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*The Ants (Hym., Formicidæ) of Waigeu Island,  
North Dutch New Guinea.* By HORACE DONISTHORPE,  
F.Z.S., F.R.E.S., &c.

WAIGEU ISLAND is about 85 miles long and 28 miles wide, and is situated on the north coast of Dutch New Guinea. Ancient crystalline rocks are recorded from Waigeu, but the island appears to be built up mainly of elevated reef limestone ranges. Mount Nok, north of the island, where Miss Cheesman made her chief camp, proves to be of volcanic rock. Miss Cheesman remarks that the fact that Mount Nok is volcanic may have significance in the evolution of the island's fauna and flora.

A wealth of vegetation abounds along the coasts, and forests occur inland.

The only other naturalist, besides Miss Cheesman, who has collected ants on this island is the celebrated Alfred Russel Wallace. He spent two-and-a-half months there and the ants he collected were described by Frederick Smith in 1863. The number of species, or forms, taken by him is 28, and Miss Cheesman has added another 55, making a total of 83 forms altogether. Miss Cheesman took 61 forms on Waigeu altogether, of which 31 were new to Science. They comprise a collection of very interesting and noteworthy ants. It will be seen that many species of the Camponotine genus *Polyrhachis* occur. The discovery of the little hypogaëic ant belonging to the new genus *Ireneidris* is of considerable importance,

Again, as with the ants of Japan Island, certain species in different genera are larger individually than those of the mainland. This is probably the results of long isolation from the mainland, and less competition in the struggle for life. As pointed out by Miss Cheesman, these two islands are part of a very old land system which appears to have existed long before New Guinea emerged from the ocean bed during the Miocene-Pliocene. The ant fauna is chiefly Papuan.

I have been careful to give the type-locality of the known species whenever possible, since Smith's subsequent lists of habitats are not entirely to be relied upon, and sometimes include different species or forms—*Polyrhachis* (*Cyrtomyrma*) *busiris* Smith is a good example.

Besides Smith's "habitats" I also give the known distribution to all the species described before this paper. I must thank my friend Professor G. D. Hale Carpenter for kindly lending me any of Smith's types which became necessary for me to see.

### Formicidæ.

#### Subfamily Ponerinæ.

1. *Platythyrea parallela* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1859, iii. p. 143; 1863, vii. p. 17 [sub. *Ponera*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 454.

*Type-locality*.—Aru.

"*Hab.*—Waigiou : Aru : Celebes : Mysol," Smith, 1863.

♂ (undescribed). Black, antennæ and legs partly brown, mandibles, scape, first joint, tip and base of other joints of antennæ, articulations of the legs, tarsi, spurs, apex of anterior tibiæ, and apex of segments of gaster narrowly reddish yellow. Covered with the usual pruinose pubescence and delicate punctures; rather narrow, subparallel.

*Head* longer than broad, narrowed in front, slightly narrowed behind, posterior angles rounded, posterior border slightly excised and narrowly margined; *mandibles* long, triangular, outer border curved, apical tooth long, pointed, masticatory border armed with a row of short teeth; *clypeus* large, convex, transverse, anterior border rounded; *frontal area* narrow, triangular, not distinctly

defined; *frontal carinæ* short, not raised, rather wide apart; *eyes* large, convex, kidney-shaped, situated on each side of head; *ocelli* moderate, slightly projecting; *antennæ* 13-jointed, *scape* moderate, not reaching posterior border of eye, *funiculus* with first joint very short, all the rest of the joints elongate, second joint longer than third, last joint about as long as the one preceding it. *Thorax* slightly narrower than head with eyes, furnished with a short neck; *pronotum* rather long but transverse, convex, anterior angles rounded and narrowly margined, embracing mesonotum as far as insertion of wings; *mesonotum* rather broad convex, sides slightly narrowed to base; *scutellum* not large, oval, convex but not strongly projecting, narrowed to base; *epinotum* rather long, dorsal surface transverse, convex, declivity abrupt, longer than dorsal surface, concave, sides margined; *node* of *petiole* high, thick, upper surface rounded, anterior surface sloping, posterior surface abrupt, slightly concave; *gaster* with anterior segments parallel, bluntly pointed at apex; *pygidium* armed with a short narrow sharp spine; *genitalia* not prominent. *Wings* infusate, one *dorsal*, two *cubital* and closed *radial cell* present.

*Long.* 6 mm.

Described from a male taken by Miss L. E. Cheesman, Waigeu, Camp Nok, 2500 ft., April, 1938. This is probably the male of *parallela* Smith. The colouring and structure, etc., agree with the description of the worker. It is, however, perhaps on the small size.

2. *Rhytidoponera gagates* Donisthorpe, subsp. *waigeuensis* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1942 (s. 11), ix. p. 703.

*Type-locality.*—Waigeu.

♂ (undescribed). Reddish brown, shining, whole body clothed with outstanding yellow hairs; sculpture rugous, consisting of an irregular network of raised ridges enclosing smooth shining spaces.

*Head*, without eyes, longer than broad, somewhat circular, cheeks and sides of head behind eyes rounded, posterior angles rounded, posterior border rounded, with a very narrow raised margin; *mandibles* long, triangular, finely longitudinally striate, apical tooth long, curved and sharply pointed, masticatory border armed with a number of small teeth; *clypeus* large, slightly convex, transverse,

anterior border round, slightly projecting, a sharp narrow somewhat crooked strongly raised carina extends along centre and is continued between frontal *carinæ*, where it is more strongly raised, other irregular raised ridges occur on disc of clypeus on each side of central carina; *frontal area* not defined; *frontal carinæ* short, sharp, parallel, the small raised part of rim at apex not covering insertion of antennæ; *eyes* large, oblong, convex and very prominent, situated on top of sides of head behind centre; *ocelli* large, round, very convex, rather close together; *antennæ* very long, *scape* comparatively short, not extending beyond posterior border of head, *funiculus* with first joint longer than broad, but short, very much shorter than any of the others, which are much longer than broad, second joint longer than rest, last joint not as long as the two preceding taken together. *Thorax* longer than broad, narrowed in front and behind, broadest before insertion of wings; *pronotum* narrow, transverse, rounded, lower than mesonotum; *pro-mesonotal suture* narrow and shallow but well marked; *mesonotum* very convex on disc, slightly overhanging pronotum, sculpture very rugous; no *mayrian furrows* present; *præscutellum* transverse, smooth and shining in centre and hollowed out, with a row of fine, narrow, longitudinal raised ridges; *scutellum* oval transverse, very prominent, narrowed to base, overhanging the metanotum; *metanotum* narrow transverse with a small raised projection in centre overhanging the epinotum; *epinotum* long, narrowed to base, angle between dorsal surface and declivity not marked, *dorsal surface* longer than declivity, the raised ridges on same more or less transverse, *declivity* with an oblique narrow raised ridge on each side and a longitudinal one in centre; *petiole* long, narrow, broadest before base, *peduncle* with a raised projection on each side and with transverse well-marked striæ on upper surface, that of basal part or node being rugous as in thorax; *gaster* long, oval, shining and smooth, broadest before base of second segment, strangulation between first and second segment well marked; *genitalia* not prominent. *Legs* long. *Wings* infusate, *pterostigma* and *veins* brown, one *discoidal cell*, two *cubital cells* and closed apendiculate *radial cell* present.

*Long.* 10·5 mm.

Described from six males, Waigeu, Camp Stok, 2500 ft., taken by Miss L. E. Cheesman, April and May, 1938.

♂ type in B.M. (N.H.)

3. *Rhytidoponera strigosa* Emery, ♀, Ann. Mus. Stor. Nat. Genova, 1887, xxv. p. 444.

*Type-locality*.—Andai, New Guinea.

*Known distribution*: New Guinea.

♂ (undescribed). Reddish brown, mandibles and antennæ lighter, clothed with light scattered outstanding hairs.

*Head*, not counting eyes and mandibles, longer than broad, short oval, broader in front than behind, posterior angles rounded, posterior border shortly projecting, rounded and margined; *mandibles* long, triangular, finely longitudinally striate and with a few punctures, masticatory border armed with five small short teeth, with some very small dentules between some of them, apical tooth long, curved, and pointed; *clypeus* transverse convex on disc, slightly hollowed out before anterior border, which is round, slightly raised, and margined, the sculpture of disc consists of a network of irregular raised ridges enclosing smooth shining spaces; *frontal area* indistinct, a narrow raised ridge extends between the frontal carinæ, with oblique, narrow transverse raised ridges extending from it on each side behind; *frontal carinæ* with thin raised ridges not covering the insertion of antennæ, divergent behind, sculpture of base of head similar to that on disc of clypeus; *eyes* very large, oval and prominent, considerably longer than cheeks; *ocelli* moderate, prominent; *antennæ* long, *scape* only extending as far as base of median ocellus, *funiculus* with first joint very short, second slightly longer than scape and third joint, rest elongate but getting gradually shorter, last joint not equal to the two preceding taken together. *Thorax* convex, narrowed in front and behind, furnished, with a distinct neck, broadest just before insertion of fore-wings, *pronotum* narrow, transverse, embracing mesonotum as far as insertion of fore-wing, sculpture as in head but transversely striate anteriorly; *mesonotum* very convex, large, narrower in front than behind, a smooth, short, narrow longitudinal space extends from anterior border, rest of sculpture as in head but rather

coarser, posterior border rounded; *scutellum* small, very convex and prominent, narrowed behind, sculpture as in mesonotum; *metanotum* narrow, transverse, projecting above epinotum; *epinotum* rather long, sloping to base, no distinct angle between dorsal surface and declivity, a smooth, narrow, transverse space occurs beneath metanotum, followed by a few transverse ridges; rest of sculpture much as in mesonotum, but the raised ridges are more transverse; *petiole* longer than broad, transversely striate anteriorly, *node* convex, with sculpture as in thorax and slightly rounded sides; *gaster* short, oval, broadest before base of second segment, first segment rather closely transversely striate, second much more finely so; *cerci* prominent, *genitalia* not prominent. *Wings* infuscate, one *discoidal*, two long *cubital* and closed *radial cell* present.

*Long.* 8.5 mm.

Described from a single male, Waigeu, Camp Nok, 2500 ft., taken by Miss L. E. Cheesman, April, 1938.

♂ type in B.M. (N.H.).

This specimen is most probably the male of *strigosa* Emery; but not having been taken with the workers it is not possible to be certain. It is larger than *araneoides* Le Guil., from New Guinea, and *froggatti* Forel, from the Solomon Isles.

From the former it differs in having the node of the petiole rugous instead of smooth, the scape of the antennæ longer, and the transverse striæ on the gaster much stronger, etc., and from the latter in having the sculpture generally more coarse; that of the node of petiole being rugous instead of transversely striate, etc.

Mann (Bull. Mus. Compar. Zool. 1919, lxiii. p. 286) described the male of *froggatti* Forel.

