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*A Revision of some old Types of
Formicidae.*

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XIV. *A Revision of some old Types of Formicidae.* By
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[Read June 3rd, 1925.]

WITH THIRTEEN TEXT-FIGURES.

THE interesting and primitive Ponerine genus *Myrmecia* has long been in need of revision, and myrmecologists may be well content that this task is being undertaken by Mr. J. Clark, who in his dual capacity of systematist and field-naturalist is well equipped for the task. Some time ago Mr. Clark asked me for information relating to Smith's types of this genus, and I re-described and made drawings of these types for his use.

At the time when Smith was describing Hymenoptera, descriptions were not expected to be of the length and detail that is now considered necessary, and Smith, even for his period, erred on the side of brevity. Realising to what extent foreign myrmecologists, who had been unable to see the types for themselves, had been misled by these inadequate descriptions, I conceived the idea of revising all Smith's types of the Formicidae. This was some twelve years ago, and the war prevented the idea from being carried out, but a few were re-described in 1922.

The genus *Myrmecia* is of particular interest as it is confined to Australia and Tasmania, with the exception of one species from New Caledonia, and it is almost distinctive enough to form a sub-family of its own. (Emery, in the "Genera Insectorum," says that morphologically this genus approaches most nearly to the root of the family of Ants). In view of the probability of Mr. Clark's proposed work not appearing for some time yet, I have thought it worth while to publish the following revision of Smith's types.

Other types of Smith re-described by me are: *Odontomachus ruficeps* and *cephalotes* and *Aphaenogaster longiceps*, in the Annals and Magazine of Natural History (ser. 9, vol. ix, Ap. 1922).

I have omitted all but the most essential characters in the descriptions of *Myrmecia*.

At the request of several foreign myrmecologists, I con-
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clude this paper with drawings and an accompanying description of the much-discussed type of *Camponotus maculatus* Fabricius. This venerable insect has been ably described by Donisthorpe (Ent. Rec., xxvii, p. 10, 1915), and Arnold (Ann. S.A. Mus. xiv, part v. pp. 621-4, 1922) in his description of *maculatus* has given some notes on the type specimen, but neither of these authors gave figures to

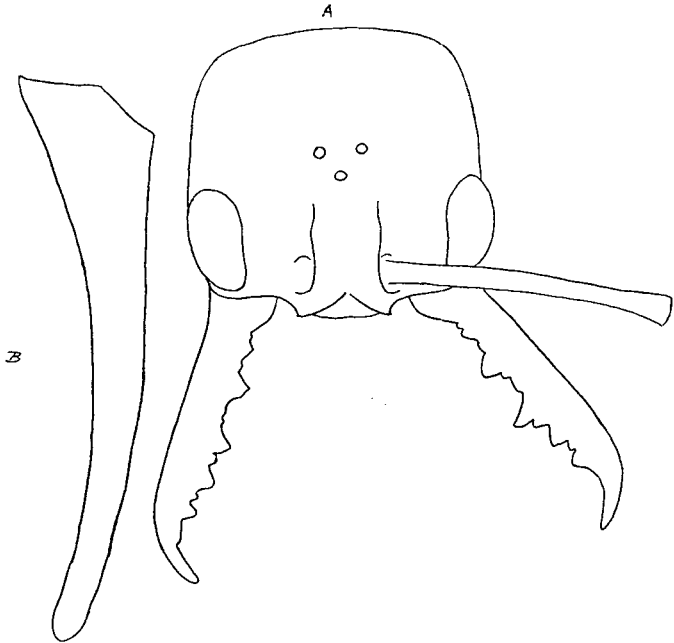


FIG. 1.—*Myrmecia crudelis* Sm., ♀ type.

A = Head. B = Mandible in profile.

show the disposition of the abdominal colouring. I have added a description for the sake of completeness.

***Myrmecia crudelis* Smith.**

♀ Type. Fig. 1. (Cat. Hym. Brit. Mus., vi, p. 147, 1858.)

♀. Length (without mandibles) 20 mm. Mandibles 4.3 mm.

Dark reddish-brown, nearly black; mandibles, antennae and tarsi castaneous.

Pilosity fine, fairly abundant, dark. Pubescence grey, sparse.

Whole insect robust. Head broader than long, as wide behind as in front, the sides parallel, the occipital angles rounded, the border nearly straight. Mandibles robust, the outer border straight or feebly convex. Pronotum broad. Stalk of petiole shorter than the node, the latter being twice as long, slightly broader than long, broadest behind; in profile it is higher in front than behind, the

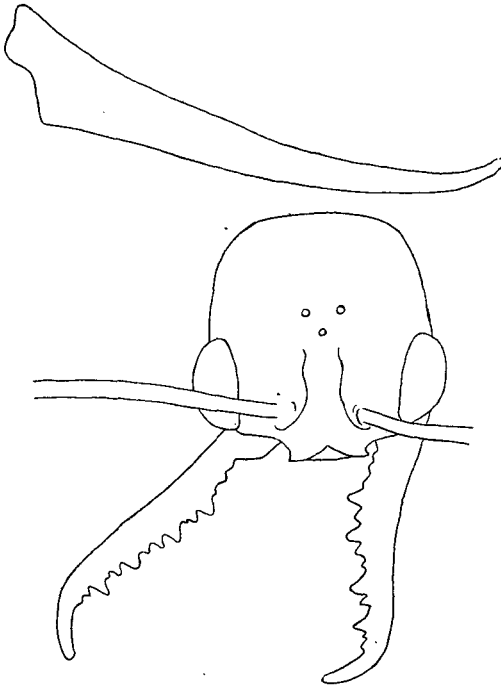


FIG. 2.—*Myrmecia vindex* Sm., ♀ type.

node rising from the stalk in an oblique angle. Underneath in front is a small tooth. Second node broader than long, more than $1\frac{1}{3}$ as broad as the first.

