. 288, ♀, ♂.

♀, 1.6–1.8 mm. Sepia-brown, the legs and antennae smoky yellow, the tarsi very pale straw-yellow. Slightly shining. Microscopically

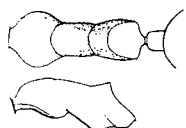


FIG. 63.
T. lugubre, Santschi.

reticulate-rugulose. Pubescence greyish, decumbent, microscopic and fairly abundant all over. Pilose hairs absent, except a few on the abdomen and anterior margin of the clypeus. Head a little less than one-third longer than wide, slightly narrowed in front, the sides feebly convex, the posterior margin very slightly convex. The middle of the anterior margin of the clypeus shallowly concave. Mandibles 6-dentate, shining, punctured. Eyes large, placed in front of the middle of the sides. The scapes extend beyond the hind margin of the head by nearly one-fourth of their length; all the joints of the flagellum at least twice as long as wide. Pronotum wider than long, and as long as the mesonotum. The latter is slightly longer than wide in front, much narrower and with a higher convexity transversely than in *gracilis*, Forel, also narrower behind (in *gracilis* as wide in front as behind and nearly flat above). The dorsum of the epinotum is a little wider than long, and is as convex as the mesonotum; it rises gently towards the declivity. The declivity is nearly vertical, almost twice as long as the dorsum, and separated from it by a fine raised line, the junction of the two faces sharply angular. Scale parallel-sided, oblong.

♂, 1.8 mm. Blackish brown, legs and antennae coloured as in the ♀. Head longer than wide, subquadrate, slightly wider in front than behind. The eyes occupy a little less than the anterior half of the sides. Anterior margin of the clypeus entire, arcuate. Mandibles with an

apical tooth only. The scapes are as long as the 1st and 2nd joints of the flagellum united; the 1st joint is one and a half times longer than wide, shorter than the following joints. Mesonotum a little wider than long, somewhat gibbous in front, its anterior margin semi-circular. Scutellum roundly triangular. Epinotum as long as wide at the base, the two faces not distinctly delimited but forming a very low and continuous convexity. Petiole nodose, two-thirds wider than long, convex transversely. Wings slightly infusate, nervures brown.

Victoria Falls.

Quite distinct from *gracilis*, Forel, a narrower and smaller insect, with the dorsum of the thorax not in the least flattened as in that species, and with the two faces of the epinotum sharply delimited.

(R.M., G.A. colls.)

TAPINOMA MINIMUM, Mayr.

Ann. K. K. N. H. Mus. Wien, vol. 10, p. 147, ♂, ♀, 1895.

♂, 1.2-1.4 mm. Varying from pale ochreous or pale reddish ochreous to pale yellowish sepia-brown. Pilosity present only on the clypeus and mandibles. Pubescence pale yellowish, decumbent, microscopic and not very dense. Moderately shining, smooth or with only a microscopic sculpture. Head slightly longer than wide, the sides moderately convex, a little narrower in front than behind, the posterior margin almost straight. Anterior margin of clypeus straight. Mandibles smooth, with 6 or 7 teeth. Eyes not very small; distant from the anterior margin of the head by as much as their own length. The scapes fall short of the hind margin by about as much as the length of the eye; 2nd-7th joints of the flagellum much wider than long. Pronotum, excluding the neck, one-third wider than long, its sides fairly convex, longer than the mesonotum. The latter trapezoidal, widest in front, one-fourth wider than long, the promesonotal suture moderately arcuate, the mesoepinotal suture straight. Dorsum of epinotum widened towards the apex, where it is half as wide again as long, only half as long as the steep declivity. The thoracic sutures very feebly impressed. The scale (entirely hidden by the overhanging abdomen) is longer than wide, narrowed above, ovate-lanceolate.

Zululand, (Traegaardh); Port Elizabeth, (T. Reeve); Natal, (Haviland).

(R.M., G.A. colls.)

TAPINOMA DANITSCHI, Forel.

Bull. Soc. Vaud. Sc. Nat., vol. 50, p. 345, ♂, 1914.

♂, 1.2–1.7 mm. Varying from dark sepia-brown to brownish black, legs and antennae dark brown, tarsi pale ochreous, mandibles and scale brownish yellow. Smooth and shining, with a microscopic puncturation. Pilosity only on the anterior margin of the clypeus and the apex of the abdomen. Pubescence microscopic, very short and scanty. Head rectangular, one-fifth longer than wide, as wide in front as behind, the sides convex, the posterior margin straight. Mandibles smooth, shining, finely and very sparsely punctured. Anterior margin of clypeus feebly emarginate in the middle. The scapes fall short of the hind margin by about one-fourth of their length; all the joints of the flagellum, except the 1st and 3rd, clearly wider than long, the last joint distinctly swollen. Thorax like that of *minimum*, Mayr, but with the dorsum of the epinotum a little longer, a little wider than long and shorter than the declivity. Both thoracic sutures feeble. Scale fused with the petiole, tongue-shaped.

Durban, (C. B. Cooper); Umbilo, Natal, (L. Bevis).

(S.A.M., R.M., G.A. colls.) Closely allied to *minimum*, Mayr.

Var. BEVISI, Forel.

Loc. cit., p. 346, ♂, ♀.

♂, 1.5–2 mm. Abdomen paler than the thorax, yellowish brown. Anterior third of the head brownish, mandibles reddish yellow, otherwise coloured like the type of the species. The head is distinctly wider behind than in front, and the mesonotum is longer than in the type species, or as long as wide. Otherwise like the type.

“♀, 3.1 mm. Head very rectangular, quite one-fourth longer than wide, the posterior margin straight and the posterior angles well marked, only slightly rounded. The large flat eyes occupy nearly one-third of the sides. Flagellum a little thinner than in the ♂. Thorax hardly wider than the head; pronotum high and subvertical; abdomen elongate. Wings slightly infusate. Otherwise like the ♂.”

Durban, (C. B. Cooper).

(R.M., G.A. colls.)

MYRMICINAE.

Page 166. The ♂♂ of the *Pseudomyrmini* have 12-jointed antennae; not 13 as stated in the key.

Page 168. For “GG” read “CC.”

TRIBE PSEUDOMYRMINI.

Page 173, line 19, for "13-jointed" read "12-jointed."

TRIBE OCYMYRMICINI.

OCYMYRMEX PICARDI, Forel.

Taken at Sawmills, Umgusa River, S. Rhodesia. The nest was placed under the roots of a bush and contained hundreds of ♂♂.
(S.A.M., R.M., G.A. colls.)

TRIBE CARDIOCONDYLINI.

CARDIOCONDYLA BADONEI, n. sp.

♀, 2-2.3 mm. Black or very dark brown, the thorax and petiole sometimes reddish brown, legs and antennae pale burnt-umber brown, the club of the flagellum and the middle of all the femora a little darker. Abdomen smooth and shining; head, thorax and petiole slightly glossy. Head finely reticulate, more widely and more distinctly than in *C. Emeryi*, Forel; thorax reticulate-punctate, very closely and superficially so above, more strongly at the sides. Petiole and legs very superficially reticulate. Declivity of the epinotum smooth and shining. A very fine, short and decumbent pubescence present all over.

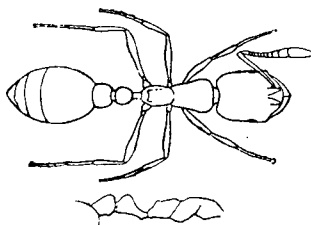


FIG. 64.
C. Badonei. ♀

Head relatively wider than in *C. Emeryi*, very little more than one-fourth longer than wide, slightly wider in front than behind, the sides straight, the posterior margin shallowly concave. Clypeus longitudinally striate in the middle, produced in front as a ledge which projects beyond the bases of the mandibles (as in *C. Emeryi*). The scapes fall short of the hind margin of the head by as much as the length of the 1st joint of the flagellum; the latter is as long as the 3 succeeding joints taken together, the 2nd-8th joints wider than long. Eyes placed in the middle of the sides of the head. Mandibles shining, sparsely punctured, striated at the base, quadridentate.

Promesonotum a little longer than wide in front, its anterior corners more rounded than in *C. Emeryi*, also less convex in profile. The mesoepinotal suture is much deeper than in *Emeryi*. Dorsum of epinotum about one and a half times longer than wide, twice as long as the declivity; the latter submarginate at the sides. The epinotum is armed with two triangular tubercles, hardly large enough

to be termed teeth (*Emeryi* has distinct and acute teeth which are a little longer than they are wide at the base). The peduncle of the 1st joint of the petiole is shorter than the node. The node is more convex at the sides than in *Emeryi*, globose when seen from above, very little longer than wide. Second joint of the petiole wider than long, half as wide again as the 1st, shaped like that of *Emeryi*. First segment of the abdomen as wide as long (in *Emeryi* much longer than wide).

Amatongas Forest, Portuguese E.A.

(S.A.M., R.M., G.A. colls. Type in my collection.)

A larger species than *Emeryi*, and with differently shaped head and stronger sculpture. The reticulate character of the sculpture on the thorax is quite sharply defined, whereas in *Emeryi* the thorax appears to be covered with very shallow and circular pits.

TRIBE SOLENOPSIDINI.

Sub-tribe MONOMORINI.

P. 204, 1st line of key. For "antennae 2-jointed" read "11-jointed (sub-genus *Mitara*, Emery)."

P. 205, No. 22. This is not *australe*, Emery, but another form, to which the name *ocellatum* may be given. See remarks farther on under *australe*.

MONOMORIUM AFRUM, André.

♀, (hitherto undescribed), 6.8 mm. The structure of this insect is exceedingly remarkable, recalling in the shape of the head and epinotum that of *Rhoptromyrmex transversinodis* ♀, and totally dissimilar to the other known ♀♀ of this genus.

Black, dull, the basal two-thirds of the 2nd and 3rd abdominal segments smooth, shining and microscopically reticulate. The rest of the body very finely and densely reticulate-punctate (much finer than in the ♀), also more or less longitudinally rugulose or striato-rugulose on the head and mesonotum above; these parts have also a shallow puncturation superimposed. Epinotum striato-rugose transversely above. The posterior faces of the two nodes similarly but less strongly sculptured. A fine, yellowish, oblique and fairly long pubescence present, not very abundant, decumbent on the legs and scapes. Pilosity yellowish, very sparse on the head and thorax, longer and more plentiful on the nodes. Apical margins of the abdominal segments with a dense tuft of long hairs at each corner. Head about as wide as long in the middle, very convex above, the sides almost parallel. Behind the ocelli the back of the head is convex and vertical, merging below into a horizontal shelf which is formed by

a backward prolongation of the posterior margin and lateral lobes. The shelf and the lobes on each side of it are deeply excavated. The lateral lobes extend outwards and far backwards and are widely truncate at their apices. Mandibles strongly and longitudinally striate, sparsely punctured, 4-dentate. Anterior margin of the clypeus emarginate in the middle, the posterior margin not defined, the clypeus ends behind in a tubercle placed just between the anterior ends of the short and parallel frontal carinae. The scapes barely extend back as far as the level of the apices of the lateral lobes. The thorax is very high, almost twice as high as wide between the parapsidal sutures, the sides vertical. The anterior half of the mesonotum is very strongly compressed, and projects forwards over the pronotum and the hind margin of the head. Seen from above, the anterior half of the mesonotum is almost cristate in the middle and semi-elliptical in outline. The sides of the mesonotum external to the parapsidal sutures are steep and form

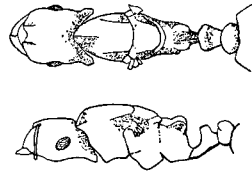


FIG. 65.
M. afrum. ♀

a distinct angle at the sutures with the flat portion above. The thorax is long and narrow, nearly three times longer than wide. The upper surface of the epinotum is concave transversely and moderately convex longitudinally. The sides of the declivity are marginate, the margins being abruptly produced above into thin, slightly divergent and more or less semicircular walls or flaps which end in front at about the middle of the epinotal dorsum. These cristate flaps are about twice as long as high. Dorsal edge of the 1st node thick and shallowly emarginate; the dorsal face of the 2nd node flat or slightly concave, two and a third times wider than long. Deälated.

Bulawayo. Seven specimens, taken with the ♂♂ in two very populous nests. So aberrant is the structure of this insect that if it had not been taken with the ♂♂, one might have regarded it as the type of a new genus. As the ♂♂ were all of one kind, I am not disposed to regard these ♀♀ as parasitic forms analogous to such a species as *Bothriomyrmex meridionalis*, which is parasitic on *Tapinoma erraticum*. Type in my collection.

MONOMORIUM TCHELICHOFI, Forel, var. EXCELSIOR, n. v.

♂, 3.2-3.5 mm. Smaller than the type of the species, and differing from it as follows:—

The feeble sculpture present in the type on the head, pronotum and

petiole is almost entirely effaced, and the surface is therefore much more shining. The mesonotum and epinotum are also much more superficially reticulate. The head is narrower, its sides less convex, the hind margin more deeply emarginate, distinctly narrower behind than in front. Antennae blackish brown, not reddish brown as in the type of the species, the joints of the flagellum more slender. The dorsum of the epinotum is narrower, or twice as long as wide, less widened behind than in the type, and also much more shallowly excavated. Nodes of the petiole narrower, the upper edge of the 1st node less rounded from front to back.

♂, 6.6 mm. Black; flagellum reddish brown, tarsi brown, articulations of the femora and tibiae reddish ochreous, apical margins of the abdominal segments brownish yellow. Head, thorax and petiole dull, closely reticulate-punctate, fairly strongly so on the head and mesonotum, very finely on the petiole. Abdomen moderately shining, microscopically reticulate, sparsely and shallowly punctured, the punctures bearing pubescent hairs. A few short rugae radiate outwards from the ocelli, and there is a slight rugosity at the base of the mesonotum. Abdomen and legs with a sparse and decumbent pubescence, absent elsewhere. Pilosity yellowish and sparse everywhere. Scapes very thick and much swollen in their apical halves, two and a quarter times longer than their apical width; flagellum densely punctured and pubescent, all the joints, except the last two, swollen in the middle; the 2nd joint nearly half as long again as the 3rd. Median area of clypeus quadrate, feebly convex or nearly flat. Mandibles shining, with 3 or 4 teeth. Eyes very slightly convex, occupying the middle third of the sides. Dorsum of epinotum very short, merging gradually into the declivity. The upper half of the declivity is reticulate-punctate and dull, concave transversely and subvertical, the lower half is vertical, smooth and shining. First node, seen from above, one and two-thirds as wide as long, the upper face shallowly emarginate; 2nd node a little wider than the 1st, two and a half times wider than long, convex from front to back, feebly concave transversely. Abdomen subglobose, a little longer than wide, very convex above, much more robust than usual in this genus. Wings hyaline, tinged with yellow in front, the costal and subcostal nervures dark brown. Quite distinct from all the other known ♂♂ of our S. African species in the structure of the flagellum.

Matroosberg, Hex River Mts., 5500-7000 feet. (R. W. E. Tucker.)

(S.A.M., R.M., G.A., colls. Type in my collection.)

MONOMORIUM HAVILANDI, Forel.

Page 216. According to Santschi, this is a race of *australe*, Emery; he separates the latter from *salamonis*, L., and places it as a distinct species under the sub-genus *Paraholcomyrmez*. (Ann. Soc. Ent. France, vol. 85, p. 282, 1916.)

MONOMORIUM SALAMONIS, Linn., var. DISERTA, Forel.

Page 221. This should be regarded as a variety of the race *termitarium* rather than of the type of the species. (Forel, Rev. Suisse Zool., vol. 24, p. 417, 1916.)

Race AUSTRALE, Forel.

Page 225. The form described under this title was so determined for me by Dr. Forel. It is, however, quite different from Emery's race, and I therefore propose for it the name *ocellatum* (race of *salamonis*). Dr. Santschi has given the following description of the true *australe*, but based chiefly on its race *Havilandi*, (see Ann. Soc. Ent. France, vol. 85, p. 283, 1916) :—

“♂ major, 2.5 mm. Reddish brown, abdomen black, slightly brownish at its base. Mandibles, clypeus, sides of the mesonotum and lower surface of the petiole reddish ochreous. Cheeks, frontal carinae and antennal pits finely striated, the rest of the head smooth, with a fairly strong but sparse puncturation. Thorax and petiole densely reticulate-punctate as in *M. salamonis* (this sculpture is more or less effaced on the promesonotum, which may be smooth and shining). Abdomen and legs smooth. Pilosity erect and yellowish, fairly abundant on the abdomen, sparser on the thorax and head. The legs and antennae have only a decumbent pubescence, which is also present on the head, and more sparsely on the body. Head a little longer than wide, the sides feebly convex, the hind margin widely concave. The head is generally wider in front than behind, but it becomes rapidly as wide in front as behind in the smaller individuals, in which it appears relatively narrower. The eyes, placed between the anterior third and the middle of the sides, are fairly flat; their long diameter is as long as the distance between them and the anterior angles of the head. Clypeus entire, strongly concave between its two carinae, which are widely separated, almost contiguous with the frontal carinae and continued at the sides into the anterior margin. Mandibles striate, 3-dentate. The scape does not quite reach the hind margin of the head. Third to 8th joints of the flagellum wider than long. The club not very thick, its 2nd joint only a little wider

and nearly as long as the preceding joint. Promesonotum convex, without distinct sutures on its dorsum. The emargination of the profile of the thorax a little weaker than in *gracillimum* (much the same as in *salamonis subopacum*, which this species resembles fairly closely in the shape of the thorax and petiole). Epinotum a little convex, passing by a gradual curve from the dorsum into the declivity. First node cuneiform, rounded above, convex below as in *minutum*, the peduncle in front shorter than the node, bearing below, near the posterior articulation, a small and obtuse tooth. Second node small, lower than the 1st, wider than long. Abdomen oval, narrower in front.

♀ *media*, 2-2.1 mm. The head elongate rectangular, the sides more parallel, with a more or less superficial reticulation on the occiput which may extend as far as the striae. The two faces of the epinotum are more distinct and more marginate.

♀ *minima*, (= var. *laeviceps*, Emery). The head is smooth and shining as in the ♀ major, narrower than in the ♀ *media*, but slightly wider behind the eyes, concave behind, the epinotum almost as much rounded as in the ♀ major, the sculpture of the thorax hardly more feeble, the joints of the flagellum a little shorter.

♀, 4.5-5 mm. The head is entirely dull, as also the 1st abdominal segment which is sculptured like the petiole. Otherwise as in *Havilandii*, Forel."

Prieska, Cape Prov., (Dr. Peringuey).

MONOMORIUM ALBOPILOSUM, Emery, race PAUCIPILOSUM, Santschi.

Rev. Zool. Afr., vol. 6, p. 235, ♀, 1919.

♀, 3.2-3.5 mm. Reddish brown, the head a little darker, abdomen brown. More feebly sculptured than the type of the species, and more shining. Pilosity as in the type of the species but much scantier, especially on the head and thorax. Posterior angles of the head slightly more rounded. First node of the petiole more conical, the apex less rounded.

Natal, (*leg.* Haviland), *ex* Natal Mus. coll.

(R.M., G.A. colls.)

Var. CLARITHORAX, Santschi.

Loc. cit., p. 235.

In my opinion this is only a discoloured form of the type of the species, the colour having been lost owing to the long immersion in alcohol. (*leg.* Haviland, Natal, 1894.)

M. salamonis, race *Junodi*, var. *opacior*, Forel. Santschi (*loc. cit.*, p. 235) expresses the opinion that the species described in this monograph on page 220 is too large to agree with *opacior*. However, it is to be remarked that these specimens were named for me by Dr. Forel himself. The size varies between 2.8 and 3.4 mm., and the larger specimens cannot be referred to the var. *notula* of *setuliferum* as suggested by Santschi. The var. *notula* has a shorter head and a differently shaped thorax.

MONOMORIUM LENE, Santschi.

Ann. S. E. Belg., vol. 60, p. 11, ♀, 1920.

♀, 1.2-2.2 mm. Pale ochreous, the head and apex of abdomen slightly fuscous ochreous. Smooth and shining. Pilosity pale yellowish, long, and not abundant. Head, legs, and antennae sparsely pubescent. Head, including the mandibles, about one-fourth longer than wide, the sides feebly convex, the posterior margin shallowly concave (not straight as stated in Santschi's description). Median area of clypeus longer than wide in front, distinctly bicarinate, the anterior margin almost straight. Frontal carinae very short. The scape falls short of the occipital margin by nearly twice the length of the 1st joint of the flagellum. The 2nd joint of the latter is as long as wide, the 3rd-7th wider than long. Promesonotum moderately convex, the promesonotal suture obsolete above, the mesoepinotal suture deep. Dorsum of epinotum fairly flat lengthwise, moderately convex transversely, about one-third longer than wide, fully half as long again as the declivity. In profile, the dorsum and declivity form a continuous curve. First node of petiole subconical, higher than long below, one-third longer than its peduncle, rounded above. Second node lower than, and not wider than the 1st, transversely oval, about one-third wider than long.

Salisbury, S. R. (*leg* R. W. Tucker), *ex*. S. A. Mus. coll.
(S.A.M., R.M., G.A. colls.) Type in coll. Santschi.