4. *Diacamma rugosa* Le Guil., subsp. *waigeuensis* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1942 (s. 11), ix. p. 703.

*Type-locality.*—Waigeu.

√ Section EXEUPONERINÆ, sect. nov.

Males: mandibles reduced; genital armature entirely retractile; subgenital lamia entire; cerci developed.

## Genus PSEUDONEOPONERA, gen. nov.

Mandibles not well developed; antennæ 13-jointed; maxillary palpi 5-jointed; labial palpi 4-jointed; eyes occupying greater part of sides of head; node of petiole high and thick; two spurs to posterior pairs of tibiæ; claws dentate; cerci developed; genital armature completely retractile.

Genotype: *Pseudoneoponera verecundæ*, sp. n.

This genus is close to *Neoponera* Emery (which occurs in Mexico, Central and South America) in various characters. The eyes, however, occupy a considerably greater part of the sides of the head, the scape is much less broad in proportion and the genital armature is entirely retractile. In the male of *Neoponera villosa* F., the spine to the pygidium is shorter in proportion and not curved, the subgenital lamina is shorter in proportion, the genital armature is partly exposed, and the construction of the parts is different—the stipites are much larger in proportion, thicker and blunter, and the volsellæ and sagitæ are of a different shape, etc.

5. *Pseudoneoponera verecundæ*, sp. n.

♂. Black, mandibles, palpi, scape, and first joint of funiculus bright yellow, clothed with some outstanding yellow hairs and decumbent yellow ones, rather thick on under side of gaster.

*Head* finely and rather closely punctured, transverse, flat, narrow in profile, temples, posterior angles and border rounded; *mandibles* reduced, not meeting, rather broad, with a short, sharp point at apex; *maxillary palpi* rather long, 5-jointed; *labial palpi* 4-jointed; *clypeus* large, transverse, convex on disc, anterior border almost straight and very narrowly margined anterior angles bluntly pointed, *frontal area* triangular but ill-defined, sharply pointed and continued between the frontal carinæ to *frontal furrow*, which is fine and extends as far as a small triangular hollow in front of median ocellus; *frontal carinæ* short, low; *eyes* very large, convex, kidney-shaped, occupying the greater part of the sides of the head; *ocelli* large; *antennæ* 13-jointed, *scape* short but longer than broad, smooth and shining, *funiculus* with first joint very short, transverse, not half as long as scape, smooth and shining, rest of joints pubescent,

considerably longer than broad, last joint not twice as long as the two preceding taken together, but about one-and-a-half times as long as the one preceding it. *Thorax* fairly long, convex, a little narrower behind than in front, broadest between insertion of wings; *pronotum* transverse, narrowest in middle, embracing mesonotum as far as insertion of fore-wing, anterior border narrowly margined with a short projecting neck, shoulders bluntly rounded, finely but a little more distinctly punctured than head; *mesonotum* large, convex, longer than broad, *mayrian furrows* very indistinctly defined, a narrow, triangular, sharply-pointed, smooth, longitudinal, slightly-raised space extends for a short distance on disc from anterior border, the rest of the sculpture consists of a fine network of slightly-raised smooth ridges enclosing small shallow punctures; *præscutellum* transverse, very narrow in middle, forming a rather deep, shining furrow before scutellum; *scutellum* very convex, prominent, and distinctly punctured; *metanotum* narrow, transverse, slightly convex; *epinotum* large, sides narrowly-margined, dorsal surface transverse, convex, with irregular raised ridges enclosing smooth spaces, that in the middle being fairly large, flat and shining, with parallel sides, angle between dorsal surface and declivity marked by a raised ridge, declivity longer than dorsal surface, flat; *node* of *petiole* high, thick, upper surface rounded and marked with large shallow punctures, a fine longitudinal raised ridge in centre ends in a blunt point posteriorly, anterior surface almost straight, posterior surface slightly concave, very smooth and shining, undersurface furnished with a ridge terminating anteriorly in a short sharp tooth pointing downwards, and posteriorly in a longer blunt tooth pointing backwards; *gaster* moderately long and narrow, broadest before apex of second segment, strangu-lation between first and second segments well marked, first segment rounded in front and at sides, second segment longer than first, rounded on sides, *pygidium* armed with a long curved spine; *subgenital lamina* rather long and bluntly pointed; *cerci* well developed; *genitalia* entirely retractile; *stipes* long, curved, narrowed to apex, bluntly pointed;  *volsella* curved, bluntly pointed, but not forming a hook; *lacinia* short, narrowed to apex and sharply pointed; *sagitæ* bluntly rounded at apex,



very finely serrate on thin lower inner border; *spatha* flat, dart-shaped, abruptly narrowed to apex and sharply pointed. *Legs* fairly long, femora and tibiae somewhat compressed, posterior pairs of tibiae armed with a large pectinate spur, and a short stout simple one, the posterior pair of tibiae are flattened and widened at apex and furnished with a row of short spines, the first joint of the posterior pairs of tibiae is furnished with a row of spines on the undersurface, and fine outstanding hairs on the upper surface; *claws* dentate. *Wings* moderate, infuscate, clothed with short black hairs, *pterostigma* and *veins* brown, two *discoidal*, two *cubital*, and closed apendiculate *radial cell* present.

*Long.* 9 mm.

Described from a single male, Waigeu, Camp Nok, 2500 ft., taken by Miss L. E. Cheesman, April, 1938.

Type in B.M. (N.H.).

Emery, in the 'Genera Insectorum,' divides the subfamily Ponerinae into three sections:—Prodorylinae; Proponerinae, and Euponerinae on certain larval and male characters. In the first two the mandibles are fully developed, etc. For the last he gives for the male: "mandibules, plus ou moins réduites; armure génitale non rétractile, avec la lame subgénitale toujours entière; cerci développés." Our insect would come into this section except for the male armature, which was entirely hidden within the gaster, and therefore retractile. Although it is founded on a single male ant, it appears necessary to create a new section, which I have called Exeuponerinae.

6. *Euponera* (*Trachymesopus*) *nixonii*, sp. n.

♀. Black, mandibles, antennae, sides and front of clypeus, lobes of frontal carinae, apex of gaster and apical border of other segments narrowly, and legs, red, femora darker at base. Clothed with long outstanding, and rather close pubescent-like yellow hairs. Head and thorax very finely and closely punctured, dull, scale of petiole and gaster more finely punctured and somewhat shining.

*Head* subquadrate, very slightly (without mandibles) longer than broad, nearly as broad in front as behind, sides subparallel, posterior angles rounded, posterior

border slightly excised in middle; mandibles fairly long and narrow, smooth and shining, very finely longitudinally striate, with a few larger and smaller punctures, *masticatory border* armed with five strong teeth; *clypeus* thick, short, transverse, terminating in a point between frontal carinæ, this posterior part of the clypeus is black and very shining, hollowed out and feebly carinate towards anterior border, which is slightly projecting in middle and feebly sinuate at sides; *frontal carinæ* with broad, flat, rounded lobes which are practically fused together, convergent and then divergent behind, continued in very fine raised ridges; *frontal furrow* fine, narrow, slightly broader and deeper at base, not extending quite as far as base of the frontal carinal ridges; *eyes* large, oval, slightly convex, situated considerably in front of middle of sides of head; *ocelli* rather small, posterior pair rather deeply imbedded; *antennæ* stout, fairly long, *scape* extending as far as posterior border of head, *funiculus* with first joint slightly longer than second, joints 1-7 longer than broad, 8-10 transverse, last joint longer than the two preceding taken together. *Thorax* rather short, scarcely longer than head with mandibles, longer than broad, narrowest behind; *pronotum* fairly long, but transverse, shoulders rounded, *pro-mesonotal suture* rather wide and deep; *mesonotum* scarcely longer than pronotum, not very convex, slightly transverse; *scutellum* small, rather flat, broader than long, front and sides rounded; *epinotum* with dorsal surface, transverse, slightly convex; *declivity* abrupt, concave, smooth and shining, anterior border excised, forming blunt angles at sides; *scale of petiole* as high as epinotum, broadest above, upper surface rounded, anterior surface slightly convex, posterior surface concave; *gaster* rather short, *post-petiole* sharply truncate anteriorly, strangulation between it and second segment distinct, sides of segments slightly rounded; *sting* long and narrow. *Legs* moderate; median tibiæ short, with a number of stiff bristles on their dorsal surfaces, posterior pairs of tarsi with first joint furnished with outstanding hairs or bristles, in addition to the decumbent ones. *Wings* dusky, *pterostigma* and *veins* dark brown, one *discoidal*, two *cubital*, and closed *radial cell* present.

*Long.* 7.8 mm.

Described from a winged female taken by Miss L. E. Cheesman, Waigeu, Camp Nok, 2500 ft., May, 1938. This is a rather large and very distinct insect, superficially it is very like *Euponera* (*Trachymesopus*) *stigma* F., v. *attrita* Forel, from St. Vincent, but is of course abundantly distinct. In *Trachymesopus* the pronotum is longer in proportion, the mandibles are narrower, and the angle between the masticatory and the basal border is much less marked than in *Brachyponera*. This, however, is not the case in the small species *gilva* Roger, *ochracea* Mayr, which should in my opinion be placed in another genus.

I have named this species in honour of my colleague, Mr. G. E. J. Nixon, who has from time to time kindly made dissections and measurements of ants for me.

7. *Cryptopone motschulskyi* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1943 (s. 11), x. p. 167.

*Type-locality*.—Waigeu.

8. *Ponera emergi*, sp. n.

♂. Dark brown, legs and base of antennæ lighter clothed with some short, dark, outstanding hairs, and fine yellowish decumbent ones.

*Head* transverse, rather finely and closely granulate, temples and posterior angles rounded, posterior border truncate, *mandibles* ill-developed, small, short, pointed; *clypeus* small, very convex on disc, bluntly pointed anteriorly; *frontal furrow* rather wide, extending as far as median ocellus; *frontal carinæ* small, short, rather close together; *eyes* very large, oval, convex; *ocelli* rather large; *antennæ* long, 13-jointed, *scape* short, *funiculus* with first joint very short, about half as long as scape, slightly broader than the rest, which are elongate, last joint not as long as the two preceding taken together. *Thorax* narrowed in front and behind, broadest at insertion of wings; *pronotum* transverse, narrow; *mesonotum* high, oval, convex, about as broad as long, puncturation as in head; *scutellum* small but prominent, puncturation more distinct and less close than in mesonotum; *metanotum* not very narrow, transverse, convex; *epinotum* large, long, convex, narrowed to base, no marked angle between dorsal surface and declivity, almost impunctate; *node* of *petiole* rather narrow, sides

narrowed to base, upper surface rounded, anterior surface sloping, posterior surface concave; *gaster* long, sculpture very fine, *pygidium* armed with a short, sharp spine. *Wings* long, slightly tinted and iridescent, covered with very short hairs, *ptero stigma* and *veins* light brown, one *discoidal*, two *cubital* and closed *radial* cell present.