Head coarsely longitudinally rugose, the rugae diverging outwards towards the back of the head. Pronotum with transverse arched striae, rest of thorax and first node transversely striate. Second node and gaster smooth and shining, with microscopic reticulation.

It being uncertain which specimen is the type ♀, I have only described the ♀ of this species.

***Myrmecia vindex* Smith.**

Type. British Museum. Label, "Mr. Moore, West Australia." Fig. 2. (Cat., p. 144.)

♂. Length (without mandibles) 19 mm. Mandibles 4 mm.

Ferruginous; mandibles yellow, teeth edged with black, gaster dark brown, nearly black.

Pilosity rather short, pubescence grey, sparse, principally on under surface of gaster.

Head very slightly, if at all, broader than long, broadest behind eyes, narrowing somewhat rapidly behind, occipital border slightly concave. Mandibles long and thin, the outer border concave. Pronotum anteriorly with a distinct longitudinal impressed line in centre.

Petiole with a long stalk, as long as the rest of the segment; node evenly rounded above, rising gradually from the stalk; beneath is a small acute tooth in front.

Head longitudinally rugose, the rugae more irregular and broken on the vertex and occiput. Pronotum with transverse arched striae, almost straight at base and narrowly arched near apex. Rest of thorax evenly transversely striate. First node with transverse arched striae, second and gaster smooth and shining.

***Myrmecia simillima* Smith.**

Type. British Museum. Fig. 3. (Cat., p. 144.)

♂. Length (without mandibles) 18.5 mm. Mandibles 4.2 mm.

Dark brown, nearly black; mandibles, clypeus, antennae and tarsi ferruginous, rest of legs brown, gaster black. Teeth of mandibles edged with black.

There is a moderately long grey-white pilosity, also a thin grey pubescence over most of body.

Head broader than long, hardly, if at all, narrowing behind the eyes; occipital border straight.

Thorax robust; stalk of petiole slightly shorter than the rest of the segment; in profile the node is slightly higher in front, rising somewhat abruptly, but in an oblique angle, from the stalk. There is a small tooth beneath in front. From above the node is oval, narrower in front, the top somewhat flat. Postpetiole short and broad, $1\frac{1}{2}$ as broad as the first.

Head coarsely longitudinally rugose, the rugae diverging outwards towards the occiput. The rugae are not clean-cut, but wrinkled, and there is a dense ground-reticulation between them.

Neck transversely and pronotum longitudinally striate, the striae on the pronotum diverging outwards towards the base. Rest of thorax transversely striate, the epinotum coarsely so. There is a ground-reticulation, similar to that on the head, on the thorax and first node. Apex of node encircled with striae, the rest irregularly transversely rugose. Postpetiole and gaster smooth and shining, with a very faint microscopical reticulation.

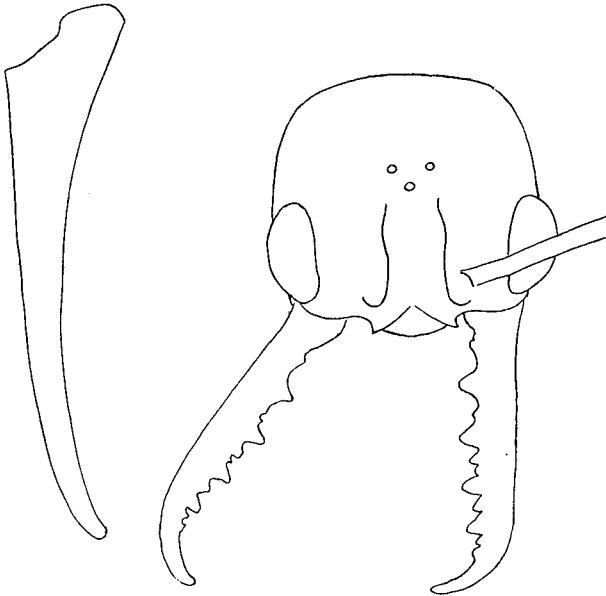


FIG. 3.—*Myrmecia simillima* Sm., ♀ type.

***Myrmecia pyriformis* Smith.**

Type. British Museum. Fig. 4. (Cat., p. 144.)

♀. Length 20·5 mm. Mandibles 4 mm.

Dark brown; mandibles, antennae and legs ferruginous.

Body with a very short yellowish or grey pilosity. There is a thin grey pubescence over most of the body, principally on gaster and second node.

Head broader than long (3·7 mm. broad by 3·3 long). Posterior angles rather square, less rounded than in *crudelis* Sm., though the head is not so broad behind. Outer border of mandibles concave, teeth large. First node as broad as long, very broad behind and

narrowing rapidly in front. Stalk of node very short, the node being $2\frac{1}{2}$ times as long as the stalk. In profile the node rises abruptly in front, more so than in *crudelis*.

Head coarsely longitudinally rugose. Pronotum with moderately arched striae. First node superficially transversely striate, and with one or two punctures in addition. Second node and gaster smooth and shining, both covered with minute points. There is a reticulate ground-sculpture over the whole body.