MONOMORIUM (LAMPROMYRMEX) ROTUNDATUM, Santschi.

Loc. cit., p. 14, ♀.

“♀, 1.5-1.6 mm. Slightly brownish yellow. The abdomen slightly fuscous at the sides and apex. Smooth and shining. Erect pilosity very sparse. A moderate pubescence on the legs and antennae, rare on the body. Head nearly one-fourth longer than wide, the sides feebly convex, the posterior margin straight, with the angles very

rounded. Eyes in the anterior third of the head, their diameter is a little greater than half their distance from the base of the mandibles. Clypeus moderately produced, with the carina and anterior margin rounded. Mandibles smooth, 4-dentate. The scape falls short of the posterior margin of the head by a length equal to one and a half times its thickness. Second to 7th joints of the flagellum wider than long, the 8th a little shorter and decidedly wider than the 9th, which is a little longer than its apical width. Promesonotum convex, the mesoepinotal suture deep. The two faces of the epinotum form a strong convexity. First node of the petiole one-third longer than high, rounded at the summit, twice as long as its peduncle. Second node globose, as wide as the 1st, a little wider than long.

Durban, Natal, (H. B. Marley, *leg.*); received from G. Arnold under the name of *atomus*, race *mictilis*, Forel. The latter is much less convex, its 1st node smaller and more conical, the colour paler and the scapes shorter." Type in coll., Santschi.

M. AMBLYOPS, race BULAWAYENSE, Forel.

Page 236. The name of this race should be altered to *Prossae* Forel, since the name *bulawayensis* has already been used for another form in the genus (Forel, *loc. cit.*, p. 418).

Page 238, sub-genus *Mitara*. The author of this sub-genus is Emery, not Forel.

SUB-TRIBE SOLENOPSIDINI.

SOLENOPSIS ZAMBESIAE, n. sp.

♂, 2 mm. (minor?). Straw-yellow, the head and promesonotum a little darker and more ochreous. Moderately shining. Similar to the ♀ minor of *S. punctaticeps*, Mayr, from which it differs as follows. Head and anterior half or two-thirds of the promesonotum densely punctured with large and deep punctures (in *punctaticeps* the promesonotum is finely and very sparsely punctured). Head and promesonotum with a very short, dense, erect and yellowish pubescence, the rest of the body with a sparser pubescence intermixed with longer and oblique hairs, which are, however, much shorter than in *punctaticeps*. The thorax is more elongate than in that species, and the promesonotum is distinctly flattened above and less convex-sided. The mesoepinotal constriction is much stronger, and the

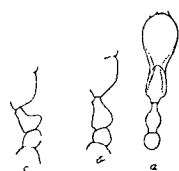


FIG. 66.
a and b, *S. zambesiae*,
n. sp.
c, *S. punctaticeps*,
♀ mi.

suture consequently narrower. The dorsum of the epinotum is narrower at the base than in *punctaticeps*, and the declivity is less oblique, more distinctly delimited from the dorsum, which it equals in length. The 1st node of the petiole is longer and rounder above, and its anterior face is oblique, not vertical. The promesonotum is one-third longer than wide (barely one-quarter in *punctaticeps*). The eyes are smaller. The anterior margin of the median area of the clypeus is furnished with a small tooth on each side, but the exterior pair of teeth, which are present in *punctaticeps*, are entirely wanting. Otherwise exactly like *punctaticeps*.

Rain Forest, Victoria Falls. 2 ♂♂ under damp bark.

Type in my collection.

SOLENOPSIS SEMILAEVIS, Mayr.

Page 247. Dr. Santschi refers this species to the genus *Aeromyrma*, see following paragraph.

TRIBE PHEIDOLOGETINI.

AEROMYRMA TRAEGAORDHI, Santschi.

Page 257. In the Ann. Soc. Ent. France, vol. 85, p. 285, 1916, Dr. Santschi placed this insect in synonymy with *Aeromyrma* (*Solenopsis*) *semilaeve*, Mayr, adopting the opinion of Emery. However, in the Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 338, 1919, he reverts to his original view and considers that *Traegaordhi* is to be regarded as a distinct species.

In the same paper that author has described several new forms of *Oligomyrmex*. As it is exceedingly difficult to appreciate the details of structure in these very minute insects without making transparent balsam mounts, and as I have not sufficient specimens of all the species to spare for that purpose, it seems preferable to copy Santschi's own descriptions, rather than to draw up new ones myself.

All the species which I have seen in life have been found under stones or logs, or under the bark of fallen and decayed trees, in very moist situations. They are all strongly photophobic, and, considering their size, very quick in their movements. The soldier caste does not appear to be of much importance in the economy of the species, as it is rarely that more than two or three can be found in a nest.

It should be noted that *Aeromyrma* was erected as a genus distinct from *Oligomyrmex* on account of having 10-jointed antennae instead of the 9 which is found in the latter genus. However, since it has been found that *O. debilis*, Santschi, has a ♂ with 10-, and a ♀ with 9-jointed

antennae, Emery has sunk *Aeromyrma* to the rank of a sub-genus of *Oligomyrmex*. (Rend. Acc. Sc. Bologna, p. 59, 1914-5.)

OLIGOMYRMEX (s.g. AEROMYRMA) NANUS, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 338, 24, ♀, 1919.

“♀, 1.2 mm. Dirty yellow, smooth and shining. Mesopleurae, epinotum and petiole reticulate-punctate, the upper surface of the nodes much more feebly so. Pilosity fine, short, more or less curved, more abundant and shorter on the head than elsewhere, scantier on the appendages. Head one-seventh longer than wide, the sides fairly convex, the posterior margin straight or feebly concave. Eyes atrophied or absent, placed in the anterior third. Frontal carinae short, very divergent. Mandibles with 4 or 5 teeth. The scape extends back to the posterior fourth of the head. Third to 6th joints of the flagellum more than twice as wide as long, the last joint of the club as long as the rest of the flagellum. Promesonotum ovoid, fairly convex, the suture effaced above. Mesoepinotal suture deep. Dorsum of epinotum slightly convex, submarginate, as long as the declivity, together forming a rounded angle. Declivity more or less marginate at the sides. First segment of petiole as long as high, the node low and rounded above. Second node transversely oval, a little more than one-third wider than long and equally wider than the 1st.

24. Thorax and abdomen of a more brownish yellow than in the ♀. The appendages paler, smooth and shining, except the mesopleurae, epinotum, the 1st node and sides of the 2nd, which are reticulate. Promesonotum, excluding the neck, pyriform, a little longer than wide. The suture fairly distinct above. The promesonotum is strongly convex, whereas the mesonotum has a fairly rectilinear profile which is continued into the dorsum of the epinotum. Mesoepinotal suture feeble. Epinotum marginate, the dorsum wider in front, as long as wide behind, and as long as the declivity. First segment of petiole longer than high, the node rounded. Second segment of petiole transversely oval, twice as wide as long and two-fifths wider than the 1st. (My unique example of the 24 lacks the head.)”

Amatongas Forest, P.E.A. (Arnold *leg.*)

The head of the 24 is a little more than one-third longer than wide, parallel-sided, the posterior angles rounded, the occipital margin widely but shallowly concave, margined above by a weak and transverse carina. The anterior third of the head, except the median area of the clypeus, is longitudinally striate, strongly so at the sides, the striae

curved outwards around the antennal sockets. The median area of the clypeus is vertical in front, its anterior margin feebly concave. The frontal carinae widely divergent, not extending beyond the anterior fifth of the head. The scapes do not extend back to the middle of the head. Eyes absent. Type in coll., Santschi.

O. (s.g. *AEROMYRMA*) *INCERTUS*, Santschi.

Loc. cit., p. 340, ♀.

“♀, 1.2 mm. Dark yellow, (reddish ochreous, the abdomen somewhat brownish, G.A.), terminal margin of the mandibles and a cloud on the abdomen brownish yellow. Shining, smooth, excepting a few striae on the cheeks; mesonotum, epinotum and the nodes reticulate and somewhat dull. Pilosity fine, short and sparsely distributed on the body, shorter and closer on the head, visible on the limbs. Head a full fifth longer than wide, the sides fairly convex, a little narrower in front than behind, the posterior margin straight. The eyes consist merely of a pigmented spot placed at the middle of the sides. The frontal carinae reach the anterior third of the head. The fairly abrupt clypeus has a long, rounded lobe, not much produced. Mandibles 4-dentate. The scape reaches the posterior fourth of the head. The promesonotum forms a disc as wide as long and evenly convex. Mesopinotal suture fairly deep and striate. Dorsum of epinotum slightly convex, as long as the declivity, their junction forming a rounded angle. The declivity is marginate, but without raised lamellar ridges. The 1st node of the petiole is much more acuminate at the summit than in the other species. The 2nd node transversely oval, half as wide again as the 1st.”

Hillside, Bulawayo, under a stone. Type in coll., Santschi. (G.A. coll.).

O. (s.g. *AEROMYRMA*) *ARNOLDIELLA*, Santschi.

Loc. cit., p. 340, ♀, 2♂.

“♀. 1-1.2 mm. Concolorous, dull yellow, smooth and shining. Epinotum, mesopleurae and sides of the petiole feebly reticulate. Pilosity shorter than in the 2♂. Head one-eighth longer than wide, the sides convex, the posterior margin barely concave. Eyes absent. The scape reaches back to about the posterior fourth of the head. Clypeus bicarinate, produced in the middle into a lobe, lightly excised. Promesonotum much longer than wide, the suture almost obsolete above, more distinct at the sides. The dorsum of the epinotum barely convex, wider behind, and hardly shorter than the declivity; the

latter is barely marginate. First segment of the petiole short, the node fairly angular but less acuminate at the summit than in *incertus*. Second node one-third wider than long, twice as wide as the 1st.

24. 2 mm. Head yellowish brown, limbs and abdomen of a slightly brownish yellow. Thorax of a colour intermediate, but darker in front. Head striate, more strongly so in front, with large scattered punctures; the frons, middle of clypeus, mandibles (a few striae at their base), the dorsum of the pronotum, of the 2nd node and of the abdomen, smooth and shining. Epinotum, mesopleurae and rest of the petiole reticulate-punctate. Pilosity fine, curved, fairly abundant, especially on the head, where it is only half as long as on the body.

Head rectangular, nearly one-fourth longer than wide, the angles well defined, the sides feebly arcuate, the posterior margin straight. Eyes indistinct. The frontal carinae extend to the anterior third of the head. Frontal area deep. Clypeus with two smoothed carinae diverging towards the angles of a slight lobe which occupies the middle third of the anterior margin. Mandibles with 5 teeth. The scape hardly reaches the middle of the sides of the head. Thorax much shorter than the head. Promesonotum as wide as long and moderately convex; the promesonotal suture obsolete above. Mesoeipinotal suture fairly deep. Dorsum of epinotum feebly convex, shorter than the declivity, with which it forms a rounded angle. First segment of petiole as long as high, its node with a rounded summit and conical profile, the peduncle short. Second node transversely oval, nearly twice as wide as long and twice as wide as the first."

Natal. (Haviland *leg.*), *ex* Natal Mus. coll. Type in coll. Santschi.

O. (s-g. AEROMYRMA) SEMILAEVE, Mayr.

(*Solenopsis*) Mayr, Ann. K.K.N.H. Mus. Wien, vol. 16, p. 15, ♀, 1901.

(*O. Hewitti*) Santschi, *loc. cit.*, p. 341, ♀, 24.

"24, 2.2 mm. Reddish yellow, slightly brownish; abdomen and more particularly the head, darker. Limbs of a pale brownish yellow. Pilosity exserted, curved, of variable length, fairly abundant all over, shorter on the head, where it merges into pubescence. Pubescence occurs chiefly on the legs and antennae. Head striate in front, transversely towards the posterior margin, with the angles reticulate rather than striate. The clypeus, a small frontal space and the mandibles remain smooth and shining. Dorsum of the promesonotum and of abdomen smooth, sparsely punctured, the sides of the petiole more

closely so. Epinotum and mesopleurae reticulate punctate. There is a plexus of fine striae on the sides of the mesonotum and front of the pronotum. Head rectangular, a little wider in front than behind, nearly one-fourth longer than wide, the sides nearly straight, the posterior margin hardly concave, the angles widely rounded. The eyes, very mediocre and feebly convex, are placed in the anterior third of the sides. Antennae 10-jointed, the scape not reaching the anterior third of the head. Frontal carinae fairly distant, furnished with raised lobes which cover the antennal sockets. Clypeus smooth in the middle, striate at the sides, moderately lobate in front and feebly excised in the middle. Behind it projects widely between the frontal carinae; the latter are continued along it in front as two feeble and convergent carinae. Frontal area deeply impressed. Mandibles smooth, with 5 or 6 teeth. Promesonotum globose, the suture indistinct above. Mesoeipinotal suture not deep above, more marked at the sides. Epinotum deeply channelled from its base to the apex. The floor of this excavation is a little convex from back to front, but its walls are raised and form in profile a subdentate angle, whence the dorsum of the epinotum appears a little longer than the declivity. First segment of the petiole as high as long, the node rounded at the summit, its anterior face longer than the peduncle, the latter with a small tooth below. Seen from above, the summit of the node appears more than twice as wide as long. Second node transversely oval, one and two-thirds wider than long. Abdomen excavated at the base."

Grahamstown, C.P., (Hewitt *leg.*), *ex* Albany Mus. coll.; taken with the ♂♂. (The latter is described on p. 247 of this monograph.)

O. (AEROMYRMA) LUCIDUS, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 284, ♂, 1916.

"♂, 1.2 mm. Yellow, shining, with a fine scattered puncturation and a few striae in the metathoracic suture. The pubescence is very fine, fairly outstanding and fairly abundant everywhere; a few longer hairs round the mouth and on the abdomen. Head rectangular, a little more than one-fourth longer than wide, the sides slightly convex, the posterior margin straight. The eyes, atrophied or reduced to a merely pigmented spot, are placed at the second 5th of the sides of the head. Frontal carinae sinuate, very divergent posteriorly. Clypeus convex, the anterior margin feebly arcuate in its middle third, separated from the outer thirds by a very slight and wide based prominence. Mandibles with 5 brownish teeth. Second to 7th joints

of the flagellum much wider than long, the 8th (1st of the club) almost as wide as long, the last joint as long as the seven preceding joints united. The promesonotum in profile forms a regular curve less marked than in *O. semilaevis*, Mayr, and *O. nossidambo*, Forel. The mesoepinotal suture is less deep. Promesonotal suture distinct on the sides of the thorax, obsolete on the dorsum. Dorsum of epinotum half as wide again as long, convex, merging into the longer declivity. The sides have a margin which appears to prolong the profile of the dorsum, making it appear as long as the declivity. Its angles are distinct, but not dentate. The 1st joint of the petiole is as high as long, lower than in *semilaevis*, Mayr. The summit is rounded and the two faces equally oblique. Second joint of the petiole one-third wider than long, almost one-half longer than the 1st. Abdomen nearly twice as long as wide, truncate at the base.

Bunthorne Mine, Bulawayo, 1 specimen. It is perhaps the ♀ of *A. africana*, Forel, of which only the ♂ is known."

ANELEUS PERPUSILLUS, Emery, race ARNOLDI, Forel.

♀, (hitherto undescribed), 3.8 mm. Colour slightly darker than in the ♂, but like that caste in the shape of the head, the sculpture and the pubescence. Head three-sevenths longer than wide, parallel-sided. Scapes longer than in the ♂, extending back as far as the level of the posterior margin of the eyes. The eyes fairly large, occupying one-fifth of the sides and placed in the middle; ocelli not small, placed close to the occipital transverse carina. Pronotum vertical in front, moderately exposed above, the shoulders marginate, subrectangular, transversely rugose. Mesonotum smooth and shining, very sparsely punctured, about one-third longer than wide, moderately convex transversely, nearly flat lengthwise. Scutellum subcircular, on the same level as the mesonotum. Epinotum armed with two transversely compressed and triangular teeth, directed outwards and slightly downwards; dorsum of epinotum concave transversely between the teeth, the vertical declivity about as long as the dorsum. Second node of petiole one and three-quarter times wider than long, produced at the sides inferiorly into flat or laminate obtuse angles. Abdomen almost twice as long as wide, as long as the thorax and petiole together, the 1st segment as long as the remaining segments taken together, parallel-sided. Deälated. Otherwise like the ♂.

Taken with ♂♂ and ♀♀ in a populous nest under a stone. Bulawayo.

Type in my collection.

TRIBE MYRMICARIINI.

MYRMICARIA STRIATA, Stitz, race PILOSA, n. st.

♂, 6-6.3 mm. Smaller and darker than the type of the species. Mandibles and scapes very dark reddish brown, the tip of the last joint of the flagellum ferruginous, the rest of the body black.

Pilosity longer and much more abundant than in the type of the species, especially on the thorax and abdomen, the hairs black. The sculpture on the head is similar to that of the type, but the rugae are stronger and a great deal more prominent. The promesonotum has a strong median carina and 4 or 5 longitudinal rugae on each side of same, and 2 or 3 transverse rugae on the anterior margin. The base of the abdomen is microscopically coriaceous and dull. The promesonotum is relatively wider than in the type of the species, a little wider across the anterior angles than long in the middle: the promesonotal suture clearly defined on the dorsum. The epinotal spines are horizontal and parallel, a little longer and distinctly thinner at the base than in the type species. The peduncle of the 1st joint of the petiole is thinner and longer, straight when seen from the side, not arcuate near the base as in the type of the species. Otherwise like the latter.

Amatongas Forest, Portuguese E.A. Common over all the Forest. (S.A.M., R.M., G.A. colls. Type in my collection.)

Race PILOSA, var. PALLIDA, n. v.

♂, 4.9-5.2 mm. Castaneous brown, abdomen, legs and scapes paler or raw umber. Pilosity brown, as long as in the type of the race but not so coarse and bristly. The longitudinal striae on the head more numerous than in the type of the race, and extending unbroken as far as the occipital foramen (in the race some are anastomosed). The scapes are only superficially striate. The dorsum of the epinotum narrower than in the type of the race, its lateral margins or carinae more distinctly angulated outwards than in either the race or the type of the species. The 1st node of the petiole is distinctly narrower, and hardly wider than the 2nd node (very clearly wider in the types of the race and of the species); its peduncle is also relatively shorter. Otherwise like the type of the race.

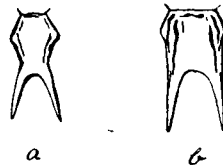


FIG. 67.
Dorsum of epinotum.
a, var. *pallida*;
b, race, *pilosa*.

Much smaller than the race or species, and differing from both also in the much shorter scapes, which extend beyond the hind margin of the head by barely as much as the apical width of the scape, (by at least two and a half times the apical width in the species and race).

Natal, 5300 ft., (Haviland), *ex* Natal Museum Coll.

(S.A.M., R.M., G.A. colls. Type in my collection.)

Race *PILOSA*, var. *ANGUSTITHORAX*, n. v.

♂, 6 mm. Piceous, mandibles, thorax and peduncle of petiole reddish dark brown. This variety differs from the type of the race as follows. The striae on the middle of the back of the vertex are almost obsolete. The longitudinal striae on the pronotum are wider apart, the three middle ones strongest, the space between them shining. Base of abdomen smooth and shining, not reticulate and dull as in the race. The posterior margin of the head is moderately convex, nearly straight in the race. The eyes are decidedly more prominent and placed farther back, their distance from the hind margin being equal to about their long diameter, (in the race fully one and a half times their long diameter). The basal lateral lobes of the epinotum are much less produced outwardly, the dorsum of the epinotum being almost parallel-sided and longer than wide, whereas in the race the base of the dorsum is distinctly angulated outwards on each side and is as wide there as long in the middle. Seen in profile, in race *pilosa* the dorsum of the epinotum slopes downwards from the mesoepinotal suture to the apex of the spines, whereas in the variety it is horizontal or directed slightly upwards. The promesonotal suture is obsolete (distinct in the race). The nodes of the petiole are narrower, the 1st, seen from above, being fully one-third longer than wide, (as long as wide in the race).

Sawmills, Umgusa River, S.R.

Type in my collection.

MYRMICARIA BAUMI, Forel.

This species, the largest of the genus, also occurs at Sawmills. The nest is large and placed in sandy soil, the galleries extending fully 18 inches below the surface.

TRIBE TETRAMORIINI.

Genus *TETRAMORIUM*.

Since the publication of Part 3 of this work, several new forms have been discovered, necessitating a complete revision of the key to the

species. More especially is this the case in the *quadrispinosum* and *sericeiventre* group.

The form previously described on page 278 as *Blochmanni*, race *continentis*, Forel, although so determined by Dr. Forel himself, cannot be identified with that race; in addition, the discovery of several intermediate varieties from many parts of the African region has made it possible for Dr. Santschi to revise the classification of the group, (Bull. Soc. Hist. Nat. Afrique du Nord, vol. 9, pp. 121-132, 1918). This revision is valuable, especially in emphasising the close relationship between *quadrispinosum* and *sericeiventre*, which are indeed no more than the extremes of one species, characterised by the gradual elimination, or addition, of sculpture. In some cases it is therefore almost a matter of personal opinion as to whether a form should be attached as a race or variety to either one or the other of those extremes. On the other hand, it seems to me that Santschi has placed too much reliance on the nature of the fine sculpture of the abdomen. The effect of this sculpture, due to an exceedingly delicate and microscopic striolation, is plainly appreciable under a low-power, giving the integument a dull silky gloss, but the direction of the fine striae, whether transverse or longitudinal, cannot as a rule be determined with a magnification of much less than 60 diameters.