*Long.* 3.5 mm.

Type in B.M. (N.H.).

Described from a single male, Waigeu, Camp Nok, 2500 ft., taken by Miss L. E. Cheesman, May, 1938.

There are over a dozen species of *Ponera* recorded from New Guinea, and this insect is possibly the male of one of them. It differs from the male of *mocsáryi*\* Emery, in being distinctly punctured and larger.

9. *Leptogenys (Lobopelta) diminuta* Smith, var. *laeviceps* Smith, ♂, Proc. Linn. Soc. Lond. Zool. 1857, ii. p. 69; 1863, vii. p. 17 [sub. *Ponera laeviceps*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 448.

*Type-locality.*—Borneo.

"*Hab.* Waigiou; Celebes; Bachian; Borneo," Smith, 1863.

*Known distribution:* Burma; Borneo; Malasian Isles to New Guinea.

10. *Leptogenys (Lobopelta) violacea* Donisthorpe, ♂, Ann. & Mag. Nat. Hist. 1942 (s. 11), ix. p. 705.

*Type-locality.*—Waigeu.

11. *Leptogenys (Lobopelta) nitens* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1943 (s. 11), x. p. 19. ?

*Type-locality.*—Waigeu.

♂ (undescribed). Blackish brown, mandibles brownish yellow, palpi pale yellow, whole body clothed with brownish-yellow outstanding hairs.

*Head* with eyes almost round, slightly broader than long, posterior angles and border rounded; *mandibles* considerably reduced, weak, short, pointed at apex; *clypeus* convex, transverse, anterior border rounded and projecting in middle; *frontal area* triangular, not clearly defined, but continued in a narrow point between frontal

\* In the original description (Term. Füzet. 1900, xxiii. p. 320) the name is spelt as above, but in the 'Genera Insectorum' it is spelt "*mocsáryi*."

carinæ; *frontal carinæ* short; flat, divergent behind; *eyes* very large, oval, convex, occupying greater part of sides of head; *ocelli* moderate, situated towards back of head; *antennæ* long, *scape* moderate, not extending as far back as posterior border of head, *funiculus* with first joint smooth and shining, very short, but a little broader than long, rest of joints pubescent and elongate, second and third joints subequal, last joint not as long as the two preceding taken together. *Thorax* longer than broad, narrowed in front and behind, broadest at insertion of the wings; *pronotum* transverse, narrow, convex, embracing mesonotum on each side nearly to base, anterior border rounded and finely margined; *mesonotum* oval, convex, longer than broad, smooth and shining; *mayrian furrows* well marked, deep; *scutellum* rather small, but prominent, oval, narrowed behind; *epinotum* long, slightly convex, sloping and narrowed to base, no angle between dorsal surface and declivity; *node* of *petiole* rather small, narrow, pointed in profile, upper surface rounded, anterior and posterior surfaces slightly concave, latter longer than former; *gaster* long oval, broadest at apex of second segment, strangulation between first and second segments not marked, very smooth and shining; *pygidium* pointed, *subgenital lamina* long and bluntly pointed; *genitalia* not prominent. *Wings* dusky and covered with short, pale hairs, *veins* and *pterostigma* brown, one *discoidal cell*, two *cubital cells* and closed *radial cell* present. *Legs* moderate, all *claws* pectinate.

*Long.* 6.7 mm.

Described from two males taken by Miss L. E. Cheesman, Waigeu, Camp Nok, 2500 ft., April and May, 1938.

♂ type in B.M. (N.H.).

It is of course possible that these are not the males of *nitens*, as they were not taken with the workers.

12. *Anochetus seminiger* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1943 (s. 11), x. p. 170.

*Type-locality.*—Waigeu.

13. *Odontomachus hæmatoda* L., Hist. Nat. 1758 (10), i. p. 582. Smith, Cat. Brit. Mus. Hyn., vi. p. 76, 1858; Journ. Proc. Linn. Soc. Lond. Zool. 1859, iv. p. 144; 1863, vii. p. 19 [sub. *Odontomachus similimus*].

Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 467.

*Type-locality*.—South America.

“Hab. Waigiou ; Ceram ; Aru ; Ceylon ; Gorham,” Smith, 1863.

*Known distribution* : Cosmopolitan.

14. *Odontomachus tyrannicus* Smith, var. *obsolescens* Donisthorpe, ♀, Entomologist, 1940, lxxiii. p. 106. Smith, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 19 [sub. *Odontomachus tyrannicus*].

*Type-locality*.—Kokoda, Papua.

Common in Waigeu.

15. *Odontomachus gladiator* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 467. Smith, Journ. Proc. Linn. Soc. Lond. Zool. 1861, vi. p. 44 ; 1863, vii. p. 19 [sub. *Odontomachus tyrannicus*].

*Type-locality*.—Celebes.

“Hab. Waigou ; Aru ; Mysol ; Celebes,” Smith, 1863.

16. *Odontomachus ruficeps* Smith, subsp. *cephalotes*, Smith, var. *longitudinalis* Donisthorpe, ♀, Entomologist, 1940, lxxiii. p. 108, fig. 1.

*Type-locality*.—Waigeu.

#### Subfamily *PSEUDOMYRMINÆ*.

17. *Tetraoponera læviceps* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1859, iii. p. 145 ; 1863, vii. p. 20 [sub. *Pseudomyrma*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 455.

*Type-locality*.—Aru.

“Hab. Ceram ; Dory ; Aru ; Waigiou,” Smith, 1863.

*Known distribution* : Aru ; New Guinea.

#### Subfamily *MYRMICINÆ*.

18. *Pheidologeton affinis* Jerdon, 4 ♀, Madras Journ. Lit. Sci. 1851, xvii. p. 40 [sub. *Ecodoma*]. Smith, Journ. Proc. Linn. Soc. Lond. Zool. 1861, vi. p. 48 ; 1863, vii. p. 22 [sub. *Solenopsis laboriosa*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 469.

*Type-locality*.—Celebes.

“Hab. Waigiou ; Celebes,” Smith, 1863.

*Known distribution* : India ; Malasia.

19. *Pheidole* (*Pheidolacanthinus*), *4-spinosa* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1864, viii. p. 72, pl. 4, fig. 6 (sub. *Myrmica*); ♂, l. c., p. 75, fig. 8 [sub. *Pheidolacanthinus armata*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1938 (s. 11), i. p. 144; ♀♂, Entomologist, 1941, lxxiv. pp. 38-39.

*Type-locality*.—Salwaty, New Guinea.

Waigeu, ♂♀♂, Miss L. E. Cheesman.

20. *Pheidole* (*Pheidolacanthinus*) *bifurcus* Donisthorpe, ♂, ♀, Entomologist, 1941, lxxiv. p. 36.

*Type-locality*.—Waigeu.

21. *Pheidole* (*Pheidolacanthinus*) *medioflava* Donisthorpe, ♀, Entomologist, 1941, lxxiv. p. 37.

*Type-locality*.—Waigeu.

22. *Pheidole* (*Pheidole*) *fuscula* Emery, ♂♀, Term. Füzet. 1900, xxiii. p. 225.

*Type-locality*.—Insula Beliao, New Guinea.

Waigeu, Camp Nok, 2500 ft., 3 ♀♀, Miss L. E. Cheesman, May, 1938.

23. *Pheidole* (*Pheidole*) *distincta*, sp. n.

♀. Head and thorax deep black, petiole, post-petiole, greater, and part of femora and tibiæ dark brown, mandibles, antennæ, articulations of the legs, tarsi, and apex of gaster yellow.

*Head* round oval, closely granulated, broader posteriorly than anteriorly, broadest across eyes, posterior angles rounded, posterior border slightly excised in middle; *mandibles* smooth and shining, masticatory border armed with a row of very short blunt teeth, the one before the apical one slightly longer, apical tooth long and sharp; *clypeus* transverse, convex, finely carinate in middle, anterior border round; *frontal area* deep, divided in middle by a fine raised ridge or carina; *antennal foveæ* round, deep; *antennal carinæ* low, widely separated, parallel behind, extending in very fine lines beyond antennal foveæ; *eyes* round, prominent, with outstanding facets; *antennæ* 12-jointed, moderately long, *scape* curved, extending a little beyond posterior border of head, first joint of *funiculus* long, 3-jointed *club* longer than rest of *funiculus*, last joint slightly longer than the

two preceding taken together. *Thorax* rather short, broader in front than behind; *pronotum* with anterior margin and angles rounded, a small, low, shining tubercle present on each side of disc; *pro-mesonotal suture* entirely absent; *meso-epinotal suture* deep; *epinotum* armed with two small, sharp, upstanding teeth at base of dorsal surface, *declivity* shorter than dorsal surface; *petiole* narrow, with a raised narrow node, rounded but rather sharp on upper surface, at apex, higher than post-petiole; *post-petiole* short, globular, transverse, broader than petiole; *gaster* short, oblong oval, truncate at base, narrowed to apex. *Legs* with spindle-shaped *femora* and *tibiæ*.

*Long.* 2 mm.

Described from a single worker, N. Dutch New Guinea. Waigeu, Camp Nok, 2500 ft., May, 1938 (*Miss L. E. Cheesman*). Taken with other ants in crevice between rocks of shale on top of a ridge.

Type in B.M. (N.H.).

This very distinct little ant is unlike any other known species in this area in colour, sculpture, etc. It is unfortunate that the nest was not traced and soldiers and other workers taken.

24. *Pheidole (Pheidole) melanogaster*, sp. n.

♂. Head, thorax, petiole, antennæ, and legs reddish yellow, mandibles brownish yellow, masticatory border of mandibles, eyes, cheeks anteriorly, post-petiole and gaster blackish; somewhat shining, clothed with fine yellow outstanding hairs.

*Head* subquadrate, narrower in front than behind, broadest before posterior angles, cheeks straight, slightly oblique, sides of head behind eyes slightly rounded, posterior angles bluntly rounded, posterior border moderately excised in middle, a narrow, smooth, shallow channel posteriorly divides the lobes of the head, cheeks and front of head with fine raised longitudinal ridges; becoming obsolete towards posterior border; *mandibles* massive, triangular, smooth and shining, with small, scattered, shallow punctures, masticatory border unarmed with the exception of the far-placed apical teeth; *clypeus* with anterior border slightly emarginate in centre, disc smooth and shining, not very convex; *frontal area*



small, triangular, smooth and shining, not very distinctly defined; *frontal carinæ* divergent posteriorly; *antennal foveæ* round, deep; *eyes* small, rather flat, situated at sides of head in front of centre; *antennæ* 12-jointed, moderate, *scape* curved, extending slightly beyond centre of head, *club* 3-jointed, longer than rest of *funiculus*, last joint equal in length to two preceding taken together. *Thorax*: *pronotum* with a few fine transverse striæ before neck, humeral angles prominent, bluntly tuberculate, *pro-mesonotal* suture obsolete; *meso-epinotal suture* deep and wide; *epinotum* armed with two short, sharp, slightly divergent teeth; declivity between smooth and shining; *petiole* with rather long *peduncle*, tuberculate at sides in front, *node* narrow, high, slightly excised on upper surface; *post-petiole* round, globose, broader than *petiole*; *gaster* short oval.