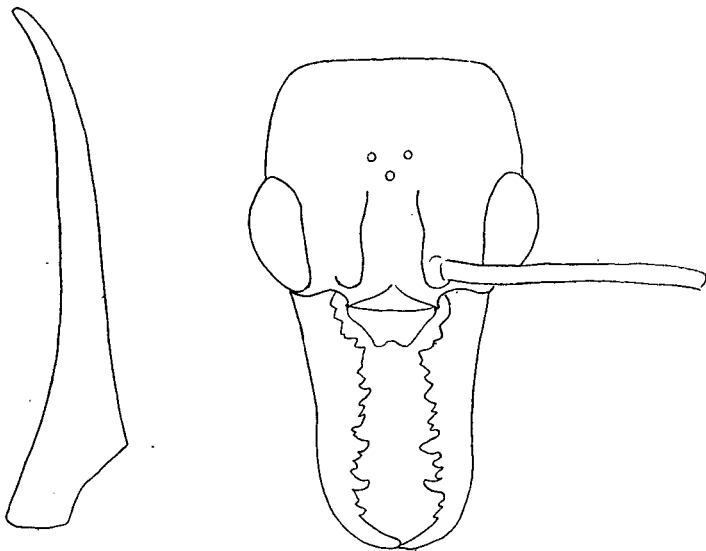


FIG. 4.—*Myrmecia pyriformis* Sm., ♀ type.

Myrmecia sanguinea Smith.

Type. Tasmania. Label, "Smith coll. Pres. by Mrs. Farren White." Fig. 5. (Cat., p. 148.)

♀. Length (without mandibles) 12.5 mm. Mandibles 2.6 mm. (measured from the upper surface of base).

Red, gaster black, coxae paler red, scapes rather darker. Mandibles same colour as head.

Whole body, including legs, with shortish erect hairs. Scapes pubescent, with a few recumbent hairs at apex. There is a thin grey pubescence on body, most abundant on gaster.

Head 2.4 mm. long by 2.6 mm. wide behind eyes, narrower behind, posterior angles moderately rounded. Exterior border of mandibles concave in the middle.

Mandibles with 5 large teeth, not counting the apical; between the apical tooth and the first large one are two smaller teeth; between the 1st and 2nd large teeth are also two smaller ones; between the 2nd and 3rd large teeth are 3 smaller ones, and between the 3rd and 4th one smaller one. The 4th is followed by the 5th large tooth, which is the largest. Beyond the 5th is one medium tooth. The first node seen from above is widest behind the middle, the posterior angles rounded. From the widest point it narrows rapidly to a blunt point at apex. The stalk of the node is less than half as long as the node.

Head irregularly longitudinally striate, but not rugose. Beyond the eyes the striae diverge outwards. At the occiput, which is

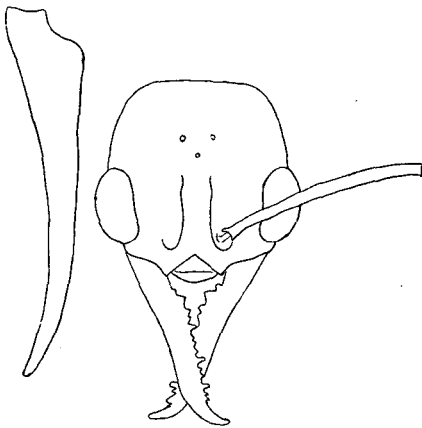


FIG. 5.—*Myrmecia sanguinea* Sm., ♀ type.

mostly smooth, are several short transverse striae. Pronotum with regular arched striae, those in the centre nearly straight. Rest of thorax transversely striate.

First node with a few semi-obsolete striae across the anterior portion, otherwise smooth and shining. Second node and gaster smooth and shining. There is a faint ground-reticulation between the striae on the head, but none on the thorax.

Myrmecia tarsata Smith.

♀ Type. British Museum. Label, "Hunter River."
Fig. 6. (Cat., p. 145.)

♀. Length (without mandibles) 21 mm. Mandibles 4 mm.

Black; mandibles yellow, castaneous at apices, teeth edged with

dark brown, antennae and tarsi pale castaneous, legs dark brown, gaster and second node dark metallic blue.

Pilosity short and sparse. There is a fairly abundant grey pubescence.

Head considerably broader than long, and slightly shorter than mandibles. Occipital border slightly concave. Mandibles with 4 large blunt teeth (excluding the apical), and one or two small blunt teeth between. Outer border feebly concave.

Thorax massive. Petiole short and thick, from above broadly

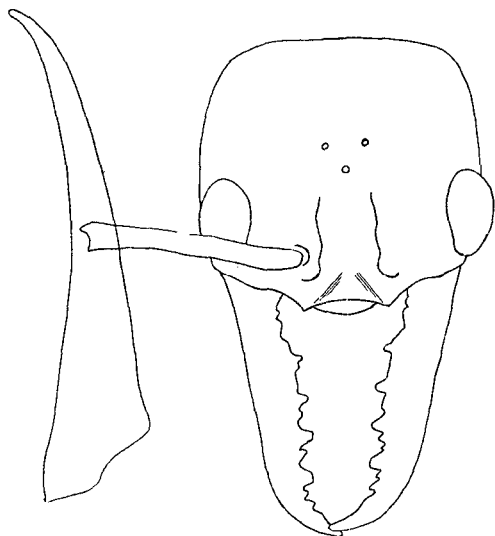


FIG. 6.—*Myrmecia tarsata* Sm., ♀ type.

oval, in profile vertical in front, sloping behind, the top feebly convex. Stalk very short, less than half the rest of node. The usual small tooth beneath in front. Postpetiole very broad, one-third broader than long, and $1\frac{1}{2}$ as broad as petiole. Legs thick.