T. Bequaerti, Forel, and *T. Gladstonei*, Forel, are two other species which are closely attached to the *quadrispinosum-sericeiventre* group.

The form described on page 278 as *continentis* should be transferred to *sericeiventre*, Emery, as the var. *Vascoi*, Santschi. The form *Gamaui*, Santschi, being the commonest form in S. Rhodesia, has been used in the following description as a basis for comparison with the others.

Key to the ♂♂ of Tetramorium (s. str.), revised.

- (22) 1. First node of petiole more or less squamiform.
- (3) 2. „ „ „ strongly and transversely striate; large species,
4.5-5 mm. long. . . . *grandinode*, Santschi, var. *hopensis*, For.
- (2) 3. First node of petiole smooth; smaller species, less than 4 mm. long.
- (5) 4. Head longitudinally, sharply and evenly striate; the striae continuous
from the anterior to the posterior margin; posterior margin of
clypeus not defined *repentinum*, Arnold.
- (4) 5. Head otherwise sculptured.
- (9) 6. Pronotum or promesonotum in part smooth, the sculpture of the
thorax not coarse.
- (8) 7. Pronotum, except in front, smooth and very shining; clypeus carinate;
epinotal spines shorter than the space between them
matopoensis, Arnold.

- (7) 8. Promesonotum partially smooth; clypeus not carinate; epinotal spines as long as the space between them . . . *Titus*, Forel.
- (6) 9. Promesonotum coarsely rugose.
- (15) 10. First node of petiole, seen from behind, clearly wider than high.
- (12) 11. Body with a long, coarse and fairly abundant pilosity; 1st node, seen from behind, narrower above than below, irregularly hexagonal in outline, each angle ending in a hair . . . *umtaliensis*, Arnold.
- (11) 12. Pilosity short, fine and scanty. 1st node, seen from behind as wide above as below.
- (14) 13. Sides of 2nd node, seen from above, subangular; head and thorax reddish brown . . . *squaminode*, Santschi, race *do* Forel
- (13) 14. Sides of 2nd node, seen from above, rounded or straight; head, thorax and petiole reddish yellow . . . *squaminode*, var. *flaviceps*, Arnold.
- (10) 15. First node of petiole, seen from behind, as high as, or higher than wide.
- (17) 16. Colour pale ochreous; posterior face of 1st node distinctly convex from above to below; 2.7 mm. long . . . *jejunum*, Arnold.
- (16) 17. Colour reddish brown; posterior face of 1st node almost flat.
- (19) 18. Head and thorax longitudinally striato-rugose, with distinct anastomoses between the striae . . . *Akermani*, Arnold.
- (18) 19. The head, or head and thorax longitudinally striate, without anastomoses.
- (21) 20. Second node twice as wide as long . . . *Akermani*, var. *frigidum*, Arnold.
- (20) 21. „ „ one and a half times wider than long
Akermani, var. *drakensbergensis*, Arnold.
- (1) 22. First node of petiole not squamiform.
- (28) 23. Eyes very small, composed of not more than two or three facets.
- (25) 24. Head longer than wide, parallel-sided, hardly wider than the prothorax
Warreni, Arnold.
- (24) 25. Head as wide as, or wider than long, convex-sided, wider than the prothorax.
- (27) 26. First node of petiole considerably narrowed in front; seen from above the anterior margin acutely convex or semi-elliptical
subcoecum, Forel, var. *inscia*, Forel.
- (26) 27. First node not much narrower in front than behind; seen from above, the anterior margin is only moderately convex.
Traegaordhi, Santschi.
- (23) 28. Eyes not very small, composed of many facets.
- (76) 29. The scapes extend back as far as, or beyond the occipital margin.
- (35) 30. Promesonotum smooth and shining; or with a few rugae, in which case the whole body is pitchy black and shining.
- (32) 31. A distinct demisrobe present; the 1st node of the petiole thin, as wide as long above, the 2nd node fully half as wide again as the 1st.
laevithorax, Emery.
- (31) 32. No scrobes; 1st node of petiole thick, longer than wide, the 2nd node hardly one-third wider than the 1st.
- (34) 33. Shining, colour entirely pitchy black, the sides and back of the head pitted . . . *quadrispinosum*, Emery, race *Beirae*, Arnold.
- (33) 34. Head and thorax ferruginous, head not pitted
quadrispinosum, race *otaviensis*, Arnold.

- (30) 35. Promesonotum sculptured, not very shining.
- (37) 36. First node, seen from above, wider than long . . . *Frenchi*, Forel.
- (36) 37. " " " longer than wide, or at least as long as wide.
- (49) 38. First node coarsely sculptured, rugoso-punctate.
- (44) 39. A demiscrobe present.
- (43) 40. Frontal carinae almost parallel.
- (42) 41. Yellowish red-brown ; sculpture of promesonotum not very coarse
setigerum, Mayr.
- (41) 42. Dark brown, the abdomen black ; sculpture of promesonotum very coarse . . . *setigerum*, race *quaerens*, Forel.
- (40) 43. Frontal carinae distinctly divergent posteriorly
quaerens, var. *amatongae*, Arnold.
- (39) 44. Scrobes entirely absent.
- (48) 45. Clypeus convex transversely ; epinotal spines short, shorter than the space between their bases ; eyes not very large.
- (47) 46. Head nearly one-fifth longer than wide . . . *Gladstonei*, Forel.
- (46) 47. Head nearly one-third longer than wide
Gladstonei, var. *seposita*, Santschi.
- (45) 48. Clypeus flat transversely ; epinotal spines long, longer than the space between their bases ; eyes decidedly large . . . *longicorne*, Forel.
- (38) 49. First node finely sculptured, at least not rugoso-punctate.
- (51) 50. Pronotum microscopically reticulate, almost smooth, shining, without striae or rugae . . . *quadrispinosum*, Emery.
- (50) 51. Pronotum with or without striae and rugae, but at least distinctly reticulate or reticulate-punctate, and usually dull.
- (57) 52. Whole abdomen shining, only microscopically reticulate at the extreme base, never striolate nor with a dull silky lustre.
- (54) 53. Pilosity scanty on the body, the abdomen almost glabrous
quadrispinosum, race *eudoxia*, Forel.
- (53) 54. Pilosity fairly abundant.
- (56) 55. Fundamental reticulation on the posterior half of the head and on the promesonotum distinct, the head only slightly shining
Bequaerti, Forel, race *bulawayensis*, Forel.
- (55) 56. Fundamental reticulation on the head and promesonotum almost effaced, at least the head distinctly shining
race *bulawayensis*, var. *Bruni*, Sant,
- (52) 57. At least the basal part of the 1st dorsal abdominal segment striolate and duller than the rest of the abdomen.
- (67) 58. Whole dorsal surface of 1st abdominal segment, except the sides, sculptured and dull ; the sculpture is a microscopically fine striation, so close as to produce a slight silky lustre.
- (64) 59. The striation on the 1st segment longitudinal, resolvable under a magnification of about 65 diameters.
- (61) 60. Abdomen of the same colour as the head and thorax, cinnamomeous, rarely darker, entirely dull
sericeiventre, Emery, race *cinnamomeum*, Arnold.
- (60) 61. Abdomen entirely or partially of a colour different from that of the thorax.

- (63) 62. Abdomen concolorous, dark brown or piceous; head and thorax castaneous red *sericeiventre*, var. *Vascoi*, Santschi.
- (62) 63. Abdomen dark rusty red on the basal third, the rest piceous; head lighter than the thorax, of a burnt-sienna colour
sericeiventre, var. *Gamaïi*, Santschi.
- (59) 64. The direction of the striation on the abdomen not resolvable even with a magnification of 65 diameters.
- (66) 65. Bright ferruginous, femora and abdomen blackish, the latter striolate and dull at the base, the rest of the abdomen smooth; 3.4 mm.
sericeiventre, race *femoratum*, Emery.
- (65) 66. Dark burnt-sienna red, the apical half of the abdomen darker or brownish red; 3.7 mm. . . *femoratum*, var. *transversa*, Santschi.
- (58) 67. Only the basal third of the 1st abdominal segment dull and sculptured.
- (69) 68. Base of abdomen simply striolate . . *femoratum*, var. *colluta*, Sant.
- (68) 69. Base of abdomen distinctly reticulate, with or without a striolation in addition.
- (71) 70. Pronotum reticulate, with superimposed rugae which are as wide as the spaces between them
sericeiventre, race *inversa*, var. *defricta*, Santschi.
- (70) 71. Pronotum reticulate, with rugae which are narrower than the spaces between them.
- (73) 72. Abdomen reddish brown, the base rusty red; head pitted, the pits fairly large and well defined; 3.5 mm.
sericeiventre, race *continentis*, Forel.
- (72) 73. Abdomen black or piceous, the base hardly, or not at all paler; the pitting of the head shallow.
- (75) 74. Pronotum fairly convex, with fairly regular and thick longitudinal rugae *continentis*, var. *Georgei*, Santschi.
- (74) 75. Pronotum flatter, the rugae thinner and less regular
continentis, var. *Platonis*, Santschi.
- (29) 76. The scapes do not extend back as far as the occipital margin.
- (80) 77. Pubescent hairs on the body flattened, almost scale-like and closely adpressed.
- (79) 78. First node above, nearly twice as wide behind as in front; epinotal spines as long as the space between their bases *setuliferum*, Emery.
- (78) 79. First node above, one and a half times as wide behind as in front; epinotal spines shorter than the space between their bases
setuliferum, race *cluna*, Forel.
- (77) 80. Pubescent hairs simple, not scale-like.
- (82) 81. Epinotal spines very long, as long as the dorsum of the epinotum
Joffrei, Forel.
- (81) 82. Epinotal spines shorter than the dorsum of the epinotum.
- (96) 83. Epinotal spines or teeth distinctly longer than they are wide at the base (or as long, *vexator*).
- (89) 84. Pronotum finely striate or rugoso-striate, not reticulate.
- (86) 85. First node, seen from the side, cuneiform, with only an anterior vertical and a posterior oblique face. . . . *vexator*, Arnold.
- (85) 86. First node, seen from the side, not cuneiform, with a distinct dorsal, as well as anterior and posterior faces.

- (88) 87. Dorsal face of 1st node distinctly longer than wide; colour dark yellowish red *Popovici*, Forel.
- (87) 88. Dorsal face of 1st node as wide as, or a little wider than long; colour pale ochreous *capensis*, Mayr, and var. *Braunsi*, Forel.
- (84) 89. Pronotum reticulate or sparsely rugose.
- (95) 90. Nodes of petiole rugose and dull.
- (94) 91. A distinct demiscrobe present; head longer than wide.
- (93) 92. Base of abdomen not sculptured *guineense*, Fab.
- (92) 93. Basal two-fifths of abdomen dull and longitudinally striate
Bacchus, Forel.
- (91) 94. No demiscrobes; head as wide as long (basal two-fifths of abdomen longitudinally striate and dull) *Peringueyi*, Arnold.
- (90) 95. Nodes of petiole smooth and shining *Grassi*, Emery.
- (83) 96. Epinotal spines or teeth not longer than they are wide at the base.
- (108) 97. Larger species, not less than 3·5 mm. long.
- (103) 98. No trace of scrobes.
- (102) 99. Epinotal teeth longer than the episternal; scapes not nearly reaching the occipital margin.
- (101) 100. Dorsum of epinotum hardly twice as long as wide at the base, its junction with the oblique sides rounded; the mesoepinotal suture feeble *solidum*, Emery, var. *signatum*, Em.
- (100) 101. Dorsum of epinotum two and a half times longer than wide at the base, marginate laterally, its junction with the vertical sides rectangular; mesoepinotal suture fairly deep
solidum, var. *Tuckeri*, Arnold.
- (99) 102. Epinotal teeth not longer than the episternal; the scapes extend back almost as far as the occipital margin *Jauresi*, Forel.
- (98) 103. A more or less distinct demiscrobe present.
- (107) 104. Dorsal profile of thorax feebly convex or straight; epinotal teeth distinct.
- (106) 105. Larger species, 5 mm. or more; 1st segment of petiole with the peduncle less than half as long as the node *simulator*, Arnold.
- (105) 106. Smaller species, 3·5 mm.; peduncle of 1st segment of petiole as long as the node *lobulicorne*, Santschi.
- (104) 107. Dorsal profile of thorax distinctly angulated at the promesonotal junction; epinotal teeth almost obsolete.
Emeryi, Mayr, race *cristulatum*, Forel.
- (97) 108. Smaller species, less than 3·5 mm. long.
- (110) 109. Abdomen dull, closely and finely punctured *semireticulatum*, Arnold.
- (109) 110. Abdomen shining, not closely punctured, or if so, only at the extreme base.
- (124) 111. Epinotal teeth fairly large, at least distinctly larger and longer than the episternal.
- (115) 112. Colour of body entirely black, or nearly so.
- (114) 113. Scapes, legs and mandibles reddish yellow; thorax in greater part finely reticulate-punctate *argenteopilosum*, Arnold.
- (113) 114. Scapes, legs and mandibles blackish; thorax coarsely rugoso-reticulate
oculatum, Forel.
- (112) 115. Colour more or less yellow, yellowish red or dark castaneous red.

- (117) 116. Dark castaneous red; pronotum strongly marginate in front, head and thorax very strongly and longitudinally rugose, the rugae prominent *somniculosum*, Arnold.
- (116) 117. Yellowish, or yellowish red; pronotum not marginate in front, sculpture of thorax not very coarse.
- (119) 118. A complete scrobe present; sutures on dorsum of thorax entirely absent; thorax and nodes microscopically reticulate-punctate and dull *Arnoldi*, Forel.
- (118) 119. Scrobes, if present, not complete; thorax with a fine rugose sculpture.
- (121) 120. Second node of petiole as wide as long; a trace of a demiscrobe present. *simillimum*, Smith, var. *shilohensis*, Forel.
- (120) 121. Second node wider than long.
- (123) 122. Sculpture fine; no trace of a scrobe; 2.2 mm. long *pusillum*, Emery, var. *mossamedensis*, Forel.
- (122) 123. Sculpture coarser; a slight trace of a scrobe present; 2.5 mm. long *longoi*, Forel.
- (111) 124. Epinotal teeth small, as large as, or smaller than the episternal, or nearly obsolete.
- (128) 125. Second node fully half as wide again as the 1st.
- (127) 126. Anterior margin of the dorsal face of the 1st node semi-elliptical; epinotal teeth obsolete; colour pale straw-yellow *incruentatum*, Arnold.
- (126) 127. Anterior margin of the dorsal face of the 1st node semi-circular; epinotal teeth distinct; colour reddish ochreous *incruentatum*, var. *tuteolum*, Arnold.
- (125) 128. Second node much less than half as wide again as the 1st.
- (130) 129. First node, seen from the side, subconical; its anterior margin strongly convex; episternal teeth larger than the epinotal *simillimum*, race *isipingense*, Forel.
- (129) 130. First node merely slightly convex or even flat in profile, its anterior margin almost straight.
- (132) 131. Promesonotum shining, almost smooth *simillimum*, var. *Poweri*, Forel.
- (131) 132. „ „ dull, distinctly sculptured.
- (134) 133. Scrobes entirely absent; the frontal carinae do not extend back beyond the middle of the head . . . *pusillum*, race *tablense*, Forel.
- (133) 134. Either a trace of a scrobe present, or the frontal carinae extend back nearly as far as the occipital margin.
- (136) 135. Dorsum of the epinotum two and a half times longer than the declivity *pusillum*, race *ladismithensis*, Forel.
- (135) 136. Dorsum of epinotum less than twice as long as the declivity.
- (138) 137. Head slightly shining, not longer than wide; 2.5 mm. long *intextum*, Santschi, var. *cataractae*, Sant.
- (137) 138. Head dull, a little longer than wide; 2.2 mm. long *simillimum*, Smith.

T. SERICEIVENTRE, Emery, var. *VASCOI*, Santschi.

Bull. Soc. Hist. Nat. Afrique du Nord, vol. 9, p. 128, ♂, ♀, 1918.

“♂, 3.6 mm. Yellowish red, abdomen and posterior femora light brown, the rest of the limbs rusty yellow. Sides of the head rugose, reticulate as in var. *arenarium*, Santschi; the rugae on the pronotum are parallel, fine and distant, and are effaced on the mesonotum and epinotum, which are only reticulate-punctate, like the upper surface of the two nodes. Abdomen with silky lustre, finely striolate as in *arenarium*. Head wider behind and with more rounded angles than in *arenarium*. Frontal area wide. Second joint of the flagellum one-fourth longer than wide. Pre-epinotal impression feeble, more so than in *arenarium*. Epinotal spines shorter than the space between them and as long as the episternal.”

♀, 5 mm. Bulawayo, S.R. (Arnold *leg.*).

My paratypes of this variety (collected from the same nest as the types which were sent to Santschi) do not agree with the above description. The colour is much darker than stated therein, and I am quite unable to distinguish the least degree of a striolation of the abdomen, which is only microscopically reticulate at the base.

T. SERICEIVENTRE, var. *GAMAI*, Santschi.

Loc. cit., p. 128, ♂.

♂, 3.5–3.8 mm. Head burnt-sienna brown, distinctly of a paler colour than the thorax and petiole, which are dark castaneous brown. The abdomen is of the same colour as the thorax, except on the basal third, where it is paler and of a burnt-sienna brown, or ferruginous, (“roussâtre,” Santschi). The legs and antennae are brownish ochreous, the femora somewhat darker. The head has a few whitish and erect hairs, chiefly on the front, the thorax two or three in front, the nodes of the petiole with two each near their posterior margins, and the abdomen with a few on the apical half, otherwise the insect is nearly glabrous.

The fundamental sculpture of the head, thorax and petiole consists of a fine and close reticulate puncturation. The sides and back of the head have a few rugae superimposed, wider and coarser in front of the eyes, more or less anastomosed or reticulate, leaving round and shallow pit-like areas in between. The space between the frontal carinae and the vertex is longitudinally striate. The clypeus is rugulose and strongly carinate in the middle, the mandibles closely and longitudi-

nally striate and dull. On the dorsum of the thorax there is a superimposed sculpture of rugae, chiefly longitudinal on the pro- and mesonotum, becoming less distinct or effaced towards the posterior half of the mesonotum; the dorsum of the epinotum with a few more or less transverse rugae. The sculpture is strongest near the anterior border of the pronotum, which is marginate. The sides of the thorax are more or less longitudinally and feebly rugoso-striate. The nodes of the petiole are shallowly pitted, more closely at the margins than in the middle. The 1st segment of the abdomen is microscopically rugulose near the base, longitudinally striolate or aciculate all over. Head quadrate, slightly longer than wide, and a little wider than the prothorax. Mesoeipinotal suture wide and shallow, the epinotal teeth a little longer than the episternal, shorter than the distance between their bases. The dorsum of the epinotum, not very clearly delimited from the sides, widens towards the apex and is nearly twice as long as wide at the base. First node of the petiole as wide behind as long, narrowed in front; 2nd node cupuliform, widest behind, about one-third wider than long and equally wider than the 1st. The whole body dull.

Bulawayo, Gwaai, and Salisbury, S.R.
(S.A.R., R.M., G.A. colls.)

T. SERICEIVENTRE, race INVERSA, Santschi, var. DEFRICTA, Santschi.

(race), Ann. Soc. Ent. France, vol. 78, p. 384, ♀, 1909.

Var., *loc. cit.*, p. 129, ♀.

♀, 3.5-3.6 mm. Head, thorax and petiole pale yellowish ferruginous, the thorax a little darker than the head. The colour much paler than in *Gamaii*. Abdomen brownish black, slightly reddish brown near the base. Head more strongly sculptured than in *Gamaii*, the sides almost as strongly rugoso-reticulate behind as in front, the vertex more distantly and less regularly striate than in *Gamaii*. The dorsum of the thorax, except just between the epinotal teeth, coarsely and chiefly longitudinally rugose, the rugae not much narrower than the spaces between them. The epinotal teeth are as long as the space between their bases, and a little longer than the episternal. Abdomen shining, except the basal third or fourth of the 1st segment which is microscopically reticulate-rugulose, with a faint suggestion of a longitudinal striolation.

♀, 5.2 mm. Head much more strongly sculptured than in the ♀. Mesonotum and scutellum strongly and longitudinally striate, the

dorsum of the epinotum transversely striate, the nodes of the petiole reticulate-rugose. The abdomen dull except at the sides; the 1st segment transversely and finely striate at the base, longitudinally striolate elsewhere, the striolae divergent towards the sides. Epinotal teeth not longer than the episternal, barely half as long as the space between their bases. First node of petiole shorter than in the ♂, hardly longer than wide. Wings flavo-hyaline, the nervures ochreous.

Malindi, S.R.; Basutoland and Natal.