*Long.* 3.7 mm.

♂. Colour and hairs similar to that of ♀, legs paler.

*Head* ovate, very finely longitudinally striate, posterior angles rounded, posterior border slightly excised in middle; *mandibles* smaller and narrower in proportion, crossed, masticatory border armed with a row of fine sharp little teeth; anterior border of *clypeus* almost straight; *frontal area* larger in proportion and better defined; *antennæ* long, *scape* extending beyond posterior border of head, *club* longer than rest of *funiculus*, last joint equal to the two preceding taken together. *Thorax* very finely coriaceous; humeral angles only slightly prominent, teeth to *epinotum* similar to those of the ♀; *petiole* and *post-petiole* similarly formed; *gaster* oval, longer and narrower in proportion to that of ♀.

*Long.* 2.3 mm.

Described from a soldier and worker taken by Miss L. E. Cheesman, Waigeu Is., Mt. Nok, 2500 ft., iv.-v. 1938; on herbage, etc., by casual collecting.

♂ and ♀ types in B.M. (N.H.).

25. *Pheidole* (*Pheidole*) *tenuiclavata*, sp. n.

♂. Rather pale yellow, shining, head and front of thorax brighter, rest of body, anterior femora and posterior pairs of legs of a rather dirty yellow, eyes and masticatory border of mandibles blackish, clothed with short, sparse, outstanding yellow hairs.

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*Head* subquadrate, slightly narrowed in front and behind, posterior angles bluntly rounded, posterior border moderately excised in middle; *mandibles* with a few small shallow punctures, apical tooth fairly sharp and long; *clypeus* triangular, transverse, narrow, anterior border slightly excised in middle, sinuate on each side, convex on disc; *frontal area* triangular, rather deep, smooth and shining, bluntly pointed behind, a narrow shallow furrow extends from its base to posterior border of head; *frontal carinæ* short, flat, convergent and then divergent behind; *cheeks* and front of head finely longitudinally striate, lobes and posterior part of head smooth; *antennæ* rather slender, *scape* slightly curved, only extending slightly beyond centre of head, *club* rather slender, not longer than rest of *funiculus*, last joint distinctly longer than the two preceding taken together; *eyes* rather small, situated on sides of head before the middle. *Thorax* considerably narrower than head, longer than broad, narrowed behind, convex on disc, no *suture* between *pro-* and *mesonotum*, humeral angles bluntly pointed; *meso-epinotal suture* deep; *epinotum* armed with two short sharp teeth, *declivity* abrupt, longer than dorsal surface; *petiole* with rather long, slender *peduncle*, and narrow raised *node*, rounded above; *post-petiole* transverse, rounded above and at sides, broader than petiole; *gaster* short, round oval. *Legs* moderate.

*Long.* 2-2.3 mm.

♀. Colour and hairs as in ♂; smooth and shining.

*Head* ovate, slightly broader behind, posterior angles rounded, posterior border excised in middle; *mandibles* armed with five small teeth with some smaller denticules between; *clypeus* transverse, triangular, narrow, anterior border rounded, disc convex; *frontal area* triangular, shallow, bluntly pointed behind; *frontal carinæ* short, flat, divergent behind; *eyes* rather small, round, prominent, with rather coarse facets, situated at sides of head before the middle; *antennæ* moderately long, *scape* curved, extending only a little beyond posterior border of head, *funiculus* with marked club not as slender as in ♂; *club* longer than rest of *funiculus*, last joint longer than the two preceding taken together. *Thorax* longer than broad, broadest in front, narrower than head; no *pro-mesonotal suture* present, *shoulders* rounded; *meso-epinotal suture* not very deep; *epinotum* armed with two

very small sharp teeth; *petiole* with moderately long peduncle, and small, narrow, raised *node* behind; *post-petiole* transverse, rounded at sides and above, broader than *node* of *petiole*; *gaster* small, oval, narrowed and truncate at base. *Legs* moderately long.

*Long.* 1.3–1.5 mm.

Described from three soldiers and very many workers taken by Miss L. E. Cheesman from a nest sheltered by roots and trunk of tree; entrance consisting of loose pellets of soil; pupæ, soldiers, etc., inside hollow dead roots. Waigeu, Camp Nok, 2500 ft., April and May, 1938.

Type (♂) and ♀ type in B.M. (N.H.).

This species comes near to *umbonata* Mayr, but is smaller, less brightly coloured, and the hairs are shorter and sparser. In the soldier the head is shorter in proportion; the club of the antennæ more slender, and the joints are differently formed (in *umbonata* the last joint is not longer than the two preceding taken together); the striæ of the head are finer; the apical tooth of the mandibles sharper; the frontal area longer and narrower; the eyes are smaller. The humeral angles less prominent and the peduncle of *petiole* longer and more slender.

26. *Pheidole* (*Pheidole*) *umbonata* Mayr, ♂♀, Verh. Zool. Bot. Ges. Wien, 1870, xx. pp. 977, 978.

*Type-locality.*—Samoa.

*Known distribution:* Samoa; New Guinea; New Caledonia; Society Isles.

Waigeu, Camp Nok, 2500 ft.; three soldiers and two workers taken by Miss L. E. Cheesman from a nest in a dry twig, April, 1938. Tube 16.

27. *Ireneidris myops* Donisthorpe, ♀, Ent. Mo. Mag. lxxix. (1943), p. 81.

*Type-locality.*—Waigeu.

28. *Lordomyrma nigra* Donisthorpe, ♀, Ent. Mo. Mag. 1941, lxxvii. p. 36.

*Type-locality.*—Waigeu.

29. *Crematogaster* (*Orthocrema*) *brevimandibularis*, sp. n.

♂. Head black, thorax and pedicel yellowish brown, the præscutellum, scutellum, epinotum, and pedicel being lighter, *gaster* dark brown, antennæ yellow, legs

brownish yellow, clothed with short, not close, decumbent yellow hairs.

*Head* narrow, transverse, front smooth, on each side inside of eye finely longitudinally striate, occiput behind ocelli, very finely transversely striate, temples rounded, posterior angles acute, posterior border somewhat projecting, very slightly and widely emarginate, finely margined; *mandibles* short, ill-developed, not dentate, pointed at apex; *clypeus* oval, transverse, anterior and posterior borders rounded, with a rather deep narrow furrow along the latter; *frontal carinæ* short, subparallel; *eyes* large, oval, convex; *ocelli* large, situated on top of head; *antennæ* short, 12-jointed, *scape* very short, smooth and shining, very little longer than first joint of *funiculus*, which is somewhat globose, smooth and shining, rest of joints pubescent, gradually increasing in length to apex, last joint very little longer than the one preceding. *Thorax* oval, broadest a little before the centre; *pronotum* transverse, very narrow anteriorly; *mesonotum* large, a little longer than broad, very convex, rounded and narrowed in front, overlapping pronotum, furnished with some scattered shallow punctures on disc; no *mayrian furrows* present; *præscutellum* transverse but not very narrow, slightly convex; *scutellum* fairly large, prominent, bluntly pointed and pointing backwards in profile, overhanging metanotum; *epinotum* convex, rounded; *petiole* rather flat, broader in front than behind; *post-petiole* globose, transverse, slightly impressed in centre; *gaster* short oval. *Wings* long, ample, hyaline, iridescent, *pterostigma* and *veins* pale yellow, one large *discoidal*, one large *cubital*, and long closed *radial cell* present.

*Long.* 3 mm.

Type in B.M. (N.H.).

Described from a single male, Waigeu, Camp Nok, 2500 ft.; taken by Miss L. E. Cheesman, April, 1938. For the characters of the male in the genus *Crematogaster*, Emery gives:—"Mandibules sein développées, dentées." In the above species, as we have seen, the mandibles are short, not well developed, and not dentate.

Having examined a certain number of males of different species in the subgenera of *Crematogaster* in the B.M. Collection, I find that this is a very variable character. In *Acrocalia*, for example, one finds reduced mandibles, well-developed and dentate mandibles, and sharply-

pointed, but not dentate, ones. I have given this species its trivial name to call attention to this fact.

30. *Podomyrma basalis* Smith, var. *brunneus* Donisthorpe, var. n.

♀. The parts of the ant which are more darkly coloured than the rest in the typical form (from Aru, Bachian and Dory in the B.M. Coll.) are still more so, being dark brown in this variety; otherwise there is no difference.

Waigeu, Camp Nok, 2500 ft. Twelve workers taken by Miss L. E. Cheesman on a felled fig-tree, May, 1938. The nest was situated "in a beetle burrow with a small entrance."

31. *Podomyrma læviceps* Mayr, ♀, Tijds. v. Entom. 1867, xx. p. 108 [sub. *Podomyrma læviceps* Smith, *in litt.*].

*Type-locality*.—"Waigeou (Coll. Mayr and D. Smith)."

There is no *Podomyrma læviceps* Smith in the literature, and this appears from the description, etc., to be a rather unsatisfactory species.

32. *Podomyrma gracilis* Emery, ♀, Ann. Mus. Stor. Nat. Genova, 1887, xxv. p. 460, pl. ii. fig. 15.

*Type-locality*.—Ramoï, New Guinea.

Waigeu, Camp Nok, 2500 ft. Fifty workers taken by Miss L. E. Cheesman, April and May, 1938. Tube 26: "Ants examining moss and fungus on a newly felled trunk; collecting spores?" Tube 32: "Ants walking on a log."

In the 'Genera Insectorum' Emery gives his species *P. gracilis* as a subspecies of *P. læviceps* Mayr, no doubt following Viehmeyer (Deutsch. Ent. Zeits. 1914, p. 521). This appears to me to be unnecessary, considering the rather doubtful status of *læviceps*.

33. *Podomyrma gibbula* Viehmeyer, ♀, Deutsch. Ent. Zeits. 1914, p. 523.

*Type-locality*.—Rawlinsongebirge, Papua.

Waigeu, Camp Nok, 2500 ft. Two workers taken by Miss L. E. Cheesman, May, 1938.

34. *Cataulacus setosus* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1861, v. p. 114; 1863, vii. p. 24. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 464.

*Type-locality*.—Bachian.

"Hab. Mysol; Waigiou; Bachian," Smith, 1863.

Waigeu, Camp Nok, 2500 ft. Two workers taken by Miss L. E. Cheesman in log containing a nest of *Technomyrmex detorquans* Walker, April, 1938.

Subfamily *DOLICHODERINÆ*.