Mandibles with plentiful small punctures. Head coarsely longitudinally rugose, the lines wrinkled. Neck transversely rugose, the rest of pronotum with a central line and rugae diverging from it towards the base of the segment. Rest of thorax irregularly transversely rugose. First node irregularly rugose, more or less longitudinally. Between the rugae of head, thorax and node the integument is finely reticulate and shining. Postpetiole and gaster smooth and shining with a microscopical puncturation, much

finer on the gaster. In addition the postpetiole has a few piligerous points.

***Myrmecia nigrocincta* Smith.**

Type. British Museum. Label, "Australia." Fig. 7. (Cat., p. 147.)

♀. Length (without mandibles) 11 mm. Mandibles 2.6 mm.

Head, mesothorax and gaster, dark brown, almost black; mandibles

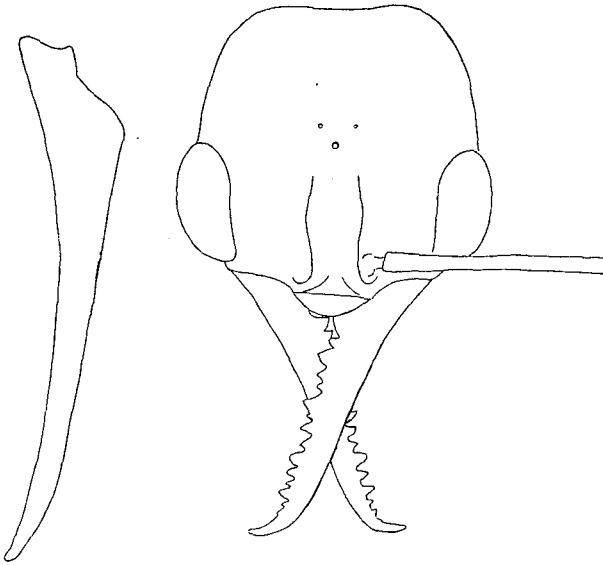


FIG. 7.—*Myrmecia nigrocincta* Sm., ♀ type.

pale ferruginous, pronotum, epinotum and petiole ferruginous, postpetiole dark brown with a ferruginous patch on each side in front, and one transversely across the base; legs dark brown, tarsi and anterior tibiae paler.

Erect pilosity brown, short; scapes bare, legs pilose. Pubescence grey, principally on gaster.

Head as broad as long, widest just behind the eyes, whence it narrows rapidly. Occipital angles rounded. Scape extends one quarter of its length beyond the occipital border. Mandibles long and narrow, the outer border slightly concave (see fig.).

Pronotum with a longitudinal impressed line. Epinotum from above $1\frac{1}{2}$ as long as broad, the apex rounded. Down the centre is

an impressed line. First node in profile rounded, slightly higher behind, the stalk short, slightly more than half as long as the node. From above the node is elongate-oval; the second node is twice as broad, slightly broader than long, narrow in front.

Mandibles microscopically longitudinally striolate, with a few points near the apex. Head very finely longitudinally striate, with a dense ground-reticulation. Pronotum with arched striae, those in the centre behind the middle being very close together. Mesonotum with faint transverse striae. Epinotum with coarser striae. The thorax has a ground-sculpture less dense than that on the head. Petiole and gaster smooth, the first node having a microscopical reticulation, the second and gaster microscopical points.

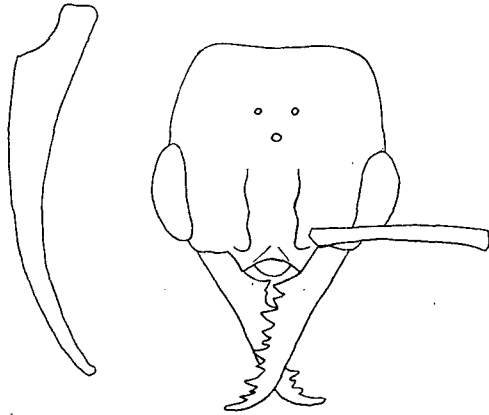


FIG. 8.—*Myrmecia picta* Sm., ♀ type.

***Myrmecia picta* Smith.**

Type. British Museum. Label, "Adelaide." Fig. 8. (Cat., p. 146.)

♀. Length (without mandibles) 9·8 to 10 mm. (The specimen has been pinned and has broken at the pin, and in consequence it is not possible to measure accurately.) Mandibles 1·6; head 1·7 mm.

Dark brown; mandibles, clypeus, frontal carinae and the space between them up to the level of the centre of eyes, and a patch (continued from the clypeus) reaching obliquely from the antennal insertions to nearly half-way up the eye, castaneous yellow; teeth of mandibles ferruginous; antennae castaneous; coxae ferruginous, forelegs the colour of the antennae, the hinder pairs darker, the

femora of the hindmost pair dark ferruginous; petiole dark ferruginous.

Pilosity fine and short, pubescence thin and grey, fairly abundant on upper surface of gaster.

Head very slightly broader than long, broadest at posterior margin of eyes, narrowing considerably to occiput. Occipital border concave. First node from above subglobose, in profile with a short stalk only half the length of the rest of node, the top rounded, higher in front, where it rises somewhat abruptly, sloping behind. Postpetiole broad and short, considerably broader than long, $1\frac{1}{2}$ as broad as first node. Posterior femora considerably swollen for their basal half.

Mandibles with no punctures except the row of piligerous punctures along the line of the teeth. The rest finely reticulate. Head with a fine ground-reticulation, and longitudinal rugae beginning halfway down the eyes and frontal carinae and continuing to the occiput in irregular and broken lines. Whole of thorax irregularly wrinkled, the direction of the rugae indefinite; first node irregularly and circularly rugose. Postpetiole and gaster covered with microscopic points. Legs reticulate. Thorax and first node have in addition a ground-reticulation.