(R.M., G.A. colls.)

T. SERICEIVENTRE, race CINNAMOMEUM n. r.

♀, 3.3 mm. Abdomen usually of the same colour as the head and thorax, which is a yellowish red, or cinnamon. Occasionally some individuals from the same nest may have the abdomen a little darker than the rest of the body, but although darker, the colour is of the same kind. The pronotum is more sharply marginate in front, and the sculpture is more distinctly reticulate, the longitudinal rugae being less emphasised than in the type of the species. Epinotal spines shorter, hardly longer than the episternal, and not longer than the interval between their bases. First node of the petiole sharply truncate behind, so that its posterior face is vertical, not oblique as in the type of the species. Abdomen with the same sort of sericeous reflection as in the type of the species.

Amatongas Forest, P.E.A., the nest under a sleeper on the railway; Beira, P.E.A., common. Type in my collection.

(S.A.M., R.M., G.A. colls.)

T. SERICEIVENTRE, race FEMORATUM, Emery,

var. TRANSVERSA, Santschi.

Loc. cit., p. 128, ♀.

♀, 3.7 mm. Dark burnt-sienna red, the head a little paler, the legs paler than the head. Abdomen dark reddish brown, the basal third paler and of the same colour as the petiole. Vertex of head distantly striate; the frontal carinae extend farther backwards than in *Gamaii* and are almost parallel, (distinctly divergent in *Gamaii*). The promesonotum coarsely rugose lengthwise, the dorsum of the epinotum transversely rugose. The sides of the head are less parallel than in *Gamaii*. Nodes of petiole a little narrower than in that variety. Epinotal teeth not longer than the episternal. First segment of abdomen dull, microscopically reticulate-rugulose.

Pretoria. (G.A., coll.) Type in coll. Santschi.

Santschi describes the 1st segment as being finely striolate transversely. With a magnification of 60 diameters in a Zeiss stereoscopic binocular microscope, I fail to see any transverse sculpture; if anything, there is a faint indication of a longitudinal aciculation.

Race FEMORATUM, var. COLLUTA, Santschi.

Loc. cit., p. 129, ♂.

“♂, 2.6 mm. Dark red, abdomen black, the base slightly brownish. Legs and antennae rusty red. Frontal striae more widely spaced than in *arenarium*, with large punctured interspaces. Sides of the head and the occiput more delicately reticulate-rugose than in that variety. Pronotum with about 7 or 8 irregular and anastomosed rugae. Mesonotum reticulate-rugose, the dorsum of the epinotum and of the nodes reticulate-punctate, the latter also pitted. The middle of the 1st abdominal segment smooth and shining, the base and apical margin finely and transversely striolate. Head a little narrower than in *arenarium*; the scape extends beyond the hind margin of the head by as much as twice its own apical width. Mesoepinotal suture feeble. Epinotal teeth shorter than the space between them, as long as the episternal. Node of the petiole relatively lower and more elongate than in *arenarium*.”

Durban, (F. Demarchi leg.).

T. SERICEIVENTRE, race CONTINENTIS, FOREL.

(*T. Blochmanni*, race) Forel, Ann. Soc. Ent. Belg., vol. 54,
p. 426, ♂, 1910.

♂, 3.5 mm. Head and thorax dull, burnt-sienna brown, the posterior half of the thorax and the petiole somewhat darker. Abdomen dark brown, shining, the basal third in the middle dull and microscopically reticulate. The round spaces enclosed between the reticulations on the head are larger and more numerous than in *Gamaii*, occurring also on the posterior half of the median area. The rugae on the prothorax finer and farther apart than in *Gamaii*; the mesoepinotal suture barely defined. The nodes of the petiole are distinctly narrower than in *Gamaii*; the 1st is one-third longer than wide behind, and the 2nd is barely wider than long. Episternal teeth as long as the epinotal.

Natal, (Haviland leg.), ex Natal Mus. coll.

(G.A. coll.)

Race CONTINENTIS, var. PLATONIS, Santschi.

Loc. cit., p. 130, ♂.

"♂, 3-3.2 mm. Red, slightly dark. Antennae and legs rusty red, the femora darker. Abdomen blackish brown, the base somewhat paler. Frontal striae fine, interrupted, reaching the occiput; the rugae on the sides of the head coarser, enclosing large confluent punctures. Rugae on the pronotum irregularly longitudinal, narrower than the spaces between them, but more pronounced than in *continentis* or *eudoxia*. The rest of the thorax and petiole reticulate-punctate, with a few very fine rugae. In addition, large punctate pits occur on the petiole. Abdomen reticulate at the base, with some transverse and longitudinal striolae on the anterior third, with a fine reticulum superimposed. The rest of the abdomen shining. Head slightly shorter and with the angles more rounded than in *arenarium*. The epinotal and episternal teeth subequal. This form differs from race *continentis* by the stronger rugae on the pronotum, which is also flatter and distinctly marginate."

Basutoland, (Wroughton *leg.*).

Race CONTINENTIS, var. GEORGEI, Santschi.

Loc. cit., p. 131, ♀, ♀.

"♀, 3.5 mm. Colour like that of *Platonis*, but the base of the abdomen as dark as the rest of the segment. Sculpture similar to that of *Platonis*, but the space around the antennal sockets is less coarsely rugose. The pits on the posterior angles of the head shallower, the rugae on the pronotum more regular. The nodes are less pitted and the abdomen is smooth, barely finely reticulate at the base, not striolated. Head and antennae as in *continentis*, the pronotum feebly convex, (more so, and less distinctly marginate than in *Platonis*). The epinotal spines are longer and higher than in that variety, from which this one differs also by the more regular and thicker thoracic rugae.

♀, 3.8-5 mm. Sculpture stronger, the dorsum of the abdomen longitudinally striolate, reticulate at the base. Mesonotum and scutellum strongly and regularly striate lengthwise. Epinotal and episternal teeth large, horizontal, subequal. Petiole longer than in the ♂, with a strong prominence on the lower side of the 2nd node. ♂, 4.8 mm. long."

Bulawayo; type in coll. Santschi.

T. QUADRISPINOSUM, Emery, var. EUDOXIA, Forel.

This variety, described on p. 280 as a var. of *continentis*, must like that race be transferred to *quadrispinosum*. The race *elegans*, Santschi, (*loc. cit.*, p. 125), is only a synonym, differing from *eudoxia* type by no more than a slightly paler colour of the head; it is also derived from the same locality, Willowmore, C.P.

T. QUADRISPINOSUM, race BEIRAE, n. r.

♂, 3.8-4 mm. Pitch black; antennae and mandibles dark castaneous brown, the tibiae dark brown with the basal third paler or rusty red, tarsi dark brownish ochreous. Shining, the abdomen except at the base, strongly so. The sculpture of the head is similar to that of the type of the species, but the very fine fundamental reticulation is totally absent, (except near the occipital margin), being replaced by a more or less longitudinal rugulosity. The striae on the vertex between the frontal carinae are stronger and more widely spaced. The sides and posterior half of the head are sparsely, but distinctly, pitted. The pits are entirely wanting in the type of the species. The fundamental sculpture of the thorax and petiole is a very fine and superficial reticulation. The shoulders of the pronotum laterally, a round spot on the mesopleurae and the declivity of the epinotum lack this reticulation and are quite smooth. Pronotum with some widely spaced, thin and longitudinal striae, the anterior margin slightly rugose, the dorsum of the epinotum transversely and very superficially striate, the sides of the thorax obliquely striate, the striae fine and irregular. Nodes of petiole a little dull and coriaceous at the sides, sparsely pitted above. Basal 4th of abdomen microscopically reticulate-rugulose and only moderately shining. Legs shining.

Posterior angles of the head less rounded than in the type of the species, the pronotal shoulders more pronounced. Mesoepinotal impression deeper than in the type of the species, the dorsum of the epinotum narrower and less convex transversely, more distinctly delimited from the sides. The epinotal teeth relatively longer, a little longer than the episternal, and directed more upwards. The 1st node is only one-fourth longer than wide, more convex-sided than in the type of the species; its anterior face is vertical, not oblique and merging gradually into the peduncle as in the type of the species.

This race differs from the type of the species chiefly in the larger size, the black colour, the pitting of the head, and the shape of the 1st node.

Beira, P.E.A. Type in my collection.

(S.A.M., R.M., G.A. colls.)

T. QUADRISPINOSUM, race OTAVIENSIS, n. r.

♂, 3.6–3.8 mm. Head, thorax, petiole and legs pale burnt-sienna red, abdomen dark brown, paler at the base. A long, pale yellowish and outstanding pilosity on the body, fairly sparse. Legs with a long and oblique pubescence. Shining, especially the abdomen. Head with a few longitudinal and interrupted rugae on the sides, widely spaced and without anastomoses. The vertex with a few thin, interrupted striae. Promesonotum smooth. The mesopleurae and sides of the epinotum with oblique, widely spaced and large rugae which are continued transversely over the dorsum of the epinotum. Nodes of petiole with a few superficial striae at the sides. Abdomen smooth. Anterior angles of pronotum widely rounded. Dorsum of epinotum wider than in the type of the species, the epinotal teeth relatively longer and more acute. First node relatively shorter, hardly one-third longer than its peduncle, which is narrower than in the type of the species. Seen from the side, its anterior face is oblique, as in the type of the species, but its junction with the dorsal face is more rounded, and the latter is more convex lengthwise.

Tolerably distinct from the type of the species by its shining integument, loose sculpture and long pilosity.

Otavi, S. W. Africa, (Lightfoot *leg.*). Type in S.A.M. coll. (S.A.M., G.A. colls.)

T. MICROGYNA, Santschi.

Bull. Soc. Hist. Nat. Afrique du Nord, vol. 9, p. 132, ♀, 1919.

Some confusion has arisen as to the provenance of this insect, probably owing to the specimen having become loosened from its mount during transit through the post. Santschi remarks that it was received with *T. quadrispinosum*, race *elegans*, (= *eudoxia*), and that owing to its size, sculpture, etc., he regards it as a distinct species, probably parasitic. He also says that it comes from Natal, (Haviland *leg.*). This is erroneous, the ♂♂ specimens with which it was sent to Dr. Santschi, and mounted on the same card, being the race *continentis* of *sericeiventris*. In my opinion, it is the female of that race. Possibly owing to its rather unusually small size, (3.5 mm.), the same as that of the worker, one may assume that it exhibits a temporary social parasitism in the founding of its nests, similar to many palaearctic ants with microgynous females.

T. GLADSTONEI, Forel, var. SEPOSITA, Santschi.

Loc. cit., p. 131, ♀.

♀, 3.6-4 mm. Head and thorax of a brighter red colour than in the type of the species. Rugosity of the head and nodes of petiole less coarse than in the type of the species, the dorsum of the epinotum distinctly and transversely rugose. The striation at the base of the abdomen finer. Head plainly narrower, being nearly one-third longer than wide, (a little more than one-fifth in the type of the species), the posterior angles less rounded.

Victoria Falls, Belingwe, Bulawayo, S. Rhodesia.
(S.A.M., R.M., G.A. colls.)

T. BEQUAERTI, Forel, race BRUNI, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 285, ♀, 1917.

♀, 3 mm. Yellowish red, or pale burnt-sienna, antennae and legs paler, the apical half of the abdomen brown. Posterior half of the head and abdomen shining; thorax above slightly shining, the rest dull. The sculpture is like that of race *bulawayensis* but much more superficial, the posterior half of the head and the vertex between the frontal carinae being almost smooth, or with the striae nearly effaced. Base of abdomen striolate and dull as in *bulawayensis*. The sculpture of the promesonotum is also nearly effaced. The epinotal teeth are fully half as long again as the episternal, (in *bulawayensis* barely longer). Otherwise like race *bulawayensis*.

Hillside, Bulawayo; 1 ♀ in my collection.

Race BRUNI, var. MASHONA, n. v.

♀, 3 mm. Darker than the race, and like it with the head and thorax fairly shining. It differs from it and from the type of the species and race *bulawayensis* in having the dorsum of the epinotum strongly and transversely rugose.

Umtali, S.R. Nesting in sandy paths. Type in my collection.
(S.A.M., R.M., G.A. colls.)

T. MATOPOENSIS, n. sp.

♀, 2.5 mm. Blackish brown; mandibles, legs and antennae brownish ochreous, the club of the antennae darker. A few outstanding, pale

yellowish hairs on the head, thorax and petiole; legs and abdomen with a sparse, decumbent and very short pubescence, very scanty on the abdomen. Pronotum, petiole and abdomen smooth and very shining. Head moderately shining, with a fundamental and exceedingly superficial reticulation, effaced in the middle of the posterior half. The sides of the head are reticulate-rugose, the rugae thin and wide apart; behind the eyes the reticulation closer and finer. The demiscrobe is nearly smooth. The vertex has about 10 interrupted, longitudinal and thin striae. The clypeus is longitudinally striate (about 5 striae) and not carinate. Mandibles smooth and shining, sparsely punctured, armed with 3 teeth in front, indistinctly denticulate behind. Mesonotum and basal half of the dorsum of the epinotum finely striate, the striae wide apart, anastomosed here and there. Sides of thorax superficially reticulate, with a few thin rugae superimposed. Head, excluding the mandibles, a trifle longer than wide, slightly narrower in front than behind, the posterior angles widely rounded, the posterior margin moderately convex. First joint of flagellum a little longer than wide, the 2nd-5th fully twice as wide as long, the 6th a little wider than long. The scapes do not quite reach the occipital margin, the demiscrobes are indistinctly defined below. Eyes convex, fairly prominent, placed at the middle of the sides. Anterior margin of clypeus convex.

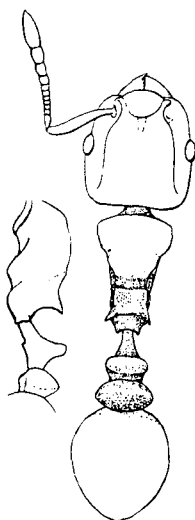


FIG. 68.—*T. matopoensis*.

Promesonotum with fairly distinct but rounded anterior angles; it is very convex transversely and lengthwise, as long as wide in front, narrowed at the promesonotal suture (which is defined only on the sides), and more so at the mesoepinotal suture. The latter is wide and shallow. Dorsum of epinotum quadrate, moderately oblique, about one-fifth wider than long. Epinotal teeth triangular, acute, a little longer than their basal width, a little shorter than the distance between their bases, twice as long as the episternal teeth; the declivity vertical, half as long as the dorsum of the epinotum. First node of the petiole squamiform, the dorsal edge rounded from front to back, higher than long and higher than the 2nd node. Seen from behind, it is slightly narrower below than above, and a little

wider than high; 2nd node transversely oval, convex transversely and from front to back, twice as wide as long, and about half as wide again as the 1st. Abdomen subglobose, a little longer than wide. Femora not greatly swollen. In general appearance this species is not unlike *T. (Xiphomyrmex) Humbloti*, Forel, but it is a true Tetramorium with 12-jointed antennae.

Mt. Bambata, Matopos, S.R., 4800 feet. Under moss and dead leaves.

Type in my collection.

TETRAMORIUM UMTALIENSIS, n. sp.

♂, 3 mm. Head and thorax varying from a pale dirty ochreous to pale yellowish brown, the head usually darker than the thorax. First abdominal segment brown, the rest brownish ochreous. Legs and antennae ochreous, the club of the latter reddish ochreous. Body with an erect, pale yellowish, long and coarse pilosity, fairly abundant, longest on the thorax and nodes. Legs and antennae with a sparse and decumbent pubescence. Head and dorsum of thorax longitudinally reticulate-rugose, the rugae widely spaced, thin, prominent and of a darker colour than the rest of the integument, the spaces between the rugae smooth and shining. A distinct demiscrobe present, closely and superficially reticulate and fairly dull. Mandibles dull, closely

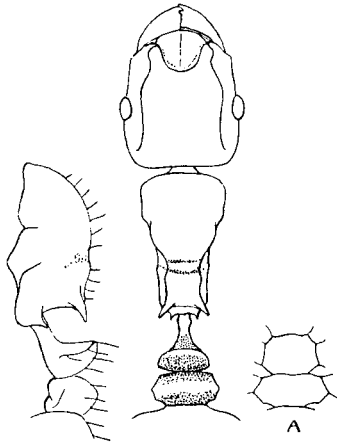


FIG. 69.—*T. umtaliensis*.
A, petiole seen from behind.

and finely striate. The clypeus has 4 or 5 longitudinal rugae, the median one strongest. Sides of thorax shallowly reticulate-punctate, with an irregular rugose reticulum superimposed; declivity of epinotum transversely striate. Nodes of petiole shining, sparsely and feebly rugose. Abdomen smooth and shining, the basal fourth of the 1st segment strongly striate fanwise. The rugae of the head and thorax are finer than in the race *do* of *squaminode*, and much more anastomosed. Head slightly narrowed anteriorly, about one-sixth longer than wide behind, the posterior angles rounded, the posterior margin straight. Eyes convex and prominent, placed at the middle of the sides. Frontal carinae widely divergent backwards, forming the

upper margins of the demiscrobes; 2nd-7th joints of the flagellum twice as wide as long. Pronotum in front transversely convex; the promesonotum is a little longer than wide in front, evenly convex from front to back in profile, much less constricted between the pronotum and mesonotum, and between the latter and the epinotum, than in *squaminode*, race *do*, and longer than in that species. Dorsum of epinotum quadrate, moderately oblique, as long as wide, and as long as vertical declivity; epinotal teeth a little longer than their basal width, as long as the space between their bases, and three times longer than the episternal teeth. First node of petiole squamiform, as long as its peduncle, one and a half times higher than long below, the anterior face vertical, convex transversely, the posterior face convex from side to side and from above to below, the dorsal edge rounded. Seen from behind, the node is wider below than above, irregularly hexagonal, each of the angles ending in a long hair. The 2nd node, seen from above, is also angulated in outline, and is two and one-third times wider than long, and about one-third wider than the 1st. Legs shining, the femora moderately swollen.

Umtali, S.R. The nests, of which several were examined, were situated in a hard sandy path. The entrances are about 2 mm. wide, surrounded by a low wall about 1 to 2 mm. high, composed of woven grass roots and fibre.

This species belongs to the *squaminode* group, in which it is distinguished by the finer sculpture, the narrower thorax, the strong pilosity and the angulated outline of the nodes.

Type in my collection. (S.A.M., R.M., G.A. colls.)

TETRAMORIUM REPENTINUM, n. sp.

♂, 2.7-2.9 mm. Head and thorax dark castaneous brown, petiole and abdomen piceous or sometimes entirely piceous, legs dark ochreous, mandibles and antennae reddish ochreous. Abdomen, petiole and epinotum, except its base, smooth and shining. The rest of the body dull. Head longitudinally and very regularly striate from the anterior margin of the clypeus to the occipital margin, somewhat as in *T. grandinode*, Santschi; the striae also extend over the floor of the distinct demiscrobes. Thorax longitudinally rugose as far as the base of the epinotal spines, also transversely rugoso-reticulate in front, at the base of the mesonotum and of the epinotum.

Pilosity sparse, composed of suberect and fairly short golden yellow hairs, longest on the petiole, and more scanty on the thorax than elsewhere. Antennae and legs sparsely pubescent. Head as wide as

long, narrowed in front, the sides convex, the posterior margin shallowly concave. The posterior margin of the median area of the clypeus indistinct, barely defined by a slight thickening of the striae, and the posterior margins of the lateral pieces not raised to form a trenchant ridge. Anterior margin of the clypeus straight. Mandibles smooth, shining, sparsely punctured, armed with two strong apical teeth, indistinctly dentate behind them. Antennae 12-jointed, the scapes as long as the demiscrobes, the 2nd joint of the flagellum a little wider than long, the 3rd-8th joints much wider than long. Eyes large, placed behind the middle of the sides. Promesonotum a little wider than long, widest at the shoulders, which are rounded.

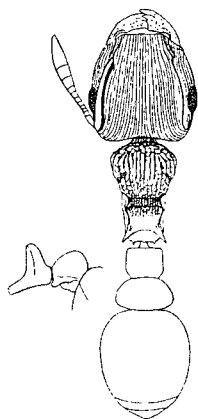


FIG. 70.
T. repentinum, n. sp.

Mesoepinotal suture broad and fairly deep, bounded by a raised line at the base of the epinotum. Dorsum of epinotum slightly narrowed towards the spines, a trifle wider at the base than long. Epinotal spines acute, divergent, directed obliquely upwards and backwards, a little longer than their basal width. Declivity vertical, a little shorter than the dorsum. Episternal teeth very small and obtuse. The petiole intermediate in structure between that of *T. grandinode*, Santschi, and *T. squaminode*, Santschi. The 1st node cuneiform, the dorsal edge fairly acute; seen from above, the sides and dorsal edge meet almost rectangularly, the posterior face moderately convex and a little wider than long, the anterior face vertical and convex transversely. The 2nd node is transversely oval, only a little wider behind than in front, convex above from back to front, nearly half as wide again as the 1st node, and three-fourths wider than long, produced on each side anteriorly and below into a rounded, slightly flattened (from above to below) and prominent tubercle, pointing forwards. Abdomen one-fifth longer than wide. Femora moderately swollen.