35. *Ireneia omyrmex* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1938 (s. 11), ii. p. 502, text-fig.; Trans. R. Ent. Soc. Lond. 1941, pt. 2, p. 59.

*Type-locality*.—Mt. Nomo, Durch New Guinea.

*Known distribution*: New Guinea, Japen and Waigeu Isls.

Waigeu, Camp Nok, 2500 ft. One worker taken by Miss L. E. Cheesman, April, 1938.

36. *Leptomyrmex fragilis* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1858, iii. p. 136; 1863, vii. p. 12 [sub. *Formica*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 452.

*Type-locality*.—Aru.

"Hab. Waigiou; Aru."

*Known distribution*: New Guinea; Waigeu; Aru.

Waigeu, Camp Nok, 2500 ft. Eighteen workers taken by Miss L. E. Cheesman on herbage, etc., April and May, 1938. "Carries gaster over back."

37. *Leptomyrmex fragilis* Smith, subsp. *melanoticus* Wheeler, ♀, Bull. Mus. Compar. Zool. 1934, lxxvii. p. 113.

*Type-locality*.—Papua.

*Known distribution*: New Guinea.

Waigeu, Camp Nok, 2500 ft. Fifteen workers taken by Miss L. E. Cheesman, May, 1938.

38. *Iridomyrmex minutus* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1943 (s. 11), x. p. 171.

*Type-locality*.—Waigeu.

39. *Iridomyrmex myrmecoidæ* Emery, ♀, Ann. Mus. Stor. Nat. Genova\*, 1887, xxiv. p. 249 [sub. *Iridomyrme x cordatus* Smith, var. *myrmecoidæ*].

*Type-locality*.—New Guinea?

\* In the above reference Emery quotes "Malesia, Vol. II. p. 208" as the publication for the original description. This we have been unable to trace. In the 'Genera Insectorum,' 1912, cxxxvii. p. 125, he gives *myrmecoidæ* as a good species, and location "Iles de la Malaisie."

Waigeu, Camp Nok, 2500 ft. Very many workers taken by Miss L. E. Cheesman in tuberous roots of epiphytes; in leaf-bases of *Pandanus* sp.; in hollow galleries of aerial roots, with eggs in small chambers; in log, etc., March, April and May, 1938.

40. *Iridomyrmex myrmecoidæ* Emery, var. *nigriventris* Donisthorpe, ♂, Trans. R. Ent. Soc. Lond. 1941, xci. pt. 2, p. 60.

*Type-locality*.—Japen Island.

Waigeu, Camp Nok, 2500 ft. Twelve workers and one male taken by Miss L. E. Cheesman, April, 1938. "Nest in soil below roots of a tree entrance particularly wide but not high."

♂ (undescribed). Reddish yellow, gaster blackish, mandibles, antennæ and legs pale yellow, eyes black.

*Head* transverse, rather flat when viewed from front, sides behind eyes rounded, posterior border truncate; *mandibles* short, broad, bluntly pointed; *clypeus* transverse, anterior border pointed in centre, sinuate on each side; *frontal carinæ* short; *eyes* large, prominent, convex, situated on each side of head in front; *ocelli* large, rather wide apart and almost on the same level, situated on posterior border of head; *antennæ* 13-jointed, *scape* about as long as second joint of funiculus, first joint of funiculus considerably shorter and somewhat globose. *Thorax* rounded in front and narrowed behind, longer than broad, broadest before insertion of fore wing; *pronotum* very narrow, transverse; *mesonotum* ample, convex, overlapping pronotum; *præscutellum* transverse, narrow, raised at sides; *scutellum* transverse, convex on disc, broader in front than behind; *metanotum* narrow, transverse, flat; *epinotum* long, convex, rounded, narrowed behind, no marked angle between dorsal surface and declivity; *petiole* furnished with a rather thick rounded node; *gaster* short, oval; *genitalia* exerted. *Legs* long. *Wings* pale yellow and somewhat iridescent, *pterostigma* and *veins* very pale yellowish brown, one *discoidal cell*, one *cubital cell*, and closed *radial cell* present.

*Long.* 3.2 mm.

Male type in B.M. (N.H.).

The male of *nigriventris* is more brightly coloured and the gaster blackish, etc. The typical form is brownish testaceous.

41. *Iridomyrmex murinus* Emery, ♀, Nova Guinea, 1911, v. p. 536, fig. 4.

*Type-locality*.—Wa Udu, New Guinea.

Waigeu, Camp Nok, 2500 ft., some 30 workers taken by Miss L. E. Cheesman by casual collecting, May, 1938.

42. *Iridomyrmex giganteus*, sp. n. √√

♀. Head brownish red, darker at base, legs lighter, antennæ yellowish red, rest of body blackish, apex of segments of gaster narrowly yellow; clothed with outstanding yellow hairs and fine yellowish-grey pubescence; rather shining.

*Head* large, longer than broad, a little broader at base than at apex, only slightly convex, sides straight, sub-parallel, posterior angles bluntly rounded, posterior border rather strongly excised in middle; *mandibles* massive, triangular, a number of larger and smaller not very close shallow punctures is present, masticatory border armed with a row of teeth, the two apical ones long and sharp, the three next considerably shorter and blunter, the rest small, obscure, probably worn; *clypeus* large, triangular, rather flat, anterior border almost straight, posterior border round, extending a little between the frontal carinæ; *frontal area* ill-defined; *frontal carinæ* not large, slightly raised, with sharp rims divergent behind; *antennal fovea* confluent with *clypeal fovea*, which is rather large and deep; *antennæ* moderate, *scape* curved, not quite reaching posterior border of head, *funiculus* with all joints longer than broad, but getting shorter towards apex, first joint narrower, but about as long as second, last joint not quite as long as the two preceding taken together; *eyes* large, kidney-shaped, convex, situated on top of sides of head before the middle; *ocelli* large, situated on top of head near posterior border. *Thorax* rather narrow, long oval, convex, slightly narrower at apex than at base, broadest at insertion of forewing; *pronotum* transverse, slightly projecting anteriorly, border raised and narrowly margined; *mesonotum* large, long, convex, but rather flat at base, narrowed and rounded anteriorly, a smooth, narrow, very slightly raised longitudinal space extends from anterior border towards disc; *scutellum* large, transverse, but rather flat and not prominent; *metanotum* a little higher than scutellum and epinotum; *epinotum* large, convex,



rounded, slightly narrowed to base, angle between dorsal surface and declivity not marked; *scale* of *petiole* large, high, narrow, hexagonal, upper border distinctly emarginate; *gaster* voluminous, long, broader than thorax. *Wings* ample, very pale yellow, *pterostigma* yellow, *veins* light yellow brown, one large *discoidal cell*, two large long *cubital cells*, the upper one rather narrow, and long closed *radial cell* present.

*Long.* 15 mm.

Described from two winged females. Waigeu, Camp Nok, 2500 ft. Taken by Miss L. E. Cheesman, April, 1938.

Type in B.M. (N.H.).

The females of *Tridomyrmex* are all considerably larger than the workers, but the above-described female is much too large to belong to any of the known workers of this genus.

43. *Technomyrmex detorquans* Walker, ♂, Ann. & Mag. Nat. Hist. 1859 (s. 3), iv. p. 372 [sub. *Formica*]. Smith, Journ. Proc. Linn. Soc. Lond. Zool. 1861, vi. p. 38 [sub. *Formica (Tapinoma) albipes*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), ix. p. 575.

*Type-locality.*—Ceylon.

Cosmopolitan.

Waigeu, Camp Nok, 2500 ft. Fourteen workers taken by Miss L. E. Cheesman from a nest in a log, April and May, 1938. Also taken by her on Japen Island.

#### Subfamily FORMICINÆ.

44. *Æcophylla smaragdina* F., ♀, Syst. Ent. 1775, p. 828 [sub. *Formica*]. Smith, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 17.

*Type-locality.*—India.

“*Hab.* Mysol; Timor; Waigiou; Gilolo; Bachian; Dory; Aru; ‘Borneo; Philippines; Java; India,” Smith, 1863.

*Known distribution:* Hindostan; Indochina; Ceylon; Sonde Isles.

45. *Æcophylla smaragdina* F., subsp. *nitida* Emery, var. *krampsi* Donisthorpe, ♀♀, Ann. & Mag. Nat. Hist. 1938 (s. 11), i. p. 598.

*Type-locality.*—Cyclops Mountains, Dutch New Guinea.

Waigeu, Camp Nok, 2500 ft. A number of workers taken by Miss L. E. Cheesman from nests in March and April, 1938.

46. *Camponotus (Tanæmyrmex) coxalis* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1859, iii. p. 126; 1863, vii. p. 12 [sub. *Formica*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 452.

*Type-locality*.—Aru.

“*Hab.* Waigiou; Aru; Mysol,” Smith, 1863.

*Known distribution*: New Guinea.

Waigeu, Camp Nok, 2500 ft. Fifteen (♂♂ and ♀♀) taken by Miss L. E. Cheesman in hut after sugar, April and May, 1938; and one small male on the wing, April, 1925.

47. *Camponotus (Tanæmyrmex) circumspectus* Smith, ♂♂♀, Journ. Proc. Linn. Soc. Lond. Zool. 1861, vi. p. 37; 1863, vii. p. 12 [sub. *Formica*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 465.

*Type-locality*.—Celebes.

“*Hab.* Waigiou; Celebes,” Smith, 1863.

48. *Camponotus (Myrmamblis) longiceps* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 13 (sub. *Formica*). Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 469.

*Type-locality*.—Waigeu.

49. *Camponotus (Colobopsis) rufifrons* Smith, ♀♀, Journ. Proc. Linn. Soc. Lond. 1860, iv. Supplement 95 [sub. *Formica*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 459.

*Type-locality*.—Bachian.

*Known distribution*: New Guinea; Friendly Isles; Fiji Isles.

Waigeu, Camp Nok, 2500 ft. One winged female taken by Miss L. E. Cheesman, May, 1938.

50. *Camponotus (Colobopsis) vitreus* Smith, ♂, Journ. Proc. Linn. Soc. Lond. Zool. 1860, iv. Supplement 95 [sub. *Formica*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 459.

*Type-locality*.—Bachian.

*Known distribution*: Indo-china; Malasia to New Guinea.

Waigeu, Camp Nok, 2500 ft. One worker taken by Miss L. E. Cheesman, April, 1938.

51. *Calomyrmex lævissimus* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1859, iii. p. 138; 1863, vii. p. 13 [sub. *Formica*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 452.

*Type-locality*.—Aru.

“*Hab.* Waigiou; Aru; Bachian,” Smith, 1863.

*Known distribution*: New Guinea; Waigeu; Aru.

52. *Polyrhachis (Campomyrma) cheesmanæ*, sp. n.

♀. Black, palpi, spurs and claws pale brown, articulations and apical half of last joint of antennæ reddish. Clothed with a few scattered outstanding yellow hairs.