***Myrmecia pilosula* Smith.**

Type. British Museum. Label, "pilosula Smith. Type." Fig. 9. (Cat., p. 146.)

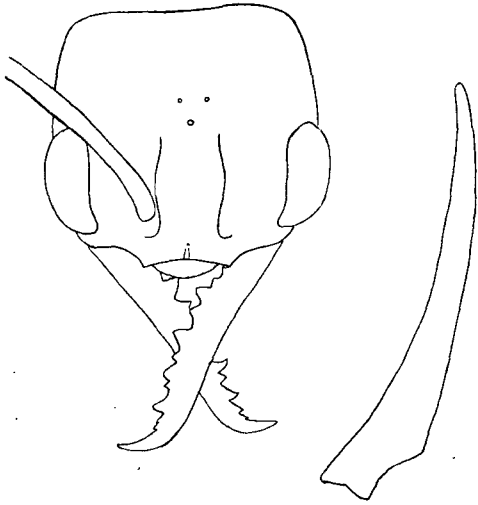
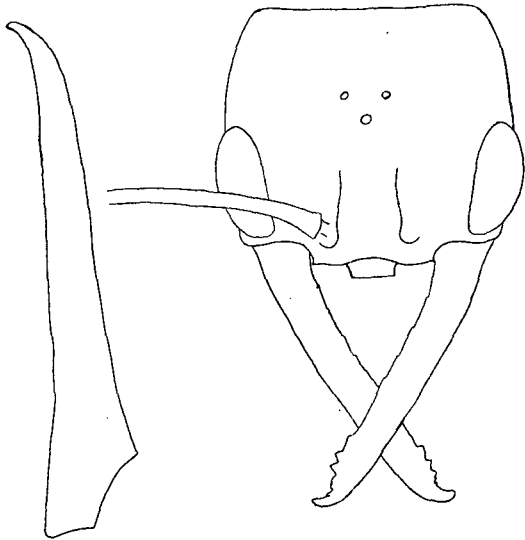
♀. Length (without mandibles) 10 mm. Mandibles 2.2 mm.

Black; mandibles pale castaneous yellow, antennae, tibiae, tarsi and anterior half of anterior femora, ferruginous, rest of legs dark brown.

Pilosity very short and scanty. Pubescence grey, most abundant on postpetiole and gaster.

Mandibles slender, the outer border concave (see fig.). Head almost square, slightly broader than long, the sides converging very slightly behind the eyes, the occipital angles abruptly rounded, the border widely and somewhat deeply concave. The scapes just pass the occipital border.

Epinotum from above nearly twice as long as broad, the anterior border rather broad and transverse. First node in profile abruptly concave in front, rounded behind, the top convex, higher in front. Seen from above it is slightly broader than long, almost transverse in front, rounded behind, the sides very convex. Down the centre is a small elevated ridge. Postpetiole nearly $1\frac{1}{2}$ as broad as long, rather more than $1\frac{1}{2}$ as broad as the first node, narrowed in front.

FIG. 9.—*Myrmecia pilosula* Sm., ♀ type.FIG. 10.—*Myrmecia mandibularis* Sm., ♀ type.

Dull; mandibles shining with abundant small punctures. Head, thorax and petiole with a dense fine ground-reticulation, and in addition the head is finely longitudinally striate, the pronotum has longitudinal striae diverging towards the base, the mesonotum is longitudinally striate, the first part of base of epinotum longitudinally rugose, the rest transversely striate, and the first node has rugae encircling the sides, and the top is superficially rugose. Postpetiole and gaster covered with microscopical points.

***Myrmecia mandibularis* Smith.**

Type. British Museum. Fig. 10. (Cat., p. 145.)

♀. Length (without mandibles) 11 mm. Mandibles 2.9 mm.

Black; mandibles, antennae and legs dark red-brown, tarsi somewhat paler.

Pilosity short and dark, scanty on head and thorax, longer and more abundant on pedicel. Gaster with a dense coat of ferruginous pubescence.

Head broader than long, only slightly broader in front than behind, the occipital angles square, the border widely concave. For mandibles and clypeus see fig. The scape barely passes the occipital border.

Epinotum broad, $1\frac{1}{2}$ as long as broad, the apex broad and rounded. First node in profile cubic, vertical in front, slightly rounded behind, the upper surface feebly convex. Seen from above it is as broad as long, broadest just past the centre, contracting rapidly behind, and narrowing gradually in front to form a transverse anterior border. There is the usual small tooth in front beneath. Postpetiole almost $1\frac{1}{2}$ as broad as long, more than $1\frac{1}{2}$ as broad as the petiole, not at all narrowed anteriorly into a neck.

Shining; mandibles with a few elongate punctures. Head very evenly longitudinally striate, the striae nearly straight, under surface of head mostly smooth. Pro- and mesonotum similarly but rather more strongly striate. The anterior part of the base of epinotum longitudinally rugose, the remainder and the declivity transversely rugose. First node longitudinally rugose, second node irregularly and shallowly longitudinally rugose, some of the rugae taking the form of elongate punctures.

There is no ground-reticulation on body or head.

***Myrmecia piliventris* Smith.**

Type. British Museum. Label, "Australia. F. Smith coll. Type." Fig. 11. (Cat., p. 146.)

♀. Length (without mandibles) 12 mm. Mandibles 2.6 mm.

Black; mandibles and legs very dark red-brown, tarsi and articulations lighter.

Pilosity fairly abundant, dark brown, most abundant under head. There is a slight grey pubescence over parts of the head, thorax and legs. Postpetiole with a thin coat of pale golden pubescence, gaster with a similar but thicker coat.