Sawmills, Umgusa River, S.R. ; Umtali, S.R., in sandy soil.

A peculiar species characterised by its unusual habits and by the very regular sculpture of the head, by the absence of a trenchant ridge behind the lateral pieces of the clypeus, and by the shape of the petiole.

It is a highly myrmecophagous species, preying chiefly on the ♂♂ of small Pheidoles, (*punctulata*, *Arnoldi*, etc.), but also occasionally on *Monomorium* and other *Tetramorium*. At Umtali several nests

were examined. All round the entrances to the nests the ground was strewn with the carcasses of other ants, and workers were seen coming in from all sides, each one carrying in its jaws some unfortunate ant victim, usually gripped behind the head or between the epinotum and petiole. Type in my collection.

T. GUINEENSE Fab., race STRIATUM, Stitz.

Page 308. "Race *striatum*," this should read "Race *cristatum*."

TETRAMORIUM SOLIDUM, Emery, var. TUCKERI, n. v.

♂, 4.8-5.1 mm. This differs from the type of the species as follows:—

The colour is black; base and apices of the femora, tibiae, tarsi, mandibles and antennae more or less ferruginous. The sculpture is much stronger, especially on the head, which is very evenly and longitudinally striate, the spaces between being about 2 to $2\frac{1}{2}$ times wider than the striae. The mesoepinotal suture is distinct and the sides of the epinotum are vertical, the dorsum thereby sharply marginate at the sides, parallel-sided and concave transversely. The spines are less divergent. The 1st node of the petiole is reticulate-punctate, and has also some strong rugae superimposed concentrically; the 2nd node transversely rugose, its ventral surface produced on each side into a strong triangular tooth as long as its basal width (much longer than in the type of the species). The basal third of the abdomen is longitudinally rugulose.

♀, 7 mm. Mesonotum longitudinally striate, with finer striae in the spaces between the large striae. The suture between the scutellum and the paraptera deeply clathrate. Epinotal teeth shorter than in the ♂, shorter than their basal width, horizontal and not divergent. Dorsal face of the 1st node flat and almost quadrangular, the sides feebly convex, the anterior and posterior margins straight, one and three-quarter times wider than long. Second node like that of the ♂, less convex transversely, half as wide again as the 1st, and at least twice as wide as long. Wings brownish yellow, nervures and stigma ochreous.

S. W. Africa (R. W. E. Tucker).

In one specimen, ♀, taken on the same occasion as the others, the epinotum has the sides oblique and convex like the type of the species, and the dorsum is neither marginate laterally nor excavated. The colour of the type of the species is described by Emery as piceous, but in the paratypes in the S. A. Museum, the colour is not darker than chestnut brown.

(S.A.M., G.A. colls. Types in S.A.M. coll.)

TETRAMORIUM PERINGUEYI, n. sp.

♂, 4.4–4.6 mm. Dark brick-red, the anterior two-thirds of the head, the apical half or two-thirds of the abdomen, the middle and hind femora (except at the base and apex) darker or reddish brown. In some specimens the apex of the abdomen is almost piceous. Head, thorax and petiole moderately shining, the spaces between the rugae quite shining. Legs and abdomen shining, the basal fourth of the latter somewhat dull, longitudinally and closely striate and shallowly punctured. Pilosity long, erect and abundant all over, including the legs and antennae, the hairs truncate or very blunt at their tips and yellowish white. The hairs on the anterior margin of the clypeus and on the apex of the abdomen longer and pointed. A scanty pubescence present only on the flagellum. The sculpture of the head and thorax like that of *Emeryi*, race *crisulatum*, but the mesonotum and epinotum are just as coarsely rugoso-reticulate as the pronotum, and the longitudinal striae on the middle (transverse) third of the head are divergent behind. Sides of the thorax longitudinally rugoso-striate. Nodes of petiole coarsely and irregularly rugose. Tibiae and scapes finely and longitudinally striolate and fairly dull. Head quadrate, as wide as long, as wide in front as behind, the sides parallel, the posterior margin almost straight or only very shallowly concave in the middle, the posterior angles widely rounded. Clypeus twice as wide as long, the anterior margin widely and deeply emarginate, with about 5 or 6 longitudinal striae, the median one not stronger than the others. Mandibles strongly and longitudinally striate, subopaque, with about 6 teeth. Frontal carinae divergent, ending at about the level of the eyes and continued behind them as a stria, not forming the least trace of a scrobe. Eyes not large, feebly convex, placed slightly behind the middle. The scapes reach the posterior fifth of the head; 3rd joint of flagellum a little wider than long, all the other joints longer than wide. Head two-thirds wider than the thorax. Thoracic sutures obsolete. Seen in profile, the dorsum of the thorax forms a continuous and fairly low convexity from the anterior margin to the base of the spines. Thorax slightly constricted between the meso- and epinotum; the promesonotum submarginate in front, the shoulders depressed and subangular, as long as wide between the shoulders. Dorsum of epinotum as long as the vertical declivity. Spines thin, acute, moderately divergent, directed obliquely backwards, as long as the interval between their bases. The shape of the nodes is intermediate between that of *Emeryi-crisulatum* and *T. guineense*. The peduncle

of the 1st joint is as long as the node ; the latter has the anterior and posterior faces vertical, the dorsal face trapezoidal and nearly flat, three-fifths wider behind than in front. The 2nd node is almost twice as wide as long in the middle, the anterior margin convex, the posterior margin straight, the sides straight and slightly convergent posteriorly, the dorsal face convex. The 2nd node is also hardly shorter than, and nearly one-third wider than the 1st. Abdomen truncate at the base. Femora only moderately swollen.

Kimberley, (Power).

Allied to *Emeryi* but differing markedly in the shape of the head, the abundant, erect and coarse pilosity, the deeply emarginate clypeus and the absence of the raised line between the pronotum and mesonotum.

(S.A.M., R.M., G.A. colls. Type in S.A.M. coll.)

TETRAMORIUM ARGENTEOPILOSUM, n. sp.

♂, 3.3 mm. Black ; the anterior margin of the head narrowly, the mandibles, flagellum, antennal sockets, basal third of the scapes, the apex of the epinotal declivity, the coxae and tarsi, ferruginous ; femora and tibiae dark reddish brown, paler at their bases and apices. Head and thorax with a few whitish and thick erect hairs ; petiole and abdomen with a moderate pilosity composed of long, obliquely exserted, thick, pointed white hairs, somewhat glistening ; legs and antennae sparsely pubescent.

The fundamental sculpture of the head, thorax, nodes of petiole and basal fourth of the 1st abdominal segment is a close reticulate puncturation, very distinct on the meso- and epinotum, very superficial on and just behind the clypeus. Clypeus carinate in the middle, its anterior margin convex. The clypeus and vertex between the frontal carinae longitudinally and fairly evenly striate, the striae hardly half as wide as the spaces between them. Sides of the head reticulate-rugose, the rugae not extending over the space adjacent to and below the frontal carinae, thereby forming an indistinct demiscrobe. Mandibles shining, feebly striate and sparsely and finely punctured. The pronotum has a few fine longitudinal striae, which do not reach as far as the mesonotum. The legs and

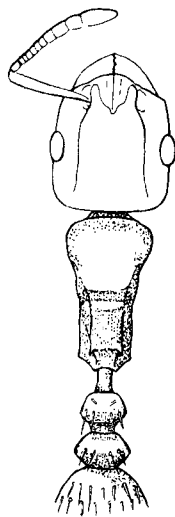


FIG. 71.
T. argenteopilosum.

abdomen, excepting the base of the latter, are shining, the rest of the body is dull.

Head slightly longer than wide, the sides feebly convex, barely narrower in front than behind, the posterior margin straight, the posterior angles rounded. The scapes extend back to the posterior fifth of the head; 1st joint of the flagellum nearly twice as long as wide, 2nd-7th joints twice as wide as long, the 8th one and a half times wider than long. Eyes not very prominent, placed at about the middle of the sides. Promesonotal suture obsolete, the promesonotum fairly convex in front, the shoulders rounded, slightly longer than wide in front. Mesoepinotal suture fairly deep and wide, the thorax moderately constricted at that point. Dorsum of epinotum submarginate at the sides, sloping gradually downwards from the base, its junction with the declivity rounded, about one-third longer than wide, nearly parallel-sided, as long as the vertical declivity. Epinotal teeth small, triangular, a little wider at the base than long, less than half as long as the space between their bases. Episternal teeth reduced to small rounded lamellae, much shorter than the epinotal teeth. First node subcuboid, higher than long, as long as its peduncle, the anterior and posterior faces subvertical, the dorsal face slanting posteriorly, subtrapezoidal and nearly half as wide again as long. Second node transversely lozenge-shaped, convex from front to back above, one-fourth wider than the 1st, and half as wide again as long.

♀, 4.2 mm. Sides of pronotum and upper half of mesopleurae finely and longitudinally striate. Pronotum narrowly exposed above, the shoulders subangular, coarsely rugose. Mesonotum and scutellum longitudinally striate. Nodes of petiole with a few rugae above. Basal half of abdomen reticulate-punctate. Epinotal teeth shorter than in the ♂, the dorsal face of the 1st node shorter, nearly twice as wide as long. Otherwise like the ♂.

Sawmills, Umgusa River, S.R., nesting in sandy soil.

Type in my collection.

(S.A.M., R.M., G.A. colls.)

TETRAMORIUM SOMNICULOSUM, n. sp.

♂, 2.8-3.2 mm. Burnt-sienna or pale mahogany brown, the legs and antennae paler than the body. Legs and abdomen shining, the rest almost dull to the naked eye, but under a low magnification the spaces between the rugae appear quite shining. Mandibles, legs and antennae with a yellowish, decumbent and moderately abundant pubescence.

The pubescence on the abdomen is nearly decumbent, yellowish golden and short, composed of thin pointed hairs intermixed with somewhat flattened or clavate and obtuse hairs, very evenly distributed; also a few hairs on the clypeus, otherwise glabrous. Head and thorax very coarsely rugose, the rugae emphasised longitudinally, raised and trenchant; here and there, especially on the cheeks, back of the head and the mesoepinotum more or less reticulate-rugose. Sides of the thorax longitudinally rugose or almost sulcate. Nodes of petiole reticulate-rugose above, the sides and the anterior peduncle finely reticulate-punctate. Abdomen sparsely and finely punctured.

Head subquadrate, barely longer than wide (excluding the mandibles), almost as wide in front as behind, the sides moderately convex, the posterior margin shallowly concave in the middle. Mandibles finely striate and punctate, moderately shining. Clypeus with a strong median carina, distinctly impressed in the middle behind the feebly emarginate anterior margin. The frontal carinae are sharply defined and form the upper margin of a demiscrobe, which extends back as far as the posterior sixth of the head. The scapes are as long as the demiscrobes; 2nd-8th joints of the flagellum wider than long. Eyes small, composed of about 15 facets, placed at the middle of the sides of the head.

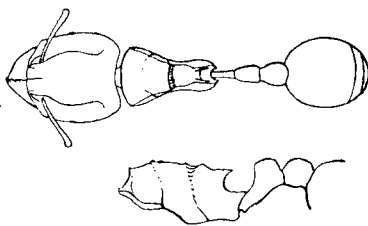


FIG. 72.
T. somniculosum. ♀

Pronotum sharply marginate in front, the margin trenchant and high. Sides of the thorax vertical. The position of the obsolete promesonotal suture is indicated by a sharp transverse ridge. Mesoepinotal suture wide and shallow, bounded on the dorsum in front and behind by a strong transverse ridge. Dorsum of epinotum narrow, marginate laterally, the epinotal teeth acute, horizontal, hardly as long as the interval between their bases and very little longer than the episternal teeth; their lower margins are continued down the declivity and join the episternal teeth. Petiole long; the 1st joint distinctly compressed laterally, the peduncle about as long as the node, which, seen from above, is one and three-quarter times longer than wide behind. The 2nd node is a little longer than wide, also a little wider and longer than the 1st. Abdomen globose.

The sculpture in this insect is exceedingly coarse, or almost sulcate, the rugae standing out very prominently. The long

petiole and the sharp anterior margin of the pronotum are also very distinctive.

♀, 3.7 mm. Colour of the body darker than in the ♂, more vandyke-brown. Sculpture and pubescence as in the ♂; mesonotum longitudinally sulcate, without transverse rugae, scutellum very widely reticulate-rugose. Dorsum of epinotum transversely striate between the epinotal teeth, which are wider apart and shorter than in the ♂. Pronotum sharply marginate in front as in the ♂. Petiole similar to that of the ♂, but the anterior margin of the dorsal face of the 1st node is straight, not convex. Wings slightly brownish, nervures and stigma pale yellow. Otherwise like the ♂.

♂, 3 mm. Head piceous, thorax and abdomen dark brown, legs and antennae pale straw-yellow, mandibles ochreous. Pubescence as in the ♀. Head moderately shining, longitudinally striolate, transversely so behind the ocelli, the cheeks in front also very finely reticulate-punctate. Mandibles fairly large, 6-dentate, smooth and shining. Median area of the clypeus with 4 longitudinal raised lines, fairly convex behind. Eyes not very convex, occupying less than the anterior half of the sides. Ocelli small. The scapes do not extend back as far as the posterior ocelli. Head as long as wide, the sides and posterior margin feebly convex. The 2nd joint of the 9-jointed flagellum is as long as the scape, the 1st and 3rd joints subequal and barely longer than wide.

Mesonotum smooth and shining, with only a few striae near the parapsidal sutures, the Mayrian furrows well defined and clathrate. Scutellum reticulate-rugose. Epinotum finely reticulate-punctate and dull at the sides, slightly shining above and over the declivity; the latter is subvertical, marginate at the sides and longer than the dorsum. Petiole shorter than in the ♀ or ♂, the 1st node less compressed. Wings as in the ♀.

Amatongas Forest, Portuguese E.A. A very sluggish species; the nest was formed in the débris between the exposed roots of a tree.

(S.A.M., R.M., G.A. colls. Types in my collection.)

TETRAMORIUM SETIGERUM, Mayr, race *QUAERENS*, Forel,

var. *AMATONGAE*, n. v.

♂, 4 mm. Head and thorax more shining than in the type of the race, owing to the total absence of the fundamental reticulate-punctate sculpture between the rugae. The 2nd-4th joints of the flagellum are distinctly wider than long (as long as wide in the race), the 5th and 6th as long as wide. Otherwise like the type of the race.

Amatongas Forest, Portuguese E.A. Nesting under the bark of a decayed tree.

(S.A.M., R.M., G.A. colls. Type in my collection.)

TETRAMORIUM SEMIRETICULATUM, Arnold.

♀, (hitherto undescribed), 3.2 mm. Piceous; legs, antennae and mandibles pale brown. Sculpture similar to that of the ♂, but stronger, the mesonotum and scutellum irregularly reticulate-rugulose and with a few longitudinal rugae superimposed, basal fourth of abdomen reticulate-punctate and dull, the rest smooth and shining. Epinotal teeth much larger proportionately than in the ♂, nearly as long as wide at the base. Otherwise like the ♂.

Hillside, Bulawayo. Type in my collection.

TETRAMORIUM AKERMANI, n. sp.

♂, 3.5–3.7 mm. Reddish or castaneous brown, the abdomen dark brown, legs and antennae yellowish brown, mandibles reddish ochreous. Head longitudinally striate between the frontal carinae, the striae widely spaced, large, and connected by a few transverse striae. Sides of head strongly reticulate-rugose, the rugae emphasised longitudinally, the transverse rugae extending across the floor of the demiscrobes. Clypeus with about five longitudinal rugae, the middle one strongest but hardly forming a distinct median carina. Mandibles shining, finely and sparsely punctured. Thorax longitudinally and coarsely rugose, in front more reticulate-rugose, elsewhere with a few transverse anastomoses. The rugae end just before the epinotal spines, the space between the spines and the declivity is superficially reticulate and shining. Sides of thorax irregularly reticulate-rugose, the spaces between feebly reticulate-punctate. Nodes of petiole shining almost smooth, with only a few feeble striae. Abdomen smooth and shining. The pilosity on the body is composed of long, thin, yellowish white hairs, fairly scanty except on the abdomen. Legs and antennae with fairly long and oblique pubescence. Head, excluding the mandibles,

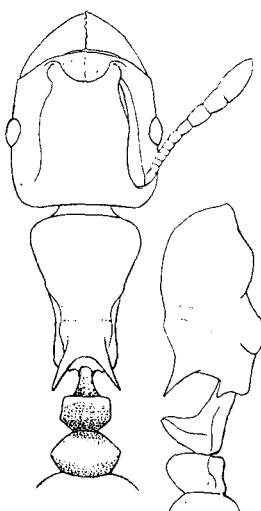


FIG. 73.—*T. Akermani*.

very little longer than wide, widest a little behind the eyes, the posterior angles rounded, the posterior margin almost straight. Eyes moderately large, placed at about the middle of the sides. Frontal carinae widely divergent, extending back to the posterior 6th of the head, forming the upper walls of well-defined demiscrobes. Scapes as long as the latter; 1st joint of the flagellum half as long again as wide, the 2nd-5th joints about twice as wide as long, the 6th and 7th about one and a half times wider than long. Mandibles with six blackish teeth, the three anterior ones largest. Anterior margin of clypeus feebly excised in the middle.

Promesonotum fairly convex transversely in front, moderately so lengthwise, slightly wider in front than long in the middle, the promesonotal suture obsolete, the mesoepinotal indistinct above. The dorsum of the epinotum is about as wide as long; the epinotal spines are long, acute, divergent, quite twice as long as their basal width, longer than the space between their bases, three times longer than the episternal teeth, the latter acute. First node of petiole squamiform, as long as its peduncle, the anterior face vertical and feebly convex transversely, shorter than the posterior face which is almost flat and subvertical. Seen from behind, the scale is subrectangular, about as high as wide above, narrowed towards the base. Second node transversely oval, half as wide again as long, and not quite half as wide again as the 1st. Abdomen globose. Pietermaritzburg (type) and Majuba, Natal, (*leg.* C. Akerman); Durban, (*leg.* C. P. v. d. Merve). The latter differ slightly in having the pilosity shorter and composed of blunt hairs, not finely pointed as in the specimens from the other localities mentioned. Apparently allied to *Titus*, Forel, from which it differs, judging by the description alone, by the larger size, the not distinctly carinate clypeus, and by having the promesonotum sculptured all over. The 2nd node is also narrower, being only half as wide again as the 1st, (nearly twice in *Titus*). Type in my collection.

AKERMANI, var. FRIGIDUM, n. v.

♂, 3.5 mm. Head, petiole and abdomen dark brown, legs, antennae and mandibles pale brownish yellow, the club of the antenna brown. Clypeus with a distinct median carina. The upper surface of the head between the frontal carinae is strongly and very regularly striate lengthwise, more strongly so than in the type of the species. Mesoepinotal suture wide and fairly shallow, but deeper than in the type. Epinotal spines long and thin, as long as, or a little longer than the interval between their bases. Petiole just like that of the type of the

species, the scale of the 1st joint only a trifle thicker. Pilosity yellowish, erect, composed of short, thick and fairly blunt hairs. Otherwise like the type of the species.

Matroosberg, Hex River Mts., Cape Prov., 5000–7000 ft. (R. W. E. Tucker).

(S.A.M., R.M., G.A. colls. Type in my collection.)

var. *DRAKENSBERGENSIS*, n. v.

♂, 2.4–3.2 mm. Yellowish brown, the head sometimes darker, legs and antennae ochreous, the club brown. The sculpture resembles that of var. *frigidum*, but the longitudinal rugae on the thorax are somewhat coarser and wider apart, the sculpture of the head finer, especially on the cheeks. The promesonotal suture is feebly indicated in the largest ♂♂, and in them the mesoepinotal suture is also fairly distinct, but very shallow in the smaller ♂♂. Pilosity as in *frigidum*. The posterior face of the scale of the petiole is feebly convex (nearly flat in *frigidum*), and the 2nd node is a trifle narrower, or barely more than one-third wider than the 1st. Otherwise like *frigidum* and the type of the species.

Mountains of Natal, 5300 ft. (Haviland), ex Natal Mus. coll.

This form is peculiar in its wide range of variation in size, but apart from this feature and those enumerated above, I can see no other differences between it and var. *frigidum*. The shape of the scale in this variety and in var. *frigidum* is very much like that of *T. (Xiphomyrmex) Weitzckeri*, but the dorsal edge is not broad as in that species but narrow and almost trenchant.

(G.A. coll.)

TETRAMORIUM JEJUNUM, n. sp.

♂, 2.7 mm. This species belongs to the *T. Titus* group, having the 1st node of the petiole squamiform. Very pale straw-yellow, the club of the antennae a little darker or ochreous. Shining. Head longitudinally striate above between the frontal carinae, (about 6 or 7 striae), the cheeks reticulate-rugose, the rugae far apart, the spaces in between smooth and shining. Clypeus with a strong median stria and one or two thinner striae on each side. Demiscrobe smooth and shining. Thorax reticulate-rugose, the rugae very wide apart. Declivity and apical half of the dorsum of the epinotum and all the rest of the body smooth and shining. Pilosity pale yellowish, fairly short and blunt,



FIG. 74 — *T. jejunum*.

sparsely distributed all over. Pubescence oblique and scanty, present only on the legs and antennae.