*Head* slightly longer than broad, slightly narrowed in front, broadest behind eyes, posterior angles rounded, posterior border truncate. The sculpture consists of a network of close, slightly raised ridges enclosing irregular shallow umbilicate pits, giving the head a rather rugous appearance; *mandibles* massive, triangular, finely longitudinally striate and with a number of larger and smaller shallow punctures, masticatory border armed with four large powerful teeth; *clypeus* carinate in centre, anterior border raised, roundly and deeply excised with projecting anterior angles, finely longitudinally striate and with much finer but somewhat similar sculpture to rest of head; *frontal area* triangular, smooth, ill-defined behind; *frontal furrow* narrow and shallow, extending between the frontal carinæ almost as far as their basal ends; *frontal carinæ* with sharp, high-raised rims, fairly wide apart, divergent in front and at base; *eyes* large, oval, convex, situated on top of sides of head towards posterior angles of the same; *ocelli* moderate, rather deeply embedded; *antennæ* inserted considerably behind base of clypeus, long, *scape* somewhat curved, thickened to apex, extending almost to base of mesonotum, *funiculus* pubescent, first joint longer than second, all joints longer than broad, last joint not as long as the two preceding taken together. *Thorax* ample, convex, narrowed in front and behind; *pronotum* transverse, narrow, finely transversely striate posteriorly, the rest sculptured in a similar way, but much finer, than head, anterior angles armed with two short, fairly sharp teeth, pointing

Proc. - G. P. (Evelyna) cheesmanae Don., 1937, Entomologist, London, 70: 273, figs. 1-3, female.

outwards and slightly upwards, posterior border rounded, embracing the mesonotum; *mesonotum* large, rounded and convex on disc, rather flat posteriorly, anterior border and sides rounded, sculpture similar but much finer than head, a smooth, longitudinal narrow space extends from anterior border towards disc; *præscutellum* very narrow in centre, widened and forming a round knob or projection at sides; *scutellum* oval, transverse, rather flat on disc, sculpture a little stronger than rest of thorax, the sides are hollowed out, very smooth and shining, and extend in a rimmed pointed projection between the insertion of the fore and hind wing; *metanotum* convex, narrow, transverse, finely coriaceous, lower than scutellum and epinotum; *epinotum* armed with two short, sharp spines, rather thick at base, pointing upwards, dorsal surface slightly convex and longer than declivity, which is slightly concave, finely transversely striate, and smooth and shining at extreme base; *node* of *petiole* rather high, thick, convex on anterior and posterior surfaces, armed with two fairly long pointed spines, pointing outwards and slightly backwards, upper surface between the spines slightly sinuate on each side, sculpture of anterior surface as in epinotum, that of posterior surface transversely striate; *gaster* short oval, broadest anteriorly, finely pubescent and coriaceous, first segment not longer than the second. *Wings* pale yellow, not infusate, *veins* and *pterostigma* yellow, venation as in *Camponotus*. The wings are much less voluminous and shorter than is usual with female *Polyrhachi*.

*Long.* 13 mm.

Type in B.M. (N.H.).

Described from a single winged female. Waigeu, Camp Nok, 2500 ft., taken by Miss L. E. Cheesman, May, 1938

I have much pleasure in naming this fine insect in honour of the gifted collector, who has added a number of species of ants and all other orders of insects to the fauna of these regions. The short first segment of the gaster and the, comparatively speaking, short and not ample wings present a connecting link between this species and the genus *Camponotus*. Emery, in the 'Genera Insectorum' (1925, clxxxiii. p. 176), writes on *Polyrhachis*:—"segment basal recouvrant généralement au moins la moitié du gastre; chez quelques espèces,

notamment du sous genre *Campomyrma*, ce segment n'est pas aussi étendu ce qui fait transition à la condition du genre *Camponotus*."

This is especially so in *P. (C.) cheesmanæ*, the first segment of the gaster being apparently shorter than in any other species in the subgenus.

53. *Polyrhachis (Florencea) kirkæ* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1937 (s. 10), xix. p. 624; Ent. Mo. Mag. 1940, lxxvi. p. 254, pl. v. fig. 3; Trans. R. Ent. Soc. Lond. 1941, xci. pt. 2, p. 61.

*Type-locality*.—Kokoda, Papua.

*Known distribution*: New Guinea, Japen and Waigeu Isls.

Waigeu, Camp Nok, 2500 ft. Several workers taken by Miss L. E. Cheesman in company with *Odontomachus tyranicus* Smith, var. *obsolescens* Donisthorpe, April, 1938.

54. *Polyrhachis (Polyrhachis) bihamata* Drury, ♀, Illustr. Nat. Hist. 1773, ii. p. 73, pl. 38, figs. 7 & 8 [sub. *Formica*]. Smith, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 13.

*Type-locality*.—Drury gives "Island of Johanna near Madagascar"; evidently in error.

"*Hab.* Waigiou; Celebes; Bachian; Ceram; Borneo; India," Smith, 1863.

*Known distribution*: Indo-china; Sonde Isles.

55. *Polyrhachis (Polyrhachis) bellicosa* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1859, iii. p. 142.

*Type-locality*.—Aru.

*Known distribution*: Malasia, Malacca, to New Guinea.

Waigeu, Camp Nok, 2500 ft. Four workers taken by Miss L. E. Cheesman, running about on felled trees with other ants, April, 1938.

56. *Polyrhachis (Hedomyrma) valerus* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1861, vi. p. 40; 1863, vii. p. 14 [sub. *Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 466.

*Type-locality*.—Celebes.

"*Hab.* Waigiou; Celebes," Smith, 1863.

57. *Polyrhachis (Myrmatopa) alpheus* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 14 [sub.

*Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 470.

*Type-locality*.—Waigeu.

58. *Polyrhachis (Hygiomyrma) metella* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1860, iv. p. 99, pl. i. figs. 20, 21 [sub. *Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 460.

*Type-locality*.—Dory.

*Known distribution*: New Guinea.

Waigeu, Camp Nok, 2500 ft. Eight workers taken by Miss L. E. Cheesman "from a nest in a clay bank with small round entrance," May, 1938.

59. *Polyrhachis (Hagiomyrma) xiphias* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 16 [sub. *Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 470.

*Type-locality*.—Waigeu.

60. *Polyrhachis (Charomyrma) auriformis*, sp. n.

♀. Black, shining, palpi and spurs yellow, extreme tip of antennæ reddish; clothed with long yellow outstanding hairs.

*Head* triangular, narrower in front than behind, narrowed in front of eyes to apex and behind eyes to posterior angles, which are bluntly rounded, posterior border narrowly margined, slightly projecting in middle, sinuate on each side. Longitudinally striate, much finer on the clypeus and becoming obliterated on the lobes of the frontal carinæ, the striæ interspersed with small, scattered, shining spots; *mandibles* massive, triangular, finely longitudinal striate and punctate, masticatory border armed with five strong blunt teeth; *clypeus* transverse, convex, carinate in centre, anterior border raised, margined and excavate in centre; *frontal area* transverse, narrow, pointed in front and behind, almost smooth, extending a little between the frontal carinæ; *frontal carinæ* wide apart, the lobes raised, somewhat ear-shaped, with sharp, narrowly-margined edges; *eyes* large, convex, round, very prominent, being situated on raised projections at sides of posterior part of head; *antennæ* long, *scape* shining, extending beyond posterior border of head, flattened and widened at base, forming a blunt triangular lobe, *funiculus* pubescent, all the joints longer than

broad, last joint pointed, about as long as the two preceding taken together. *Thorax* convex on disc, strongly margined; *pronotum* transverse, with sharp edges, anterior border slightly excavate in centre, anterior angles sharply pointed but not projecting forward, side-borders hollowed out smooth, with sharp raised rims, posterior border sinuate on each side, posterior angles rounded, the striæ consists of raised curved lines, the convex part of curve being uppermost, the curves becoming closer and forming a small circle at base, the striæ are interspersed with small raised shining points; *pro-mesonotal suture* narrow but deep; *mesonotum* transverse, considerably shorter than pronotum, with similar striæ and side-margins, the hollow rims being somewhat flatter; *meso-epinotal suture* not present, except at sides, where the thorax is rather deeply excised, forming rounded posterior angles to the mesonotum; *epinotum* with striæ on dorsal surface becoming transverse at base, armed with two moderately long pointed spines, extending backwards, the basal portion being slightly hollowed out wide and studded with raised round points, smooth and shining between, anterior angles rounded, *declivity* abrupt, transversely striate; *petiole* with lower surface widely transversely striate, armed with a strong curved sharp spine on each side pointing backwards; *gaster* round, with similar but finer striæ and raised points, as in thorax. The striæ are curved at base and become longitudinal towards the apex of first segment; second and third segments more finely longitudinally striate. *Legs* with *femora* finely transversely striate, *tibiæ* more finely obliquely striate.

*Long.* 8 mm.

Described from a single worker taken by Miss L. E. Cheesman, Waigeu, Camp Nok, 2500 ft., April, 1938.

Type in B.M. (N. H.).

This species comes in the *hostilis* Smith group; it differs from the latter in the structure of the scape, which is much shorter, the pronotal angles not being armed with projecting teeth; the frontal carinæ are much wider apart and shorter; the eyes much more projecting; the striation stronger and differently formed; the spines of the petiole a little shorter and more abruptly curved, etc. It does not agree with any species in Viehmeyers' table of this group, and is a very distinct insect,

61. *Polyrhachis (Chariomyrma) nitens*, sp. n.

♂. Black, shining, extreme tip of antennæ, palpi and spurs yellow; clothed with long outstanding yellow hairs and some sparse, short, decumbent yellow ones on thorax. Sculpture of whole body finely coriaceous.

*Head* triangular, narrowed from eyes to apex, posterior angles rounded, posterior border with a narrow margin raised and projecting in centre, sinuate on each side; *mandibles* triangular, finely striate and punctate, masticatory border armed with five teeth, the three apical ones being sharply pointed; *clypeus* transverse, carinate, anterior border slightly excised in middle, very finely striate; *frontal area* not defined; *frontal carinæ* not very wide apart, with sharp raised rims, the space beneath for reception of base of antennæ very smooth and shining; *eyes* convex, round, fairly prominent; *antennæ* long; *scape* long, extending considerably beyond posterior border of head, base widened and flattened, extending behind in a triangular pointed lobe, finely transversely striate; joints of *funiculus* longer than broad, pubescent. The striation of the head consists of thin raised longitudinal lines, the spaces between being smooth and shining, some scattered small shining raised points occur with the striæ. *Thorax* convex on disc strongly margined; *pronotum* transverse, with sharp raised side-borders, sides somewhat hollowed out, smooth and shining, anterior angles armed with sharp projecting teeth, the raised rims do not reach centre of anterior border, posterior border narrowly margined, posterior angles rounded; striation similar to that of head, but transverse anteriorly, becoming circular on disc; *suture* between pro- and mesonotum narrow but deep, deeply excised at sides; *mesonotum* transverse, sides rounded, with sharp rims, hollowed out smooth and shining within, similar longitudinal striæ and raised points to that of pronotum on disc; no division between mesonotum and epinotum except at sides, where it is somewhat deeply excised; *epinotum* with a small round lobe behind excision, and continuing in fairly long sharply-pointed spines, almost straight and slightly divergent at apex, the base smooth and shining, with a few inset small round raised points and very narrow raised margins on outer sides, *dorsal surface* with similar but finer striæ than mesonotum, transversely striate at extreme base, *declivity* abrupt,



shorter than dorsal surface, finely transversely striate, the striæ being slightly curved, with the concave part uppermost; *petiole* armed with two long curved sharp spines; *gaster* oval, rounded in front and narrowed behind, broadest at base, first segment closely longitudinally striate, interspersed with small round shining points, second segment with similar but finer sculpture, smooth and shining at base and apex. *Legs* with *femora* finely transversely striate.