Head rectangular, broader than long, widest behind the eyes, whence the sides converge extremely slightly to the occipital border,

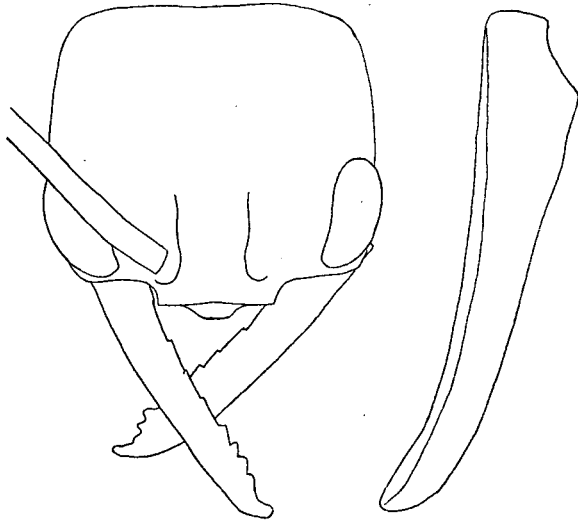


FIG. 11.—*Myrmecia piliventris* Sm., ♀ type.

which is feebly and widely concave; the occipital angles are somewhat square. The scape just reaches the occiput. The mandibles are much shorter and straighter proportionately than in *mandibularis*, also somewhat thicker (see fig.).

Thorax somewhat stout. Epinotum from above broad, broadest behind, the sides converging evenly to a blunt and rounded apex; nearly $1\frac{1}{4}$ longer than broad. First node in profile cubic, vertical in front and behind, the top almost straight. Seen from above it is almost exactly as broad as long, the sides evenly convex, the anterior border transverse, narrower than the equally transverse posterior border. It is slightly wider in front and not so wide behind proportionately as in *mandibularis*. Postpetiole broad and

rounded, about $1\frac{1}{2}$ as broad as long, slightly more than $1\frac{1}{2}$ as broad as first node, similar in shape to that of *mandibularis*.

Shining, but duller than *mandibularis*. Mandibles with a few indeterminate striae at base, which become lines of longitudinal punctures further on.

Head strongly and evenly longitudinally striate, more coarsely than in *mandibularis*. At the occipital angles the striae tend to become reticulate. The under surface of head is reticulate-striate.

Sculpture of pro- and mesonotum similar to that on head but coarser. Anterior part of base of epinotum longitudinally wrinkled, the rest transversely so. First node longitudinally rugose, the postpetiole and gaster densely covered with microscopical points hidden by the pubescence.

The sculpture of the whole insect is altogether coarser than in *mandibularis*.

Cerapachys antennatus Smith.

Jour. Proc. Linn. Soc. Lond. Zool., II, p. 74 (1857).
♀ Type. Borneo (Sarawak), Fig. 12.

Length 7.3 mm. with mandibles. (Smith gives $3\frac{1}{2}$ lines, approximately the same.)

Black; mandibles, clypeus, antennae, legs, pygidium, sting and borders of segments of gaster, ferruginous. The coxae and a patch near the apex of scapes are slightly darker.

Body, legs and antennae with moderately long scattered yellowish-white hairs. Pubescence nil, except on funiculi, tibiae and tarsi.

Head slightly longer than broad, broadest at eyes, broader behind than in front, the sides moderately convex from the occiput to the eyes; from the eyes to the anterior border the sides narrow, at first keeping a straight line, then becoming concave just before the base of mandibles. Occipital border widely and shallowly concave and marginate, the margination continuing under the head. This sharp border gives the occipital angles the appearance of turning outwards. Vertex very convex. On each side between the eyes and the genal carinae the surface of the head is depressed. Mandibles broad, triangular, bent at base, the terminal borders with minute blunt teeth. Gula with a minute blunt tooth at each side. Clypeus short and straight. Frontal carinae high anteriorly, vertical, almost parallel; seen from the front not quite twice as long as their greatest width; between them in front is a small median tooth. Posteriorly they descend rapidly and converge, running parallel

for a short distance but not actually meeting. Frontal groove represented by a few longitudinal striae terminated by 3 punctures in the form of a triangle. Cheeks with a carina, not very prominent, reaching beyond the termination of the frontal carinae. The outer edge is moderately straight for about two-thirds of its length, then curving inwards and forming a blunt oblique-angled projection.

The scapes swell rapidly from base to apex, where they are twice as wide as at base; they reach as far as the middle of the eyes. The latter are placed just behind the middle of sides. All joints of the funiculus except the apical are broader than long, increasing in breadth to the apical, which is equal to more than the preceding 4 joints; joints 7 to 10 equal in length, 6 slightly shorter, the preceding ones extremely short.

Thorax narrower than the head, not quite twice as long as broad, slightly constricted at the meso-epinotal suture, behind which it attains its greatest breadth, which is slightly more than at the pronotum. Promesonotum longer than broad, the anterior border straight and marginate, the margination continuing down the side and beneath, forming a somewhat prominent inferior angle. Sides of pronotum more or less straight. Mesoepinotal suture distinct, showing as a slight impression in the back of thorax in profile, which is otherwise almost straight. Base of epinotum from above broader than long, the sides somewhat convex, the declivity about half as long, slightly concave, and marginate all round.