Head quadrate, one-fifth longer than wide, nearly as wide in front as behind; the sides nearly straight, the posterior margin straight, the posterior corners narrowly rounded. Mandibles shining, feebly punctured, armed with 6 small teeth. Anterior margin of the clypeus straight. Eyes convex and fairly large, placed just behind the middle of the sides. Frontal carinae moderately sinuate, extending back nearly as far as the posterior margin and forming the upper margin of a distinct demiscrobe. The scapes are as long as the demiscrobes; 2-4th joints of the flagellum twice as wide as long, the 5th joint nearly so. Promesonotal suture obsolete, the thorax slightly constricted between the pronotum and mesonotum, and more deeply at the mesoepinotal suture, the latter fairly shallow. Seen in profile, the promesonotum forms an even convexity which rises gradually as far as the mesoepinotal suture. Dorsum of epinotum as long as wide at the base, with a raised transverse line or ruga near the base, slightly narrowed towards the apex, submarginate laterally, concave between the spines. The spines are directed obliquely backwards and outwards, acute, twice as long as their basal width and as long as the interval between their bases; declivity vertical, as long as the dorsum, episternal teeth small and acute. The peduncle of the 1st joint of the petiole is as long as the node; the latter is subsquamiform, or seen from the side cuneiform, the anterior face vertical and convex from side to side, the posterior face convex from above to below. Seen from behind, the scale is subovate, its dorsal edge trenchant and strongly convex from side to side. The 2nd node is transversely oval, convex above, one-fourth wider than the 1st, the ventral surface produced on each side into an elongate tubercle which ends in a rectangle in front. Femora feebly swollen.

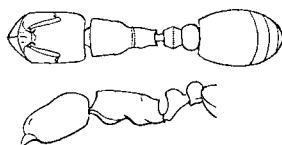
Sawmills, Umgusa River, S. Rhodesia. Nesting in sandy soil, and very easily overlooked, since its colour matches that of the sand. A species distinctly defined by the transverse ridge near the base of the epinotum.

Type in my collection.

TETRAMORIUM WARRENI, n. sp.

♂, 2.1 mm. Pale ochreous, smooth and shining, the anterior half of the head and the sides of the thorax very feebly and longitudinally striate or striolate. Posterior half of the head feebly and very sparsely punctured. Pilosity thin, short, erect and scanty, oblique

on the legs and antennae. Pubescence wanting. Head elongate quadrate, about one-fourth longer than wide, parallel-sided, the posterior margin feebly concave, the posterior half of the head a little thicker than the anterior, more convex above when seen from the side. Clypeus vertical in its anterior half, with 3 longitudinal raised lines, not carinate. Mandibles slightly shining, feebly striate, 6-dentate, the teeth brown. Frontal carinae exceedingly short, not extending beyond the posterior margin of the indistinct frontal area. The scapes extend only a little beyond the middle of the head; the 2nd-7th joints of the flagellum twice as wide as long, the 8th one and a half times wider than long. Eyes very small, composed of 2 or 3 facets, placed at about the middle of the sides. Promesonotum distinctly marginate in front, feebly so at the sides, trapezoidal, a trifle longer than wide in front, the promesonotal suture entirely obsolete. The thorax is fairly strongly constricted at the mesoepinotal suture, which is very shallow or nearly obsolete. The dorsal profile of the thorax nearly flat. Dorsum of epinotum submarginate at the sides, oblique, a little longer than wide, widest just beyond its base, the teeth very small, acute and oblique, hardly as long as their basal width and not longer than the episternal teeth. Declivity vertical, marginate, shorter than the dorsum. Peduncle of the 1st joint of the petiole thick, not quite as long as the node, the latter with a short and vertical anterior face, a convex and oblique posterior face, and a dorsal face which is widest behind and twice as wide as long. Second node transversely oval, convex above transversely and lengthwise, very little wider than the 1st. Abdomen half as long again as wide.

FIG. 75.—*T. Warreni*.

Natal, (Haviland). I have much pleasure in naming this species in honour of Dr. E. Warren, Director of the Natal Museum.

The nearest allies to this species in our fauna are *T. subcoecum-inscia*, Forel, and *T. Traegaordhi*, Santschi. In *Warreni* the 1st node is much flatter above than in *subcoecum*, and the head is much more elongate than in *Traegaordhi*.

Ex Natal Mus. coll. Type in my collection.

TETRAMORIUM VEXATOR, n. sp.

♂, 3.8 mm. Yellowish brown (dark raw umber), the sides of the thorax, the legs and mandibles a little paler or more yellow. Head fairly dull, thorax moderately shining, the declivity and petiole a little

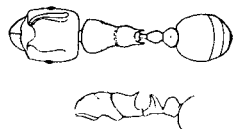


FIG. 76.
T. vexator. \times ca 16.

more so, the abdomen and legs smooth and very shining, the legs also very finely and sparsely punctured. Head strongly, longitudinally and regularly striate, the cheeks in front with a few transverse strands between the longitudinal ones, the spaces between the striae at least three times as wide as the striae themselves. Clypeus striated like the rest of the head, its anterior margin straight, feebly excised in the middle. Mandibles 5-dentate, smooth, shining and sparsely punctured. Thorax longitudinally rugoso-striate with a few transverse strands here and there, the striae on the dorsum quite as widely spaced as those on the head, those on the sides closer together; the striae become effaced towards the posterior margin of the thorax, and the declivity is smooth in the middle, finely rugose at the sides. Both nodes smooth and shining, the posterior face of the 1st node coriaceous at the margins. Pilosity yellowish, oblique, long and thin, fairly sparse all over, shorter and almost decumbent on the legs and antennae; flagellum and tarsi with a thin pubescence.

Head almost square, the corners rounded, barely narrower in front than behind. The frontal carinae extend back as far as the posterior fourth of the head and form the upper boundary of a demiscrobe, which is slightly shining and almost smooth. Scapes as long as the demiscrobes; 2nd-6th joints of the flagellum wider than long. Eyes placed at the middle of the sides. Promesonotum submarginate in front, not longer than wide in front, trapezoidal. Promesonotal suture defined only at the sides. Mesoepinotal suture wide but shallow. Dorsum of epinotum submarginate, widest a little beyond its base, very little longer than wide. Epinotal spines nearly vertical, acute, barely divergent, a little longer than their basal width and as long as the interval between them. First node of petiole, seen from the side, subconical or subcuneiform, as high as the whole joint is long and longer than its peduncle, narrowed towards the summit which is transverse, the anterior face vertical and convex transversely and vertically. Second node transversely oval, nearly one-third wider than the 1st, a little wider behind the middle than in front of the same, very convex above. Abdomen subcircular, hardly longer than wide. Femora swollen.

Pietermaritzburg (Dr. C. Akerman), *ex* Natal Mus. coll. Type in my collection.

Not unlike *T. Popovici*, Forel, but with quite a differently shaped 1st joint of the petiole, stronger sculpture and smooth mandibles.

TETRAMORIUM INCRUENTATUM, Arnold.

Santschi, (as *Rhoptromyrmex Arnoldi*), Ann. Soc. Ent. France,
vol. 84, p. 503, ♂, 1915.

Ann. Soc. Ent. France, vol. 85, p. 286, 1916.

♂, 2.5 mm. Pale straw-yellow, the anterior third of the head a little darker. Dull, the abdomen and legs slightly shining. The fundamental sculpture on the head, thorax and petiole consists of a fine reticulate puncturation, very superficial on the vertex and on the nodes. In addition the head and pronotum are longitudinally striate, the cheeks in front partly reticulate-rugose. Abdomen microscopically alutaceous and smooth. Pilosity erect, short and thick, present only on the anterior margin of the clypeus, the 2nd node and on the abdomen. A moderate pubescence on the legs and antennae.

Head quadrate, hardly longer than wide, the sides straight, the posterior angles rounded. Median area of clypeus feebly carinate, its anterior margin arcuate. The posterior lateral margins of the clypeus are raised to form a transverse ridge (in the manner typical of the genus). Mandibles finely striate, with a few large punctures behind the masticatory margin, which is indistinctly dentate. The frontal carinae are continued back as fine lines as far as the posterior third of the head. Antennae 12-jointed, the 2nd-8th joints of the flagellum much wider than long. Eyes large, convex, placed at the middle of the sides. Head wider than the thorax. Promesonotum trapezoidal, as wide in front as long, submarginate in front, the shoulders fairly distinct and narrowly rounded, the promesonotal suture obsolete. The thorax is fairly strongly constricted at the mesoepinotal suture, which is distinct. Dorsum of epinotum two-thirds longer than wide, widest in the middle, convex transversely, straight and oblique lengthwise, ending on each side in a blunt and low tubercle; the declivity subvertical, half as long as the dorsum. Peduncle of the 1st joint of the petiole as long as the node. The anterior face of the latter is vertical, convex transversely and longer than the posterior face, which is convex from above to below; its dorsal face, seen from above, is nearly semi-elliptical, about as long as wide behind, the posterior margin convex. Second node half as wide again as long, and half as wide again as the 1st, the lower surface furnished on each side with an elongate and rounded lobe.

Victoria Falls; nesting in sandy soil.

In the second reference cited above, Dr. Santschi, who described the species originally as a *Rhoptromyrmex*, suggests that it should

perhaps be transferred to the genus *Tetramorium*. I have adopted this suggestion, since it seems to me that the presence of the lateral ridges of the clypeus and the not compressed 1st node preclude the species from being attached to *Rhoptromyrmex*.

Whether *Triglyphothrix* be regarded as a subgenus of *Tetramorium* or not, the specific name is preoccupied in *Triglyphothrix Arnoldi*, Forel, and I have therefore altered the name of this species.

Var. LUTEOLUM, n. v.

♂, 2.3–2.5 mm. Head and antennae pale reddish ochreous, the rest pale ochreous, but the abdomen somewhat darker than the thorax, brownish yellow over its middle third. The



FIG. 77.
T. incruentatum type. var.
Luteolum.

sculpture of the head is coarser than in the type of the species, the longitudinal striae on the vertex less continuous. The head is also narrower. The mesoepinotal suture deeper; the dorsum of the epinotum is distinctly marginate at the sides and is flat transversely, it ends in larger apical tubercles, these being almost blunt and triangular teeth. The dorsal face of the 1st node is wider, or half as wide again as long, its anterior margin semicircular, not semi-elliptical as in the type of the species. The 2nd node is two-thirds wider than long and more angular at the sides. Otherwise like the type of the species.

Nyamandhlovu, S. Rhodesia.

(S.A.M., R.M., G.A. colls. Type in my collection.)

T. PUSILLUM, race *MOSSAMEDENSIS*, Forel, var. *TRISTIS*, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 285, ♀, 1917.

“♂, 2.3–2.5 mm. Head and thorax of a paler brownish yellow than in *mossamedensis*. Disc of promesonotum smoother and less sculptured. First node of petiole a little shorter and relatively narrower, the 2nd node, on the other hand, a little wider than in *mossamedensis*. Otherwise like the type of the race.”

Bulawayo. Type in coll. Santschi (R.M., G.A. colls.)

SUB-GENUS TRIGLYPHOTHRIX, Forel.

Dr. Santschi has expressed the opinion (*in litt.*) that this should be treated as a distinct genus, to include only those species which have the hairs branched. If this view be adopted, *T. Arnoldi*, Forel, would have to be placed in the genus *Tetramorium*, and *Tetramorium Ericae*,

Arnold, transferred to *Triglyphothrix*, since a re-examination of the latter species under a strong magnification reveals the presence of a few bifid hairs on the abdomen. To my mind, the branching of the pilosity is not an important character, and I prefer to retain *Triglyphothrix* as a sub-genus of *Tetramorium*.

T. (TRIGLYPHOTHRIX) PAUPER, Santschi.

Ann. Soc. Ent. France, vol. 85, p. 286, ♀, 1916.

♀, 1.2-2 mm. Yellowish brown, antennae and legs ochreous. Pilosity pale yellowish, longest on the apical half of the abdomen, not very abundant, mostly simple but here and there composed of bifid and trifid hairs. Head, thorax and petiole moderately shining, legs and abdomen distinctly shining. Head longitudinally rugoso-striate in the middle, reticulate at the sides and behind. Thorax and petiole widely reticulate-rugose. Abdomen and legs smooth. Head rectangular, nearly one-sixth longer than wide, parallel-sided, the posterior margin straight, the posterior angles narrowly rounded. Frontal carinae very divergent, reaching the posterior angles and forming the upper boundary of the demiscrobes. Eyes convex, prominent, placed a little in front of the middle of the sides. Clypeus with a strong median carina and a feebler one on each side of the same, the anterior margin straight. Mandibles smooth, shining, feebly and sparsely punctured, with 3 distinct teeth in front, feebly denticulate behind. The scape reaches the posterior fifth of the head; 2nd-7th joints of the flagellum at least two and a half times wider than long. Thoracic sutures obsolete above, the thorax feebly constricted at the position of the sutures, feebly convex lengthwise. Epinotal teeth one and a half times longer than their basal width, about as long as the interval between their bases; acute, subvertical, feebly divergent. Both nodes of the petiole transversely oval, the 1st node one-fourth wider than long, the 2nd one-third wider than long and very little wider than the first.

Cawston Farm, Ungusa River, S. Rhodesia.

(S.A.M., R.M., G.A. colls.)

TRIGLYPHOTHRIX AUROPUNCTATUS, Forel.

Amongst the material collected by Haviland, in the Natal Mus. collection, there are some specimens of this species, almost certainly paratypes. An examination of these specimens indicates certain discrepancies in Forel's description.

Except on the scape of one specimen, I have failed to see any golden reflection in the punctures, this, however, may be due to changes brought about by their lengthy immersion in the alcohol. The upper and lower grooves of the scrobe are divided by a raised line which is slightly higher in front but not forming a triangular eminence in any way. The sculpture of the 2nd node is a shallow and feeble puncturation, not coarse as stated by Forel. There is no mesoepinotal suture, its position being indicated only by a slight depression.

AUROPUNCTATUS, var. *BULAWAYENSIS*, Arnold.

This differs from the type of the species by its darker colour, which is yellowish brown, by the sharper sculpture of the head and thorax, and of the 2nd node which is as coarsely punctate as the 1st, and by the coarse puncturation on the base of the abdomen. The size is also somewhat greater, 3 mm.

T. MUSCORM, n. sp.

♂, 1.7–1.9 mm. Head, thorax, legs and antennae ochreous, the petiole brownish ochreous, the abdomen brown. Legs and abdomen smooth and shining, head and thorax reticulate-rugose, the spaces between the reticulations fairly shining.

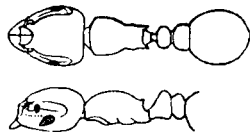


FIG. 78.
T. muscorum. ♂

Nodes of petiole also reticulate-rugose, but with smaller meshes than on the head and thorax. Pilosity yellowish white, fairly abundant all over the body, longest on the abdomen, composed of bifid or trifid hairs. The legs have only a simple and not very dense pubescence.

Head subquadrate, a trifle longer than wide behind, a little wider behind than in front, the posterior margin straight. Mandibles with 5 or 6 teeth, finely and very sparsely punctured, shining. Anterior half of the median area of the clypeus vertical, the posterior half oblique or subhorizontal, the junction of the two planes marked by a sharp transverse ruga, also bounded on each side by a longitudinal ruga, strongly carinate in the middle. Seen from above, the carina and the lateral rugae stand out prominently, making the anterior margin of the upper portion of the clypeus appear almost tridentate. A complete scrobe present, reaching back to the end of the third quarter of the head. The scrobe is divided longitudinally by a sharp line into two halves for the reception of the folded scape and flagellum; it is shining and feebly reticulate. Scapes as long as the scrobes;

2nd-8th joints of the flagellum much wider than long. Eyes large, angulated in front, placed in the middle of the sides.

Thorax half as long again as wide across the anterior margin, moderately constricted between the meso- and epinotum, all the sutures obsolete, the dorsal profile forming a continuous and fairly high convexity. Epinotal teeth acute, divergent, a little longer than their basal width, half as long as the interval between their bases. First node of the petiole higher than the 2nd, transversely oval, slightly narrowed above or subconical, one and a half times wider than long; 2nd node very little wider than the 1st, twice as wide as long, its anterior margin feebly convex, the posterior margin straight. Abdomen globose, very sparsely and feebly punctured.

Amatongas Forest, Portuguese E.A. The nest was placed in moss, which covered the bark of a large tree growing in the depths of the forest.

(R.M., G.A. colls. Type in my collection.)

T. CONSTANCIAE, Arnold, var. *TENEBROSUS*, n. v.

Arnold, Ann. S.A. Museum, vol. 14, pt. 3, p. 339, 1917.

♀. Differs from the type of the species as follows :—

The sculpture of the head and thorax is much stronger, the rugae on the thorax being quite as high as wide, so that the spaces between them are much deeper or almost pit-like. The rugae on the head are wider apart, and the spaces in between (also on the thorax) are more shining. The dorsal profile of the thorax is more convex in front than in the type of the species, and the epinotal spines are less divergent and shorter, or not quite as long as the interval between their bases. The 1st node of the petiole is much narrower and less oval, barely one-third wider than long. The 2nd node is also narrower than in the type of the species, being only three-fourths wider than long (twice as wide as long in the type of the species).

♀, 4.8 mm. Head, thorax, petiole, legs and antennae reddish brown, abdomen piceous. Pilosity yellowish, much longer but less abundant than in the ♀, and composed entirely of simple hairs. Thorax longitudinally rugose, the scutellum and dorsum of the epinotum also partly reticulate-rugose, the rugae wide apart, the spaces between them

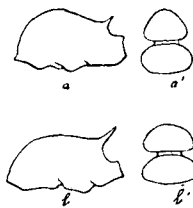


FIG. 79.
T. Constanciae. ♀
Type of species,
b, thorax; *b'* nodes.
Var. *tenebrosus*.
a, thorax; *a'*, nodes.

very smooth and shining. For the rest, sculptured like the ♀. Mesonotum wider than long, its anterior margin strongly arcuate. Epinotal teeth acute, subhorizontal, shorter than in the ♀, about one-third longer than their basal width. First node of the petiole thinner or shorter from front to back than in the ♀, more pointed above. Second node twice as wide as long and half as wide again as the 1st. Wings hyaline, nervures and stigma pale ochreous. Otherwise like the ♀.

♂, 4.5 mm. Smoky ochreous, the rugae on the thorax black, head and abdomen pale yellowish brown, tarsi, mandibles and antennae bright ochreous. Head and epinotum moderately shining, the rest of the body very shining. Head striolate-coriaceous, with a few fine rugae and reticulations superimposed on the cheeks and behind. Mesonotum smooth, sparsely punctured, the punctures large but shallow. Scutellum reticulate-rugose, epinotum longitudinally striate, somewhat reticulate at the sides. Peduncle of the 1st node longitudinally striato-rugose, both nodes reticulate, the reticulations thin and far apart.

Head trapezoidal, widest in front, and including the eyes, wider than long; clypeus convex. Eyes very convex, occupying a little more than the anterior half of the sides of the head. Ocelli large, on a raised area. The scapes reach back as far as the posterior ocelli. Scutellum transversely oval, less than half as long as the very gibbous mesonotum. The two faces of the epinotum form a single and continuous subvertical convexity. First joint of the petiole more or less clavate, the node not distinctly delimited. Second joint narrowed triangularly in front, its posterior half transversely oblong, one-third wider than long, one half as wide again as the 1st node, fairly flat above. Wings as in the ♀.

Amatongas Forest, Portuguese E.A. Very common in the shady parts of the forest; nesting in the ground.

(S.A.M., R.M., G.A. colls. Type in my collection.)

T. MARLEYI, Forel, var. *AKERMANI*, n. v.

♀, 2.5-2.7 mm. This differs from the type of the species by its smaller size and by the shape of the petiole. The 1st node is more oval, the posterior margin being convex and not straight, and is twice as wide as long; the 2nd node is relatively less wide than in the type, being less than one-third wider than the 1st, and not more than two and a third times wider than long. Otherwise like the type of the species.

Pietermaritzburg, (Dr. C. Akerman), *ex* Natal Museum coll. Type in my collection.

T. HEPBURNI, Arnold, var. SERICEUS, n. v.

♂, 2.7 mm. Piceous, almost black, legs, antennae and mandible dark ochreous, the femora, except at their bases and apices, dark brown. The sculpture is similar to that of the type of the species, but less coarse, especially on the thorax and nodes, the rugosities being closer together and less prominent. The chief differences, however, between this form and the type lie in the pilosity and shape of the thorax and nodes. The pilosity is much shorter and is entirely decumbent, the shorter (trifid) hairs on the abdomen being depressed into the little punctures, (somewhat like those of *Tetramorium setuliferum*). The hairs on the legs and scapes, and sides of the 2nd node are oblique, but there are no outstanding hairs anywhere. The mesonotum is longer, being nearly half as long again as the pronotum, (only as long in the type of the species), and the thorax is more constricted at the mesoepinotal suture. The promesonotal suture is faintly indicated, (entirely obsolete in the type of the species), and the dorsum of the epinotum is steeper. The 1st node of the petiole, seen from above, is semicircular, flatter transversely above, and barely one-third wider than long, and with a straight posterior margin. The 2nd node transversely oval, twice as wide as long, one-fourth wider than the 1st.