*Long.* 7-8 mm.

♀. Similar in colour, sculpture, to ♂; *scape* and *frontal carinæ* the same; teeth of anterior angles of *pronotum* blunter; spines to *epinotum* and *petiole* shorter and stouter; *mesonotum* ample, convex; *scutellum* transverse, flat; *gaster* much as in ♂.

*Long.* 9 mm.

♂. Black, shining, claws, spurs, articulation of joints, extreme tip of antennæ, reddish yellow, palpi pale yellow, clothed with outstanding yellow hairs.

*Head* triangular, narrowed to apex, broadest across eyes, posterior angles and border rounded; *mandibles* narrow, shining masticatory border armed with two teeth; *clypeus* large, not very convex, carinate in middle, anterior border narrowly margined and raised, projecting in centre; *frontal area* ill-defined; *frontal carinæ* with narrow, slightly-raised sharp rims, slightly lobed in centre, and continued and becoming obliterated round hollow for reception of antennæ, a long and deep furrow occurs between cheeks and insertion of antennæ. *Thorax* narrowed in front and behind, broadest before insertion of wings; *pronotum* transverse, narrow, anterior border raised in a narrow rim, slightly excised in middle; *mesonotum* robust, convex, overlapping the pronotum, two narrow divergent impressed lines extend from anterior border to disc; *scutellum* transverse, very convex, raised higher than disc of mesonotum, which is rather flat at base; *metanotum* narrow, transverse, convex; *epinotum* very convex, rounded, no marked angle between dorsal surface and declivity, openings to epinotal spiracles very prominent, situated on each side before declivity; node of *petiole* hexagonal, very shining, anterior surface concave, upper surface rather flat, side angles bluntly rounded, posterior surface concave; *gaster* long oval, very shining, narrowed in front and behind, broadest before

middle; *cerci* conspicuous; *genitalia* moderate, *stipites* pointed. *Legs* long and slender. *Wings* pale brown, *pterostigma* and *veins* darker brown, one long *cubital* and long, closed *radial cell* present.

*Long.* 8 mm.

Described from ten workers, one dealated female, and three males, Waigeu, Camp Nok, 2500 ft., taken by Miss L. E. Cheesman from a nest behind loose bark. Larvæ and eggs in loose frass at the lower end, April, 1938.

Type, and male and female types in Brit. Mus. (N.H.).

*P. (C.) nitens* comes near to *hostilis* Smith, but differs in being considerably more shining, the decumbent hairs on thorax almost wanting, the striation much more distinct, the teeth to the mandibles sharper, and the triangular lobe to the scape of antennæ stronger and much more pointed.

62. *Polyrhachis (Chariomyrma) marginata* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1859, iii. p. 139; 1863, vii. p. 13 [sub. *Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 453.

*Type-locality.*—Aru.

“*Hab.* Waigiou; Bachian; Philippines; India,” Smith, 1863.

*Known distribution:* Aru; Moloques.

63. *Polyrhachis (Myrmhopla) sexspinosa* Latreille, ♀, Hist. Nat. Fourmis, 1802, p. 126, pl. iv. fig. 21 [sub. *Formica*]. Smith, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 13 [sub. *Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1941 (s. 11), vii. p. 141, fig. 2.

*Type-locality.*—“Indes orientales.”

“*Hab.* Waigiou; Aru; Philippines; India; Mysol,” Smith, 1863.

*Known distribution:* Papua; Malasia; Philippines.

Waigeu, Camp Nok, 2500 ft. Three workers taken by Miss L. E. Cheesman from “nest behind carton sheets on tree-trunk” (Tube 1); and two winged females and eighteen workers from “nest with carton screen,” March, May, 1938.

64. *Polyrhachis (Myrmhopla) bubastes* Smith, ♀♀, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 15 [sub.

*Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 470.

*Type-locality*.—Waigeu.

*Known distribution*: Moluccas.

65. *Polyrhachis (Myrmhopla) nigriceps* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 17 [sub. *Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 470.

*Type-locality*.—Waigeu.

*Known distribution*: Waigeu; New Guinea.

66. *Polyrhachis (Myrmhopla) mucronata* Smith, subsp. *japensis* Donisthorpe, ♀, Proc. R. Ent. Soc. Lond. xci. pl. ii. p. 63 (1941).

*Type-locality*.—Japen Island.

Waigeu, Camp Nok, 2500 ft. One winged female and fourteen workers taken by Miss L. E. Cheesman "on a trail" and "in leaf bases of *Pandanus* sp." Female, April, 1938, workers, July, 1938.

♀ (undescribed). Similar to ♀ in colour, sculpture, etc., except that the gaster has a distinct metallic violet reflection. The *pronotal spines* are somewhat stouter, and the *spines* to the epinotum and petiole stouter and slightly shorter; *ocelli* small; *scutellum* transverse, convex, prominent. *Wings* light brown, *pterostigma* and *veins* darker, one long *cubital cell* and *radial cell* present.

*Long.* 7.3 mm.

Female type in B.M. (N.H.).

67. *Polyrhachis (Myrmhopla) arcuspinosa* Donisthorpe, subsp. *waigeuensis*, subsp. n.

♀. This insect differs from the typical form in colour, there is no red on the body, the mandibles and antennæ are black, as are the tarsi and posterior tibiæ. The rest of the legs is darker; the decumbent hairs forming a putern on the gaster are slightly longer and more abundant. It is also slightly larger. The only structural difference seems to be that the pronotal spines are slightly more curved inwards.

*Long.* 14 mm.

Type in B.M. Coll.

Described from four workers, Waigeu, Camp Nok, 2500 ft., taken by Miss L. E. Cheesman, April, 1938, in dead leaves (Tube 17).

68. *Polyrhachis (Myrmhopla) rugosissima*, sp. n.

♂. Black, palpi, extreme tip of antennæ, spurs, claws, tarsi, articulations of antennæ, and extreme base of scape yellowish red, femora and tibiæ reddish brown. Head, thorax and petiole shining. Whole body, legs and scape clothed with rather short, not very close outstanding yellow hairs, and grey short decumbent ones; the latter closer and more abundant on anterior coxæ, shorter and finer and forming a pattern on gaster, but much less marked than in *arcuspinosa* Donisthorpe.

*Head* long, narrow, longer than broad, narrowed in front and behind, broadest at insertion of eyes, cheeks slightly rounded, sides rounded behind eyes to posterior angles, which are sharp and projecting, posterior border very narrowly margined, slightly excised in middle and sinuate on each side before posterior angles; *mandibles* large, powerful, triangular, smooth and shining, with larger and smaller shallow scattered punctures towards apex, masticatory border armed with five strong teeth, the apical one and the two preceding longer and sharper, the two basal ones, shorter and blunter; *clypeus* large, transverse, triangular, convex on disc, carinate in centre, anterior border rounded, very finely coriaceous; *frontal area* smooth and shining, triangular, ill-defined posteriorly; *frontal carinæ* long, narrow, with sharp raised rims, diverging to base, a long, narrow, raised ridge, and some oblique raised ridges diverging from it, occur between the frontal carinæ; *cheeks* smooth in centre, with coarse longitudinal striæ on each side; *front* and posterior part of head extremely coarsely sculptured, the sculpture consisting of strongly raised ridges, which inclose in a network irregular smooth, shining hollows; *antennæ* long, *scape* extending beyond posterior border of head as far as meso-epinotal furrow, *funiculus* pubescent, all joints longer than broad, first joint longer than any of the others, last joint not as long as the two preceding taken together; *eyes* large, slightly oblong, convex, very projecting. *Thorax* longer than broad, narrowed to base, sculpture of pro- and mesonotum similar to that of head but not so strong; *pronotum* transverse, very convex and prominent on disc, anterior angles armed with a strong, rather short, considerably curved spine pointing inwards and slightly downwards, shining, with a few larger shallow punctures, and a number of very fine small ones before

apex; *pro-mesonotal suture* very narrow, but distinct; *mesonotum* longer than broad, fairly convex but considerably lower than pronotum; sculpture of *epinotum* finer than that of mesonotum, *dorsal surface* rather flat, *declivity* abrupt, longer than dorsal surface; armed with two strong, outstanding, slightly divergent, sharply-pointed spines; *petiole* furnished with a high, rather thick *node*, armed posteriorly with two sharply-pointed curved spines, divergent and pointing downwards. Sculpture of upper surface similar to that of mesonotum, broadest at apex, upper surface convex, rounded above, and sloping to base, posterior surface flat, with finer sculpture than upper surface, lower surface furnished with a narrow ridge, smooth and shiny at sides, terminating anteriorly in a bluntly rounded tooth; *gaster* small, oblong, convex, rounded in front and pointed behind.

*Long.* 11–12.5 mm.

Described from 18 workers, Waigeu, Camp Nok, 2500 ft., taken by Miss L. E. Cheesman from a carton nest just started in a folded leaf, and running about on felled trees, March and April, 1938.

Type in B.M. (N.H.).

This species comes in the *sexspinosa* Latr. group. The sculpture is much coarser and the pronotal spines are much more curved than in any of the others.

69. *Polyrhachis (Myrma) proxima* Roger, var. *semirufipes*, var. n.

♀. Differs from the typical form in that the legs are red, with the exception of the tarsi and base of the femora, which are black.

Waigeu, Camp Nok, 2500 ft., one worker taken by Miss L. E. Cheesman, April, 1938.

Type in B.M. (N.H.).

70. *Polyrhachis (Myrma) illaudata*, ♀, Walker, Ann. & Mag. Nat. Hist. 1859 (s. 3), iv. p. 373 [sub. *Polyrhachis*] = *Polyrhachis mayri* Roger, Verz. Formicid. 1863, p. 7. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), ix. p. 576.

*Type-locality*.—Ceylon.

*Known distribution*: Ceylon; S. India; Bengal; Indo-china; Sonde Isles.

Waigeu, Camp Nok, 2500 ft. One very large winged female (long. 13.5 mm.), taken by Miss L. E. Cheesman.