Petiole from above narrower than the epinotum, slightly longer than broad, very slightly broader behind, the sides feebly convex; in profile it is convex above, slightly higher in front where it is truncate and marginate; beneath is a flat process bearing 2 teeth. Postpetiole considerably broader and longer than the petiole, only slightly longer than broad, more than $\frac{1}{2}$ broader behind than in front, the sides convex, the anterior border with a broad crenulate margination forming sharp lateral angles. In profile it is convex above, higher behind, strongly convex below, the anterior border vertical right through the segment. First segment of gaster longer and broader than postpetiole. Pygidium truncate, with a raised lateral border spinulose along its whole length. At the side of the epinotum is a strong oblique carina just below the spiracle. Middle and hinder tibiae longer than the metatarsi.

Smooth and shining; mandibles shining with a few irregular punctures. Cheeks longitudinally grooved; carinae roughened; head between the eyes and frontal carinae irregularly longitudinally striate. Head, thorax and petiole with a few small scattered circular punctures, postpetiole with similar punctures but smaller, and gaster with even smaller punctures.

Smith says "smooth and shining." There is no trace of longitudinal grooves on the petiole, as in *sulcinodis* Em., and *jacobsoni* For., nor of any confluent punctures as stated by Wheeler ("The Ants of Borneo," Bull. Mus. Comp. Zool., lxiii, 3, p. 45, 1919) in his description of a *Cerapachys* which he took to be *antennatus* Smith. Wheeler's species, judging from the description, also differs from *antennatus* in having the thorax longer, the postpetiole shorter and narrower and without crenulations on its anterior border, the posterior tibiae not longer than the metatarsi, the mandibles opaque, and in other smaller details. I propose the name *wheeleri* for this species.

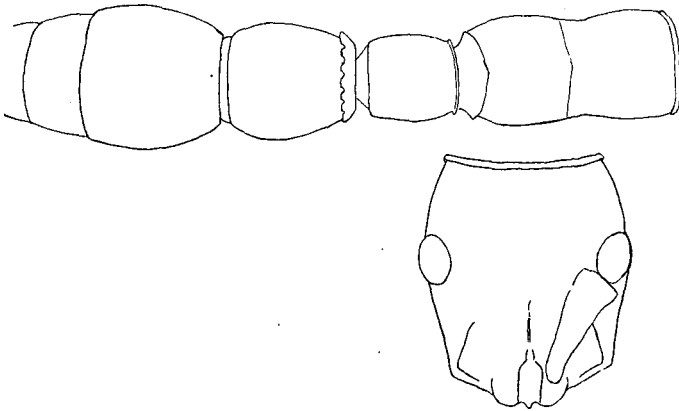


FIG. 12.—*Cerapachys antennatus* Sm., ♂ type.

Judging from the description and figures, the ♀ described by Emery in Ann. Mus. Stor. Nat. Genova, xxv, p. 445 (1887), is probably not the ♀ of *C. antennatus* Smith.

Side by side with the type of *C. antennatus* Smith in the Oxford collection is another *Cerapachys* from Borneo, which corresponds in many points to the species described by Wheeler. I give below some notes on this specimen, but without seeing Wheeler's specimen I hesitate to name it.

Cerapachys labelled "Borneo" only, Oxford Museum.

♂. Length 6.1 mm. Black, with a slight bluish tinge on head and thorax.

Structure very similar to Wheeler's species, but differs in the following points: Sides of head convex from occiput to just beyond
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the eyes, from which point they are straight. Eyes placed distinctly behind centre of sides. No impression on vertex. The gula teeth cannot be seen, probably owing to the method of mounting. The frontal carinae, though similar, actually converge. There is a short frontal groove. The lateral anterior angles of the genal carinae are more prominent than in *antennatus*.

The scapes reach to the top of the eyes. The antennal joints are more globular, and the apical equals the preceding four joints.

Thorax at pronotum less broad than at epinotum. In profile it is more convex in front, and the suture shows. Epinotum and petiole as in Wheeler's species, but the tooth beneath the latter double as in *antennatus*. The postpetiole is similar but differs from Wheeler's in the anterior margination, which is not clean-cut, but on the other hand not distinctly crenulate as in *antennatus*. The carina on the side of epinotum less prominent than in *antennatus*. The tibiae of posterior pair are slightly shorter than the metatarsi; of the median pair longer.

Mandibles shining, sparsely punctate. Head shining with very sparse points, mostly on vertex; thorax with similar points.

Petiole longitudinally sulcate, the lateral sulci broken up by large punctures.

It also differs from *antennatus* in being much less punctured generally, and the petiole is narrower in profile, the postpetiole broader behind and the sides less rounded. The thorax is narrower, especially behind.

Cerapachys MANNI sp. nov.

♀. Length 11 mm. Black; mandibles, frontal carinae, cheeks, antennae, extremities of coxae and femora, the tibiae and tarsi, a large patch on the sides of the postpetiole and the first segment of gaster, the borders of segments of gaster, and the pygidium, ferruginous. Wings yellow-brown, nervures dark brown.

Pilosity over whole body moderately long, golden-brown. Genal carinae pubescent.

Head two-thirds as broad as long, broadest at eyes, sides from eyes to base of mandibles nearly straight and feebly convergent, from eyes to occiput slightly convex, the occipital border concave and margined. Eyes placed just behind the middle of sides of head. Mandibles large, with a long terminal border, longer than the basal border, edentate. Frontal carinae parallel for first three-quarters, then rapidly converging and merging into a short ridge. In front there is a blunt triangular projection but no point or tooth as in *antennatus*. The scapes, which are more than twice as wide at apex as at base,

reach to the back of the eyes. All joints of funiculus broader than long, except the apical, the first two very short. The apical equals the 4 preceding. The outer border of the genal carinae almost straight, the lower angle not very prominent and the upper one consisting of a globular bead. The hind tibia is a fraction shorter and the middle tibia slightly longer than the metatarsus.