Redbank, S.R. The nest in loose sand.

This form presents a very different appearance from that of the type of the species, but the presence of a few individuals in the same nest, which were somewhat intermediate in sculpture and pilosity, precludes its separation as a distinct species.

(S.A.M., R.M., G.A. colls. Type in my collection.)

TETRAMORIUM, SUB-GENUS XIPHOMYRMEX.

T. (XIPHOMYRMEX) EBENINUM, n. sp.

♂, 3.75 mm. Jet-black; legs, antennae and mandibles dark piceous brown, the apical half of the last antennal joint and the last four joints of the tarsi, testaceous. Head and thorax moderately shining, the former longitudinally and coarsely striato-rugose, the striae few and far apart, the thorax widely reticulate-rugose, the sides of the head and thorax more closely sculptured and with transverse striae in addition, the demiscrobe almost smooth over its posterior two-thirds. Petiole, legs and abdomen smooth and very shining. Mandibles closely striate, with a row of large punctures behind the masticatory

margin. Clypeus with a strong median carina. Legs and antennae with a sparse, long and yellowish pubescence; head and thorax with a scanty, outstanding and pale pilosity.

Head subrectangular, about one-fifth longer than wide, (excluding the mandibles), the sides in front of the eyes parallel, behind them somewhat convex, the posterior angles rounded, the posterior margin moderately concave. The eyes are very prominent and convex, placed in the middle of the sides. Second and 3rd joints of the

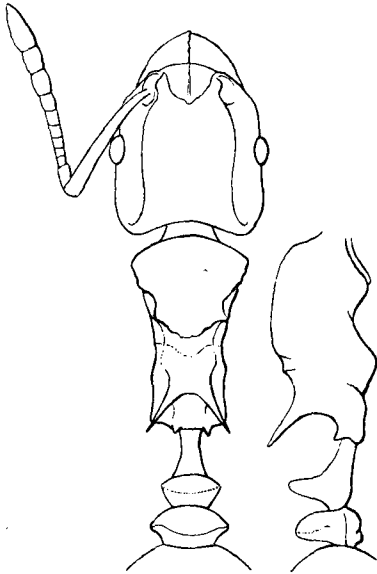


FIG. 80.—*T. ebeninum*.

flagellum a little wider than long, the 4th and 5th as wide as long, the rest longer than wide. The frontal carinae, which extend back to the posterior margin of the head, are moderately divergent backwards, and form the upper boundary of the distinct demisgrobes; the scapes do not quite reach the posterior margin. Anterior margin of clypeus feebly impressed in the middle. Anterior margin of the pronotum arcuate, the shoulders subangular. Thoracic sutures obsolete above, the dorsum of the epinotum separated from the mesonotum by a raised and sharp line. The dorsum of the epinotum is about as long

as wide, slightly hollowed out; the epinotal spines long and acute, strongly divergent, almost twice as long as they are wide at the base, quite twice as long as the space between their bases; episternal teeth triangular, acute, one-third as long as the epinotal; the declivity smooth and shining. Node of the 1st joint of the petiole squamiform, higher than its peduncle is long, and higher than the 2nd node. Its anterior face is convex from side to side, the posterior face flat, its dorsal edge convex transversely and moderately rounded from front to back. The 2nd node two and a third times wider than long, one-third wider than the 1st, its upper half compressed from front to back, (more so at the sides than in the middle), the anterior face vertical, a little wider in front than behind. Abdomen oval.

Allied to *X. occidentalis*, Santschi, but differing by the length of the antennal joints, by the sculptured head and thorax and mandibles. The nodes of the petiole are thinner, *i.e.* much more compressed from front to back than in *X. Humbloti* Forel.

Durban. A small nest under a stone, Type in my collection.

(R.M., G.A. colls.)

T. (XIPHOMYRMEX) ANGULINODE, Santschi, var. DAPHNIS, Santschi.

Ann. Soc. Ent. France, vol. 78, p. 385, ♂, ♀, ♂, 1909.

(var.) Ann. Soc. Ent. Belg., vol. 60, p. 16, ♂, ♀, 1920.

♂, 2.7 mm. Black; mandibles, antennae and femora brown; the tibiae, tarsi and 1st joint of the flagellum brownish ochreous. The whole body with a fine, long and whitish pilosity, fairly sparse and outstanding, but on the abdomen a little more abundant and oblique. Head longitudinally striate, with transverse anastomoses at the sides and behind, forming a wide-meshed reticulum. A complete scrobe present: it is shining and almost smooth except the anterior portion of the lower groove, which is reticulate. Promesonotum rugose, longitudinally so except at the sides, in front, and behind, where it is somewhat reticulate, the spaces between the rugae being quite three times wider than the rugae themselves. The mesoepinotal suture is bounded by a strong transverse raised line in front and behind. Epinotum irregularly rugose; sides of thorax finely reticulate, with a few rugae superimposed. The spaces between the rugae on the thorax are fairly shining. Nodes of petiole smooth and shining below, coarsely reticulate-rugose above, the 1st node with an oval and smooth median area on its dorsal face. Abdomen smooth and shining, the basal third with sparse, large and shallow punctures.

Mandibles shining, with a few very large punctures. Anterior margin of clypeus narrowly excised in the middle, the median area strongly carinate. The scapes extend back to the posterior fifth of the head, as far back as the scrobe in which it lies when folded. Frontal carinae widely divergent posteriorly, as long as the scrobes, of which they form the upper margin.

First joint of the flagellum a trifle longer than wide, the 2nd-5th joints two and a half times wider than long, the 3-jointed club longer than the rest of the flagellum. Head rectangular, slightly narrowed in front, the posterior angles rounded, the posterior margin nearly straight. Eyes moderately large and convex, placed at the middle of the sides. Shoulders of pronotum subrectangular. Promesonotum

submarginate in front and behind, convex transversely and longitudinally. The mesoepinotal suture large and shallow. The dorsum of the epinotum oblique, a little wider than long, the epinotal spines acute, one and a half times longer than their basal width, not quite as long as the space between their bases. Episternal teeth small. First node of the petiole cuboid, higher than wide or long, a little longer than the peduncle, the anterior, lateral and posterior faces subvertical, the dorsal face about one-third wider than long, and quadrangular. The 2nd node transversely oval, about two-thirds wider than the 1st, twice as wide as long, rounded above from side to side and from front to back. Abdomen oval, the 1st segment as long as wide. Femora distinctly swollen in the middle.

♀, 3.3 mm. Flagellum paler than in the ♂. Promesonotum longitudinally striate, the striae closer together than in the ♂. Pronotum narrowly exposed in the middle above, more exposed at the sides, the shoulders rectangular. Scutellum wider than long. First node slightly wider than in the ♂. Wings faintly tinged with ochreous. Otherwise like the ♂.

Hillside, Bulawayo. Nesting in bare soil.

Type in coll. Santschi. (S.A.M., R.M., G.A. colls.)

T. ANGULINODE, var. CHLOE, Santschi.

Loc. cit., p. 17, ♂.

♀, 2.3 mm. This differs from the var. *daphnis* as follows :—

Antennae darker and shorter; the 6th joint two and a half times wider than long, the 7th twice as wide as long. Sculpture of the head and thorax stronger, the vertex of the head reticulate, owing to the presence of well-defined transverse anastomoses. Thorax a little more narrowed posteriorly. Epinotal spines longer, fully as long as the space between their bases. The dorsal face of the 1st node is reticulate-rugose all over and narrower in front than behind; it is also distinctly arched transversely. The 2nd node is rugose only on its posterior half, the anterior half, which merges obliquely into the anterior face, being smooth and shining; the sides of the node are straight, not convex as in *daphnis*, so that the anterior corners are subrectangular.

Sawmills, Umgusa River, S.R. Type in coll. Santschi.

(S.A.M., R.M., and G.A. colls.)

T. (XIPHOMYRMEX) FOSSULATUM, Forel.

Pages 345 and 348. This species should be transferred to the genus *Pristomyrmex*, Mayr. This genus is characterised by the structure of

the clypeus, in which the lateral pieces of the clypeus are reduced so much as to form a very narrow or almost linear strip on each side. The antennae are 11-jointed; mandibles usually tridentate.

PRISTOMYRMEX CRIBRARIUS, n. sp.

♀, 3.8 mm. Head and petiole dark reddish brown, thorax dark yellowish brown, abdomen black, legs and antennae dark brownish ochreous. Shining, the abdomen very smooth and glabrous. A short, thin, sparse and yellowish pilosity on the head, thorax, petiole, antennae and legs, oblique on the legs, erect elsewhere. Pubescence wanting except on the flagellum. Cheeks, upper surface of the head, promesonotum and scutellum covered all over with wide, round and moderately deep pit-like punctures, which are much wider than the spaces between them. On the thorax some of the pits coalesce, forming longitudinal grooves. Both nodes of the petiole with wide and deep longitudinal sulci at the sides; the dorsum of the 1st node has 3 wide and longitudinal grooves, and the dorsum of the 2nd node has a wide shield-shaped and smooth area in the middle. Head, excluding the mandibles, a little wider than long, barely narrower behind than in front, the sides fairly convex, the posterior margin straight. The clypeus has a median carina somewhat widened and flattened in front, and the anterior margin bears on each side three small teeth. Mandibles smooth, with 3 blunt teeth, the basal tooth largest, and separated by a wide space from the other two. Frontal carinae widely divergent, continued backwards as the upper margin of the scrobe. The latter ends at about the level of the posterior margin of the eye and is distinctly defined only in its upper half; its surface is fairly smooth except in front, where it is vertically striate. The scapes are a little longer than the scrobes; 2nd-6th joints of the flagellum wider than long, the 7th as long as wide. Eyes large and convex, placed at about the middle of the sides. Ocelli small and wide apart, smaller than most of the punctures on the head. Mesonotum nearly twice as wide as long, its anterior margin very convex; scutellum transversely oval, vertically truncate posteriorly. Epinotal spines horizontal, feebly divergent, acute and long, quite as long as the interval between them.

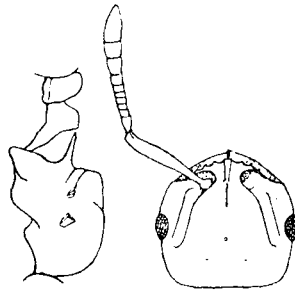


FIG. 81.
P. cribrarius. ♀

First node of petiole about as long as wide above, vertically truncate, in front and at the sides, subquadrate or only a little narrower in front than behind. Second node one-third wider than the 1st, one-third wider than long, the shield-shaped area convex from front to back and merging gradually into the smooth anterior face. Abdomen globose, barely longer than wide. All the femora strongly swollen. Deälated.

One specimen, on a tree trunk, Amatongas Forest, P.E.A.; in my collection.

This species resembles *P. orbiceps*, Santschi, ♀ in the shape of the clypeus, but otherwise has no relationship to it; quite different from *P. (olim Xiphomyrmex) fossulatum*, Forel.

RHOPTROMYRMEX TRANSVERSINODIS, Mayr.

The specimens on which the descriptions (pp. 355-357) were based were collected at Pretoria (C. K. Brain), and had been compared by me with a specimen from Port Elizabeth (Dr. H. Brauns), and found to agree with the same fairly closely. Dr. Santschi, however, has drawn my attention to the fact that the Pretoria examples differ from the cotypes of Mayr which are in his possession, and I therefore propose to separate the former under the name—

Var. PRETORIAE, n. v.

The variety differs from the type of the species as follows :—

♂, 2.8 mm. (incorrectly given as 3 mm. on p. 355), and therefore somewhat smaller than the type of the species, which attains to 3 mm. The 1st node of the petiole has a narrower dorsal surface, and is a little longer than wide, whereas in the type it is as long as wide. The 2nd node is two and three-quarter times wider than the 1st, (only twice as wide in the type of the species).

These are only slight differences, but as an equal degree of difference occurs in the ♀, recently received from Zululand, the separation of the Pretoria examples is justified.

The ♀ of the type of the species differs from that of the variety (described on p. 356), as follows :—

♀, (hitherto undescribed), 3.4 mm. The whole body, including the legs and antennae, clothed with a sparing and fairly long, greyish pubescence, oblique on the legs and antennae, decumbent elsewhere. The vertex is exceedingly finely and sparsely punctured, the rest of the body impunctate, and the shallow elliptical punctures which are present in the variety are entirely absent. The posterior angles of the head do not project so far back as in the variety, and the sides

above them are barely concave. Parapsidal sutures obsolete (very distinct in the variety). The dorsum of the epinotum is more deeply excavated. The 2nd node of the petiole is relatively narrower, with more angular sides and a less concave anterior margin. Otherwise just like the ♀ of the variety.

♂, (hitherto undescribed), 3.4 mm. Black; legs pale brown, tarsi, antennae and mandibles dirty ochreous. Smooth, shining and impunctate; mandibles finely aciculate and dull. Pubescence as in the ♀. Head as long as wide across the eyes, trapezoidal, (excluding the projecting portion of the clypeus), highest behind, the posterior margin feebly convex, without projecting lateral angles. Anterior margin of clypeus convex. Eyes convex, occupying a little less than one-third of the sides, placed in front of the middle of the latter. The scapes extend back as far as the anterior ocellus, 1st joint of flagellum a little longer than wide, the 2nd joint as long as the scape, and composed of 5 coalesced joints, since the whole antenna is 9-jointed; in some specimens the true 6th joint of the flagellum is faintly delimited from the rest of the composite 2nd joint. Mesonotum convex transversely in front, also above, shallowly impressed longitudinally in the middle, a little wider than long. Scutellum fairly convex, wider at the base than long. Dorsum of epinotum one-third wider at the base than at the apex, a little longer than wide at the base, marginate, the margins ending above the declivity in obtuse angles. Declivity vertical, hardly more than half as long as the dorsum. The 1st node of the petiole similar to that of the ♀, seen from above, but less narrowed in front, the dorsal surface more flattened and wider, not produced below, a little longer than deep. Second node transversely elliptical, not quite twice as wide as long, the anterior margin convex, the dorsal surface flat or slightly concave, not convex as in the ♀. Abdomen of the usual form, without prominent lateral angles at the base. Legs long and slender. Wings as in the ♀.

M'fongosi, Zululand (W. E. Jones), ♂♂, ♀♀, and ♂♂, *ex* Natal Mus. coll.; Matroosberg, Hex River Mts., (R. W. E. Tucker).

(S.A.M., R.M., G.A. colls. Types of ♀ and ♂ in my collection.)

TRIBE MERANOPLINI.

CALYPTOMYRMEX CATARACTAE, n. sp.

♀, 3 mm. Dark reddish brown, mandibles, antennae and legs paler or yellowish red-brown. The scapes, whole upper surface of the body excepting the epinotum, the femora, tibiae and 1st joint of the tarsi are clothed with large spatulate hairs, those on the head somewhat

smaller than elsewhere, the promesonotum with six longitudinal rows of such hairs. The enlarged ends of these hairs are subcircular, and fully three times as large as those of *C. Arnoldi*, Forel. Closely and very finely reticulate-punctate; the abdomen, which is slightly shining, very superficially sculptured, the head and thorax above with a fine longitudinal striation superimposed. Scrobes dull and reticulate-punctate only. Head as wide as long, widest at the posterior fourth, gradually narrowed anteriorly, half as wide again as the prothorax. Mandibles aciculate, the masticatory margin finely denticulate. Head shaped as in *C. Arnoldi*, but the posterior margin is distinctly more convex, and the teeth on the upper edge of the clypeus are blunter and shorter. The posterior part of the mesonotum is flat from side to side, not convex as in *Arnoldi*, the posterior lateral angles ending in small, rounded teeth, larger than those of *Arnoldi*, and hidden by one of the spatulate hairs. The declivity and dorsum of the epinotum lie almost in the same plane, whereas in *Arnoldi* the declivity is steep. The dorsum is a little longer than wide, with a very minute prominence behind on each side, (hardly a tooth, and much smaller than in *Arnoldi*). The declivity is strongly marginate on each side. Nodes as in *Arnoldi*.

Rain Forest, Victoria Falls, 1 ♀. Type in my collection.

Larger and darker than *Arnoldi*, and quite distinct from that species by the form of the hairs, which are all strongly spatulate, the widened terminal portion being round, not oblong as in *Arnoldi*. Moreover, in the latter species the hairs are chiefly confined to the abdomen. It differs from *C. nummulitica*, Santschi, by the sculpture, especially of the epinotum, by the colour, and by the shorter peduncle of the 1st node.

MERANOPLUS SPININODIS, Arnold.

♀, (hitherto undescribed), 3.7 mm. Colour, sculpture and pilosity as in the ♂. Ocelli small and wide apart. The anterior angles of the pronotum, which is widely exposed above, end in short, acute and triangular teeth, (the diagnosis of the ♀ generic characters, p. 364, should be accordingly emended). Mesonotum unarmed, scutellum with the anterior and posterior margins arcuate, its sides vertical. Epinotal spines like those of the ♂ but stouter. Petiole similar to that of the ♂, but the teeth on the dorsal edge of the 1st node are much shorter. Abdomen oblong. Deälated. Otherwise like the ♂.

♂, (hitherto undescribed), 3.1 mm. Black; abdomen piceous, the bases and apices of the femora, the tibiae and antennae pale smoky

brown, the tarsi ochreous. Head and thorax subopaque, fairly finely reticulate rugose, the middle of the dorsum of the epinotum, the declivity, petiole and abdomen smooth and shining, the nodes also very superficially reticulate, the abdomen sparsely punctured. Pilosity as in the ♂ and ♀, but much scantier. Head, seen from in front and excluding the eyes, sub-circular, a very little longer than wide behind the eyes. The latter very convex and prominent, occupying the anterior half of the sides. The scape is a little shorter than the eye, but a little longer than the 2nd joint of the flagellum, the 1st joint as long as wide, two-fifths the length of the 2nd. Mandibles atrophied, very small, not meeting in the middle when closed. Mesonotum with distinct Mayrian furrows, the scutellum triangular, rounded behind, separated from the mesonotum by a deep groove. Dorsum of epinotum ending on each side behind in a blunt angle, it is as long as the sub-vertical declivity, which is feebly concave transversely. First node much lower than the 2nd, very convex lengthwise above, about as long as wide. Second node subglobose, not wider than the 1st. Wings hyaline, nervures and stigma very pale straw-yellow.

Hillside, Bulawayo. Types in my collection.

M. SPININODIS, var. *GLABER*, n. v.

♂, 2.8 mm. Ochreous, the anterior margin of the head and the apical third of the abdomen slightly reddish ochreous. Pilosity entirely absent, clothed only with a short, pale yellowish and almost decumbent pubescence. Sculpture like that of the type of the species, but a little more superficial. The epinotal spines brownish at their apices. The 1st node of the petiole distinctly narrower than in the type of the species and with longer teeth, one and a half times longer than their basal width. The 2nd node is shorter, rather bluntly conical, not with a flattened dorsal face as in the type of the species. Both nodes much higher than long, and much thinner from front to back than in the type of the species. The 2nd node is produced below into a sharp triangular tooth. Otherwise exactly like the type of the species.

Hillside, Bulawayo ; Sawmills, Umgusa River, S.A.
(S.A.M., R.M., G.A. colls. Type in my collection.)

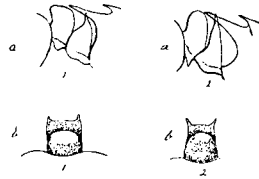


FIG. 82.

1. *Spinidosis* type.

2. var. *glaber*.

a, petiole, profile ;

b, petiole, seen from behind.

TRIBE DACETINI.

STRUMIGENYS MARLEYI, Arnold.

(as race of *Havilandi*, Forel, p. 378.)

Having recently seen the paratypes of *Havilandi*, Forel, (*leg.* Haviland, *ex* Natal Mus. coll.), it becomes apparent that *Marleyi* should stand as a distinct species. In addition to the characters given on p. 378, it also differs in the following features from *Havilandi*. The colour is a pale raw umber, much darker than in *Havilandi*, which in all the specimens I have seen is straw-yellow and not rusty yellowish-red as stated in Forel's description, (this, however, may be due to the long immersion in alcohol, nearly twenty years, having leached the colour out). The mesonotum is more convex lengthwise, and the dorsum of the epinotum is a little wider than long. The dorsal face of the 1st node is about one-quarter wider than long, (nearly twice as wide as long in *Havilandi*); the dorsal face of the 2nd node is lenticular, (semicircular in *Havilandi*), and is only half as wide again as long, and not quite twice as wide as the 1st.

TRIBE CATAULACINI.

CATAULACUS INTRUDENS, Smith, race TRISTICULUS, Santschi.

Rev. Zool. Afr., vol. 6, p. 237, ♂, ♀, ♂, 1919.

"♂, 3.7-4 mm. Black; antennae and tibiae reddish, the rest of the legs and the mandibles rusty brown. Dull, the abdomen less so. The head has about 20 longitudinal and irregular rugae with anastomoses a little less numerous than in *intrudens*. Similar rugae, but more or less arcuate, on the pronotum. About 20 to 22 can be counted on the widest part of the thorax. The occiput and the declivity of the epinotum are transversely rugose. Upper face of the nodes regularly rugoso-sulcate lengthwise. Abdomen finely reticulate and with close longitudinal striae at both ends, more feebly sculptured than in *intrudens*. Head and thorax a little narrower than in *intrudens* Smith and the race *intermedius*, Santschi. Head feebly arcuate at the sides, the posterior margin straight. The eyes are not so large as those of *intermedius*, but larger than of *intrudens*; seen from in front they project beyond the margin of the head (flatter in *intrudens*). Mandibles finely rugose. Epinotum wider than in *intermedius*, longer and narrower than in *intrudens*. The epinotal spines are shorter than

the space between their bases, more divergent than in *intermedius* and less than in *intrudens*. First node of petiole conical, with the anterior face vertical, longer than wide at the base, strongly appendiculate below, with about 4 or 5 sulci above. The 2nd node is a little wider than the 1st, and not so long as wide, narrowed behind. Abdomen oval, the sides feebly arcuate-subparallel, the base emarginate. Pilosity as in *intrudens*, Smith.

♀, 5.5 mm. Width of the head, 1.1 mm. ; length, 1.3 mm. Length of the abdomen, 2 mm. ; width, 1.3 mm. Head more coarsely reticulate than in the ♂, as much as in the ♀ *intermedius*, the rest of the sculpture as in the ♂, and the shape as in the ♀ of *C. Ebrardi*, Forel. Wings yellowish with brownish nervures.

♂, 4 mm. Head and thorax with feebler and more widely spaced rugae than in the ♀, they are also effaced in front and behind. Abdomen without striae, only reticulate. Pilosity longer and more abundant than in the ♀, especially on the abdomen. The major diameter of the eyes is equal to their distance from the base of the mandibles and to the width of the front of the head. Occipital margin straight, the angles bidentate. The epinotal teeth are one-sixth the length of the space between their bases, which is barely concave. First node of petiole less narrowed behind than in the ♀, its anterior face reticulate. Abdomen pyriform."

Port Elizabeth, (T. Reeve leg.), ex Albany Mus. coll. Type in my collection.

TRIBE PHEIDOLINI.

PHEIDOLE CAPENSIS, Mayr, var. *MODESTIOR*, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 337, ♀, 1919.

♀, 4 mm. Smaller than the type of the species and of a darker colour, especially the abdomen, which is dark brown. The occipital emargination is deeper and more angular at the apex, the sides of the head more convex. The promesonotum is narrower than in the type of the species, and the posterior lateral angles of the pronotum more acute. The 2nd node of the petiole is relatively wider and more angularly produced on each side. The scapes are a little longer. Otherwise like the ♀ of the type of the species.

♂, 2 mm. Head dark brown. Posterior margin of the head more concave, the lateral angles much more widely rounded than in the ♀ of the type of the species. The 2nd node with more angular sides. Otherwise like the ♀ of the type of the species.

Majuba Nek, C.P., ex Albany Mus. coll. ; type in coll. Santschi.

TRIBE CREMASTOGASTRINI.

CREMASTOGASTER OROBIA, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 343, ♂, 1919.

♂, 2.6–3.5 mm. Black; mandibles, clypeus at the sides, flagellum and tarsi dark brown. Head and thorax dull, except the median posterior third of the head and the declivity of the epinotum, which are smooth and shining. Head fairly sharply and closely striate longitudinally, the shining area on the vertex superficially reticulate and finely punctured. Mandibles dull, longitudinally striate. Thorax and 1st node of petiole finely reticulate-punctate, the former with a few fine longitudinal striae on the pronotum and several rugae on the dorsum of the epinotum, the 2nd node nearly smooth. Abdomen smooth and shining. A few erect hairs on the clypeus and nodes, elsewhere there is only a fine, oblique and rare pubescence. Head quadrate, excluding the mandibles, as wide as long, the sides fairly convex, the posterior margin almost straight. The eyes are placed just behind the middle of the sides. The scapes extend beyond the posterior margin of the head by a length equal to twice their own apical width. First and 2nd joints of the flagellum longer than wide, the 3rd wider than long. Promesonotum nearly one-fourth longer than wide, fairly flat above, convex in front, the promesonotal suture feebly indicated, the mesonotum with a weak median carinula, its declivity short and oblique. Dorsum of epinotum widened posteriorly, as long as wide at the base; the epinotal teeth fine, short, directed obliquely upwards and outwards, as long as their basal width and about one-third as long as the space between their bases. First node trapezoidal, the anterior angles rounded, wider in front than long; 2nd node with a median groove.

Matroosberg, C.P., 4500 ft. (R. W. Tucker *leg.*), ex S.A.M. coll.

Type in coll. Santschi. (S.A.M., G.A. colls.)

C. ACACIAE, Forel, var. GENEROSA, Santschi.

Loc. cit., p. 343, ♂.

“♂, 3.4 mm. Reddish brown. Front of the head and the clypeus smooth or less strongly striate than in var. *victoriosa*, Santschi. Dorsum of the epinotum more distinctly striate lengthwise in the smaller workers. The rest smooth and shining as in *victoriosa*. Head and thorax a little narrower, the epinotal spines slender, one and a half

times longer than thick, much shorter than in *victoriosa*. The 1st node is also a little narrower in front; otherwise like *victoriosa*.

♀, 8 mm. Reddish ochreous. Mandibles, flagellum and apex of abdomen somewhat darker, the wings smoky brown, nervures brown. Smooth and shining. Mandibles and sides of epinotum striate, the cheeks striolate. Erect pilosity moderate.

Head about one-sixth wider behind than long (excluding the mandibles), one-fourth wider behind than in front. The posterior margin straight. The sides moderately convex, the eyes occupying the median fourth. Masticatory margin of the mandibles oblique, with 5 teeth. Clypeus convex, not carinate. The frontal sulcus reaches the anterior ocellus. The scape just reaches the posterior margin of the head; 3rd to 5th joints of the flagellum wider than long. Frontal carinae shorter than the frontal area, the latter longer than wide. Thorax a little narrower than the head. Epinotum bidentate, the scutellum almost overhanging it. First node of petiole trapezoidal, wider in front than long. Second node impressed behind."

Durban, (C. P. v. d. Merve *leg.*); type in coll. Santschi.

C. BULAWAYENSIS, Forel, var. RUFESCENS, Santschi.

(*C. Sjoestedti*, race *bulawayensis*) Rev. Zool. Afr., vol. 6, p. 236, 1919.

"♂, 2.6-4 mm. Of a bright reddish brown, the head and margins of the abdominal segments somewhat darker. The fine striae on the front of the head extend back less far than in the race. The epinotal teeth are very small, half as long as in *bulawayensis*. The 1st node of the petiole slightly wider in front. Otherwise similar."

Natal, (Haviland *leg.*), ex Natal Mus. coll. Type in coll. Santschi.

C. BULAWAYENSIS, var. ZULU, Santschi.

Ann. Soc. Ent. Belg., vol. 60, p. 15, ♀, 1920.

"♂, 3.2-3.5 mm. Black, mandibles, club of antenna and last tarsal joints blackish brown. The epinotal teeth shorter and more obtuse. Otherwise like *bulawayensis*, Forel.

♀, 10 mm. Black, flagellum, tarsi, mandibles, and anterior margin of the head dark rusty red. The space between the ocelli and the eyes, the mesonotum, scutellum, and abdomen shining, smooth and with a few small punctures. Head rectangular, slightly longer than wide, narrowed in front, the sides and hind margin straight. Thorax narrow, the epinotal teeth reduced to mere tubercles. The 1st segment of the petiole is almost square, the sides parallel. The 2nd segment is a little

wider than long, without groove or impression. Wings slightly infusate, the anterior wing 8.5 mm. long."

M'fongosi, Zululand, (W. E. Jones *leg.*), *ex* Natal Mus. coll. Type in coll. Santschi.

TRIBE PLAGIOLEPIDINI.

PLAGIOLEPIS FUNICULARIS, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 344, ♀, 1919.

♀, 1.9–2 mm. Yellowish red-brown, the abdomen and back of the head a little darker in some specimens; legs and antennae straw-yellow, the flagellum apically and femora somewhat browned. Smooth and shining. An exceedingly fine and not dense pubescence all over, the abdomen with a few longer outstanding hairs. Head rounded, as long as wide, widest in the middle, a little narrower in front than behind, the posterior margin feebly concave, the posterior angles narrowly rounded. Eyes fairly large, placed just in front of the middle of the sides. Clypeus subcarinate medially in the posterior half. Mandibles shining, with 5 teeth. The scapes extend beyond the hind margin of the head by as much as their apical width. Second joint of the flagellum nearly twice as wide as long, the 3rd and 4th subequal, longer than wide. Pronotum convex, two-fifths wider than long in the middle; mesonotum one-third wider than long, about two-thirds longer than the metanotum; the three sutures fairly distinct but not deep. Dorsum of epinotum short, shorter than the metanotum, merging gradually into the much longer and very oblique declivity. Scale of petiole subquadrate, the dorsal edge convex transversely.

Natal, (Haviland *leg.*), *ex* Natal Mus. coll.; type in coll. Santschi.

TRIBE CAMPONOTINI.

CAMPONOTUS (s.g. MYRMAMBLYS) ORITES, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 346, ♀, 1919.

♀, 7 mm. Head black; thorax and abdomen dark brown, the femora dull ochreous, antennae, tibiae and tarsi reddish ochreous. Mandibles reddish brown or piceous. Smooth and shining, microscopically reticulate-rugulose. A few small piligerous punctures on the cheeks and on the frons between the frontal carinae. Clypeus, mandibles, scale and abdomen with a few longer, yellowish and exserted hairs. Head widest across the eyes (which are placed at the posterior third),

as wide there as long, not quite half as wide again there as across the anterior margin; the posterior margin nearly straight, the posterior angles narrowly rounded. The frontal carinae, which extend back to the level of a line joining the anterior margin of the eyes, are half as far again from the sides as they are from each other. Mandibles striato-punctate, 5-dentate. Median area of clypeus feebly coriaceous, slightly wider than long, moderately convex, not carinate, with a row of 4 or 5 deep punctures just on the anterior margin. The scapes extend beyond the hind margin by half their apical width. Pronotum convex in front, almost flat above, half as wide again as long. Mesonotum as long as wide in front, three times as wide there as at the mesoepinotal suture. From that point the thorax is much constricted, so that the dorsum of the epinotum is parallel-sided, two and a quarter times longer than wide. It is slightly shorter than the subvertical declivity and merges into it by a widely rounded angle. $L=3 H$. The scale of the petiole is nearly twice as high as wide, rounded transversely above, flat behind, convex from side to side in front. The base of the abdomen subtruncate. Femora strongly compressed, the tibiae less so or subcylindrical, not setose.

♀ media, 5.5-6 mm. Head trapezoidal, more narrowed in front than in the ♂. Scapes longer, extending to the middle of the pronotum. Clypeus subcarinate over the basal half; legs paler. The scale a little thicker than in the ♂.

♀ minor, 4.3 mm. Legs straw-yellow; the clypeus more distinctly carinate on the basal half than in the ♀ media. The scape extends back nearly as far as the posterior margin of the pronotum. The epinotum is longer, the dorsum fully as long as the declivity. Scale thicker and lower.

Matroosberg, C.P., 5000 to 7000 ft. (R. W. Tucker *leg.*), ex S.A. Mus. coll. Type in coll. Santschi.

The *C. orinodromus*, Santschi, *loc. cit.*, p. 347, is without doubt the same species as *orites*. The specimens sent to Dr. Santschi for determination were all collected in the same place by Mr. Tucker and from the same nest. Moreover, the differences cited by Santschi are trivial, such as might be expected to occur within the range of variation amongst the individuals of one nest.

C. (s.g. MYRMOTURBA) CLEOBULUS, Santschi.

Rev. Zool. Afr., vol. 6, p. 238, ♂, 1919.

“♂, 8 mm. Black; mandibles, except at the base, reddish. Flagellum and tarsi brown. Apical margins of abdominal segments slightly

yellowish. Pilosity mediocre, a little shorter than in *thales*, Forel. Sculpture as in *thales*, but there are more pit-like punctures between the frontal carinae, and those of the mandibles are larger. Head wider behind than in *thales*, (2.2 mm. long, 2.1 mm. wide). The posterior margin straight; the sides, feebly convergent in the posterior half, become more strongly convergent in front. Eyes mediocre, two-thirds the length of their distance from the posterior margin. The site of the lateral ocelli is indicated by wide elongated impressions. The frontal sulcus is weak and does not extend beyond the frontal carinae, the latter are nearer together in front than in *thales*. Clypeus strongly carinate, with a lobe which is shorter than in *thales*. Mandibles reticulate, with 5 or 6 rounded teeth. The scape, 2.1 mm. long, extends a good deal beyond the posterior margin. Frontal area short. Thorax convex from one end to the other, the angle of the epinotum more marked, the declivity more oblique than in *thales*. Metanotum distinct, short. Profile high, the summit less convex than in *thales*. Posterior tibiae 2.3 mm. long, unarmed. Abdomen of moderate size.

♀, 6 mm. Head rectangular, one-fifth longer than wide. The posterior margin barely convex, the posterior angles rounded, the eyes placed in the posterior fourth of the sides. The scape extends beyond the posterior margin by a third of its length. Clypeus carinate as in the ♂, the angles of the lobe more oblique. Dorsum of epinotum straight, considerably longer than the declivity, and forming with it an angle of about 150°. Scale thicker and more convex in front than in the ♂, thinner than in *thales* ♀."

Drakensberg, Natal, 11,000 ft. (Haviland leg.), ex Natal Mus. coll. Type in coll. Santschi.

C. MACULATUS, race PICTIVENTRIS, Mayr, var. IMMACULIFRONS, Santschi.

Loc. cit., p. 349.

I cannot agree with Dr. Santschi in granting these specimens a distinct varietal name. The specimens which were sent to him were compared with cotypes of Mayr, and, as I have pointed out before, differ from them only to a very trivial extent. It is questionable whether it is worth while to attach a distinct name to every petty variation exhibited in this extraordinary variable species.

C. MACULATUS, race RADAMOIDES, Forel, var. CATARACTAE, Santschi.

Loc. cit., p. 239, ♂, ♀.

"♂, 11-12 mm. Head black; dorsum of thorax and greater part of the abdomen brownish black. Mandibles dark red. Sides of the

thorax as in the type of the species, coxae, femora, scale, two large confluent spots on the base of the abdomen, and two others more or less distinct and equally diffuse on the sides of the second and third segments, ochreous yellow, more or less reddish. Flagellum, tibiae and tarsi of a deeper reddish ochreous. Middle of the scapes brownish. The reddish pilosity shorter and a little less abundant than in the type of the species. A few fine hairs are on the cheeks. Pubescence very scanty, even on the limbs. Tibiae not setose. Head and upper surface of thorax slightly dull, the rest shining. Reticulate, in greater part densely reticulate-punctate. Abdomen finely reticulate-shagreened transversely. Head wider behind than in front (2.2 to 2.3 mm. wide; in front 1.5 mm.), from 2.4 to 2.5 mm. long, the sides sub-rectilinear in their median fourth, and convex in front and behind. The posterior margin straight with the angles much rounded. Eyes a little smaller than their distance from the posterior margin. Frontal carinae nearly twice as far apart behind as in front. Clypeus strongly carinate, the lobe shorter than in the type of the species. The scape, 2.5 mm. long, extends by nearly a fourth of its length beyond the posterior margin. Thorax relatively shorter than in the varieties *liocnemis* and *madecassa*. The scale is slightly higher. Posterior tibiae cylindrical, slightly compressed, 2.5-3 mm. long. Otherwise like *liocnemis*, from which it differs chiefly by the wider and shorter head, which is also shorter than in the race *Hannae*.

♂, 9 mm. Entirely rusty reddish, except the diffuse spots on the abdomen."

Cataract Island, Victoria Falls, (Arnold *leg.*); type in coll. Santschi.

C. MACULATUS, race AGRICOLA, Forel, var. TACITUS, Santschi.

Loc. cit., p. 240, 24, ♀.

"24, 8.5 mm. Head and thorax rusty ferruginous, flagellum, legs, scale and front of the abdomen reddish yellow, the rest of the abdomen reddish brown, with the margins of the segments yellowish. Top of the head and scapes slightly browned. Margin of the mandibles and clypeus blackish. A scanty reddish pilosity margins the abdominal segments, but is lacking on the legs, which are only sparsely pubescent. Densely reticulate and dull. The abdomen transversely striolate and nitidulous. Clypeus and mandibles fairly shining. Head 2.1 mm. wide behind the eyes, 2.4 mm. long. The posterior margin straight, the angles rounded, the sides convergent in front but only a little convex. Eyes behind the middle of the sides and shorter than their distance from the posterior margin. Frontal carinae but slightly

divergent in their posterior two-thirds. Clypeus strongly carinate, the lobe straight, a little wider than in, and as long as in *thales*, Forel. Mandibles punctate, with 7 teeth. Thorax as in *thales*, but the metanotum is distinct. The dorsum of the epinotum is longer than the declivity. Scale thin. Otherwise as in *agricola*.

♀. This agrees with the description of that of *agricola*."

Natal, (Haviland leg.), ex Natal Mus. coll. Type in coll. Santschi.

C. MACULATUS, race HANNAE, Santschi.

Bull. Soc. Vaud. Sc. Nat., vol. 52, p. 349, 2♂, ♀.

"♂ 8-12 mm. The 2♂ is coloured like the race *cavallus*, Santschi. The yellow spot on the front of the abdomen is a little less extensive. Pilosity less abundant, especially on the head above and below. Cheeks without exerted hairs. The abdomen and posterior angles of the head are a little less shining, the sculpture being more pronounced. The thorax is shorter and forms from front to back a more accentuated curve, the two faces of the epinotum not distinctly defined from each other. The metanotum is longer, about twice as wide as long (three times wider than long in *cavallus*). The scale is thicker and more convex in front. Tibiae compressed, not setose.

♀ media. Paler than in *cavallus*.

♀ minor. Only the dorsum of the thorax and abdomen a little browner. Thorax also more convex. Otherwise like *cavallus*.

This race inclines in the direction of *atramentarius* and *radamoides*, Forel. It greatly resembles *cavallus*, Santschi, in colour and general form, but the shorter and more convex thorax makes it a distinct race. Victoria Falls."

Type in coll. Santschi.

C. COMPRESSUS F. race PROBATIVUS Santschi.

Since writing the first paragraph on p. 634, 1917, a long correspondence passed between Dr. Santschi and myself, which led eventually to my sending him the specimens received from Dr. Forel, and on which these conclusions were based. As a result of his examination, Dr. Santschi concludes that these specimens were wrongly named by Dr. Forel, and that they represent a new race *probativus* of *C. compressus* F. (see Bull. Soc. d'Hist. Nat. de l'Afrique du Nord, t. xii, pp. 73, 74 nota, 1921). The description which follows on p. 634, from line 14 onwards, is therefore of that race and not of the race *sexpunctatus*. *C. compressus*, an Indian ant, has hitherto been

regarded as a race of *maculatus* ; I do not know when, and by whom, it was raised to specific rank.

C. (s.g. MYRMOSAGA) FAVORABILIS, Santschi.

Loc. cit., p. 349, ♀.

“♀ minor, 4.3 mm. Brown ; mandibles, clypeus, first joint of the flagellum, scape, tarsi and pronotum, rusty red. Coxae yellow. Ventral surface of abdomen and the legs reddish yellow. The abdominal segments narrowly margined with yellow. Smooth and shining, very finely reticulate, the epinotum and abdomen below very finely and transversely reticulate. Some fine, pointed, erect, and long yellowish hairs on the thorax, which are more abundant on the head and abdomen. Pubescence yellowish, fairly adjacent, sparse on the abdomen, fairly abundant on the pronotum, longer and more distantly distributed on the head, especially on the cheeks and clypeus. With the exception of some hairs on the articulations of the femora and tibiae, the legs, like the antennae, are only pubescent. Head about one-fifth longer than wide, rounded behind the eyes, the latter prominent and occupying the posterior fourth of the sides. The sides of the head are straight and converge a little in front. Clypeus carinate as far as the anterior margin. The frontal carinae extend back as far as the level of the middle of the eyes, where they are as wide apart as they are long. Mandibles smooth, with large punctures, and with 6 teeth. The scape extends beyond the occipital margin. Thorax fairly elongate, the pronotum longer than wide. Mesonotum longer than wide, distinctly narrower and higher in front than the pronotum, the mesoepinotal suture not very distinct, the promesonotal well defined. Dorsum of epinotum clearly concave from front to back, convex from side to side, not marginate, higher in front than behind, from one-third to one-half longer than the declivity, with which it forms a rounded angle. The declivity is convex in all directions, and not marginate. The scale is about twice as high as thick (long), the summit thin, flat behind, convex in front, higher than the declivity of epinotum. The anterior face of the abdomen almost half as high again as the scale. Tibiae cylindrical.”

Nyamandhlovu, S.R., 1 specimen. Type in coll. Santschi.