Thorax massive, slightly broader at the insertion of the wings than the head. The anterior border of pronotum is margined. The feebly concave declivity of epinotum is slightly longer than the base, the latter is more than twice as broad as long, and slightly convex. The declivity is bluntly bordered.

Petiole seen from above, broader than long, almost rectangular; in profile slightly higher in front where it is vertical and bluntly bordered. Low down on each side is a sharp longitudinal ridge. Postpetiole nearly twice as long as petiole and one-third broader, transverse in front, broadest behind, the sides feebly convex. The first segment of gaster similarly shaped but larger.

Pygidium broad, the apex semicircularly rounded, the border armed with small upright teeth.

Shining; mandibles coarsely and irregularly grooved, the grooves broken by irregular punctures. Head between frontal carinae and genal carinae roughened, then follows a smooth patch with one or two small punctures reaching up to the level of the upper third of the eyes; the remainder of the head is covered with close round punctures except between the ocelli. The thorax similarly punctured, but more sparsely on the scutum, and the scutellum and the centre of base of epinotum are almost smooth. Declivity microscopically reticulate. The upper surface of the petiole has a broad, smooth and shining space reaching from the anterior border for three-quarters of the segment, and half as wide as the whole node; the sides are coarsely rugose-punctate. Postpetiole and gaster with sparse and small punctures. The pygidium closely and finely punctate, except a narrow central strip which is smooth. Scapes closely punctate.

A single ♀ from Serapai (Korintji), Sumatra. (E. Jacobson leg., No. 1272.) Type W.C.C. coll.

I dedicate this species to my friend Dr. W. M. Mann.

***Cerapachys jacobsoni* For. s.sp. SUMATRENSIS s.sp. nov.**

♂. Length 7.1 mm. Black, with a faint bluish tint on parts of head and thorax; mandibles, antennae, cheeks, clypeus, legs and borders of segments of gaster, ferruginous.

Pilosity fairly long, sparse, yellowish-white.

Mandibles as in the type, but terminal border rather longer in proportion. Clypeus similar, also frontal carinae, which have a small tooth between them in front. Genal carinae with a somewhat more prominent anterior lateral angle. Scapes slightly longer, joints of the funiculus less transverse, the apical longer proportionately.

Head distinctly broader and sides more convex. Eyes placed further back.

Thorax considerably stouter. Pedicel and gaster similar except for size.

Posterior tibiae equal in length to the metatarsi, as in *jacobsoni*.

Puncturation of head, thorax, postpetiole and gaster similar. Sculpture of petiole similar, *i.e.* there are two strong central ridges, unbroken, with a deep and smooth sulcus between them and one on each side. The ridges bordering these latter sulci are broken; between them and the well-defined ridge along the base of each side of the segment, the surface is covered with broken longitudinal ridges with deep irregular pits between. Scapes sparsely punctured.

1 ♂. Gunung Dempu, 1916, 1400 metres. (E. Jacobson leg. No. 1207.) W.C.C. Coll.

Much larger than *jacobsoni*. Two cotypes of the latter in my collection measure 5.5 mm. (Forel gives 6.5 mm.). The ferruginous portions are much less bright. The coloration, and the shape of the head as well as the much stouter proportions generally make the new subspecies easily distinguishable. The petiole is longer than in *sulcinodis* Em., from which both *jacobsoni* and the subspecies differ in the presence of a meso-epinotal suture and the contraction of the thorax at that point.

C. jacobsoni For. is described in the Zool. Jahrb., xxxvi (1913), from Java.

♀. Length 7.3 mm. Colour similar to that of the ♀, but the anterior femora partly dark brown.

Pilosity more abundant, yellow.

Petiole shorter, and the two lateral sulci broken by rows of large punctures. Postpetiole and gaster proportionately shorter and broader than in the ♀. Otherwise, except for sexual differences, similar to the ♀.

Wings pale brown, the nervures darker.

2 ♀♀. Gunung Dempu, 1916, 1400 metres (E. Jacobson leg. No. 1261.) Type, W.C.C. Coll.

Camponotus maculatus Fab. (*Formica maculatus* Fab.)

Type. Fig. 13.

4. Length 12 mm. Head (without mandibles) 4 mm., greatest width (at occiput) 3.8 mm., scape 3.5 mm. (funiculi missing), middle femur 3.5 mm., middle tibia 3 mm., middle tarsus 3.3 mm. (the posterior legs are missing). Gaster 4 mm. long by 3 mm. wide.

Head and mandibles brown-black, scape brown-black except a small part at each extremity, funiculus dark yellow, Pronotum and upper surface of thorax dark reddish-brown, lighter than the head. Rest of thorax, the scale and femora, dirty yellow, tibiae and tarsi brown.

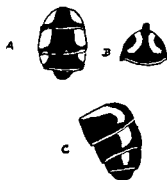


FIG. 13.—Gaster of *Camponotus maculatus* Fab., ♀ type. Showing disposition of marking.

- A. View from above. B. 1st segment seen from in front.
C. Profile.

Gaster dark brown with the exception of the yellow patches and borders of the segments. For disposition of the yellow patches see fig. The patches are not quite so well-defined as they appear in the drawing.

Scapes without erect hairs, but covered with a fine close-lying pubescence. Posterior tibiae with only a few bristles on the under surface. There are 4 long stiff hairs on the pronotum, a few on the scale and on each segment of the gaster, yellow.

Mandibles with 7 teeth. Clypeus carinate.

The scape extends a distance equal to about twice its width beyond the occipital border.

Tibiae flattened, not prismatic.

The whole body is very finely reticulate, the legs and gaster more finely than the rest.