I can see no difference between this and the typical form, except in size.

71. *Polyrhachis (Myrma) taurus* Donisthorpe, ♀, Entomologist, 1937, lxx. p. 274, text-figs. 4 and 5; ♂, Ann. & Mag. Nat. Hist. 1943 (s. 11), x. p. 172.

*Type-locality*.—Cyclops Mountains, Dutch New Guinea.

The contents of another tube, numbered No. 20, have been found belonging to this species. The ants are labelled Camp Nok, 2500 ft., April, 1938, and consist of one deâlated female, eleven winged females, twelve males and twenty-two workers. These ants no doubt belong to the colony inhabiting the carton nest with six openings, constructed on the base of a leaf. The first tube, which was also labelled No. 20, contained twenty-nine workers, Mount Nok, 2500 ft., March, 1938. It was from the ants in this tube that I described the worker.

As I anticipated, the Waigeu females, measuring 9 mm., are larger than the typical one from the mainland of New Guinea.

♂ (undescribed). Black, epinotum, petiole and gaster brown, tarsi, tip of last joint of antennæ, mandibles, palpi and genitalia yellow. Very sparsely clothed, with yellow outstanding hairs.

*Head* triangular, narrowed in front, sides of head behind eyes rounded to posterior angles, which are bluntly rounded, posterior border almost straight; *mandibles* triangular, smooth and shining, clothed with scattered outstanding yellow hairs, feebly toothed at apex, slightly overlapping when closed, masticatory border unarmed; *clypeus* large, transverse, convex, anterior border rounded, slightly sinuate at sides; *frontal area* small, triangular, transverse; *frontal carinæ* raised, with sharp edges, slightly divergent behind the raised lobes, a strong narrow carina, or raised ridge is present between the frontal carinæ; *eyes* large oval, very prominent, situated on sides towards back of head; *ocelli* fairly large, projecting, rather wide apart, situated on vertex of head; *antennæ* long, *scape* extending beyond posterior border of head nearly to the middle of mesonotum, *funiculus* with first joint a little longer than broad, widened towards apex, broader and shorter than the rest of the joints, which are elongate, last joint not as long as the two preceding taken together. The whole

head is very finely punctured, some very small scattered punctures being present on the clypeus. *Thorax* longer than broad, narrowed in front and behind, broadest before insertion of the wings, the sculpture of the thorax is very finely coriaceous, with small, shallow scattered punctures; *pronotum* narrow, transverse, forming a neck; *mesonotum* overlapping the pronotum, ample, convex on disc, rather flattened towards base, rounded at sides and in front, a shallow narrow longitudinal furrow, widened behind, extends from anterior border towards disc; *mayrian furrows* absent, *parapsidal furrows* very narrow but well marked; *suture* before præscutellum narrow but deep; *præscutellum* extremely narrow in middle; *scutellum* prominent, convex, narrowed to base, a very smooth and shining hollow occurs on each side of scutellum, *sutures* between scutellum and metanotum and metanotum and epinotum narrow but deep; *metanotum* transverse, narrow, slightly raised; *epinotum* convex, longer than broad, narrowed to base, no angle between dorsal surface and declivity, epinotal *spiracles* prominent, with raised sides; *node* of *petiole* low, small, narrow, rounded at sides and above, anterior surface flat, posterior surface longer than anterior surface, convex, slightly narrowed to apex; *gaster* long oval, broadest in front, narrowed to apex, very finely coriaceous, shining; *cerci* and *genitalia* fairly prominent, *stipites* narrowly pointed. *Legs* long and slender. *Wings* as in ♀, but much less ample in proportion.

Long. 7 mm.

♂ type in B.M. (N.H.).

72. *Polyrhachis (Myrma) reluscens* Latrelle, subsp. *ithonius* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1861, v. Supplement 99; 1863, vii. p. 13 [sub. *Polyrhachis ithonius*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 460.

*Type-locality*.—Bachian.

“*Hab.* Waigiou; Bachian; Mysoll,” Smith, 1863.

*Known distribution*: Moluccas.

73. *Polyrhachis (Myrma) rufofemoratus* Smith, ♂, Journ. Proc. Linn. Soc. Lond. Zool. 1859, iii. p. 142; 1863, vii. p. 13 [sub. *Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 454.

*Type-locality*.—Aru.

"*Hab. Ceram ; Aru ; Waigiou*," Smith, 1863.

*Known distribution* : Moluccus ; New Guinea.

74. *Polyrhachis (Myrma) derecynus* Smith, ♂, Journ. Proc. Linn. Soc. Lond. Zool. 1873, xi. p. 316 ; *dolomedes* Smith, 1863, vii. p. 16 (*nec* p. 14) [sub. *Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x.

*Type-locality*.—Waigeu.

75. *Polyrhachis (Myrma) sericata* Guér., ♀, Voyage Coquille, Zool. 1830, ii. p. 203 ; Atlas Ins. pl. viii. figs. 2, 2 a, b, c, d [sub. *Formica*]. Smith, Journ. Proc. Linn. Soc. Lond. Zool. 1863, vii. p. 14 ; Cat. Hym. Ins. Brit. Mus. 1898, vi. p. 36 [sub. *Formica*].

*Type-locality*.—Offack.

"*Hab. New Hebrides*," Smith 1858. "*Hab. Martabellow ; Waigeu ; Aru ; New Hebrides ; Mysoll*," Smith, 1863.

*Known distribution* : New Guinea ; Moluccas ; New Hebrides.

76. *Polyrhachis (Myrma) sericata* Guér., var. *nitidiventris* Stitz, ♀, Sitz. Gesells. Natur. Freunde, Berlin, 1911, p. 375. Donisthorpe, Ann. & Mag. Nat. Hist. 1943 (s. 11), x. p. 173.

*Type-locality*.—New Guinea.

Waigeu, Camp Nok, 2500 ft. Many workers, nineteen winged females, three males taken by Miss L. E. Cheesman from a "nest in log," March, April, May, 1938.

77. *Polyrhachis (Cyrtomyrma) rastellata* Latreille, subsp. *baduri* Donisthorpe, ♂, Trans. R. Ent. Soc. Lond. 1941, xci. pt. 2, p. 63. *Polyrhachis busiris* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1860, iv. Supplement 98, pl. i. fig. 15 ; 1863, vii. p. 13 [in part].

*Type-locality*.—Japen Island.

Waigeu, Camp Nok, 2500 ft. Twelve workers "taken on a trail" by Miss L. E. Cheesman, May, 1938.

Smith's type of *busiris* is from Dory. It has the shoulders distinctly angled and comes in my group—"Shoulders toothed or angled. Epinotum unarmed" (1938). Smith (1860) described the species from Dory and Bachian, and the teeth of the petiole agree with his figure in the Dory insect. Subsequently (1863) he gives



the distribution as "*Hab.* Ceram ; Boru ; Waigiou ; Celebes ; Bachian." I have seen the specimens from all these localities, and with the exception of the one from Dory, which I consider to be the type and should stand as a good species, they are all forms of *rastellata* Latr. The specimens from Waigeu agree with those taken by Miss Cheesman, with the exception that the legs show a tendency to being blood red, instead of black.

78. *Echinopla serrata* Smith, ♀, Journ. Proc. Linn. Soc. Lond. Zool. 1859, iii. p. 140 ; 1863, vii. p. 14 [sub. *Polyrhachis*]. Donisthorpe, Ann. & Mag. Nat. Hist. 1932 (s. 10), x. p. 453.

*Type-locality*.—Aru.

"*Hab.* Waigiou ; Aru." Smith, 1863.

79. *Echinopla crenulata* Donisthorpe, ♀, Entomologist, 1941, lxxiv. p. 115.

*Type-locality*.—Waigeu.

80. *Pseudolasius breviceps* Emery, ♀♀♂, Ann. Mus. Stor. Nat. Genova, 1886, xxiv. p. 246. Donisthorpe, Trans. R. Ent. Soc. Lond. 1942, B, ii. pl. 2, p. 168.

*Type-locality*.—Amboiana.

*Known distribution* : Amboina ; New Guinea.

Waigeu, Camp Nok, 2500 ft. Two winged females, one worker (Camp 2). Mossy Forest, one male taken by Miss L. E. Cheesman, May, 1938.

81. *Pseudolasius karawajew* Donisthorpe, ♀♂, Trans. R. Ent. Soc. Lond. 1942, B, xi. p. 16.

*Type-locality*.—Waigeu.

82. *Pseudolasius waigeuensis*, sp. n.

♀. Pale yellow, teeth to mandibles brown, clothed with fine yellow outstanding hairs and silky yellow pubescence ; somewhat shining.

*Head* variable, longer than broad to almost square, sides straight, posterior angles rounded, posterior border widely but not deeply excised ; *mandibles* rather long, shining, with fine shallow scattered punctures, outer border rounded, masticatory border armed with six sharp teeth, the 4th from the base being much smaller and shorter than the rest ; *maxillary palpi* 1-jointed,

*labial palpi* 2-jointed \*; *clypeus* transverse, very convex on disc, anterior border rounded in centre and sinuate on each side; *frontal area* not well defined; *frontal carinæ* short, sinuate behind lobes, with a fine raised ridge between, not extending as far as the middle of head; *clypeal foveæ* small, round, shallow, not confluent with *antennal foveæ*; *antennæ* 12-jointed, *scape* not reaching posterior border of head, *funiculus* thickened to apex, first joint longer than the two following taken together, joints 3 to 6 transverse, last joint equal to the two preceding taken together; *eyes* very small and indistinct, situated on the dorsal surface in front of the middle of the head, consisting of one to two ommatidia. *Thorax* slightly longer, or about as long as head, stout; *pronotum* convex, rounded in front and at sides; *mesonotum* round, not very convex; *metanotum* well defined, with two spiracles on disc; *epinotum* with rounded convex dorsal surface, angle between declivity and dorsal surface not marked, declivity somewhat flat, with two spiracles situated anteriorly; *scale of petiole* narrow, somewhat bent forward, sides rounded, upper surface thin and slightly excised; *gaster* oval, rounded in front, narrowed behind. *Legs* rather stout, moderately long.

*Long.* .1·8–2·5 mm.

Type in B.M. (N.H.).

Described from 16 workers taken by Miss L. E. Cheesman, Waigeu, Camp Nok, April and May, 1938. A number of the workers was in the same tube as the *Pheidole* (*Pheidole*) *semiclavata*, sp. n.; and several were taken "in a crevice between rocks of shale on top of ridge."

83. *Nylanderia lecanopteridis* Donisthorpe, ♀, Ann. & Mag. Nat. Hist. 1941 (s. 11), vii. p. 142.

*Type-locality.*—Waigeu.

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\* This is quite certain as shown by the admirable preparations kindly made for me by Mr. Nixon. I have already demonstrated (1942) that the maxillary palpi are 3-jointed and the labial palpi 4-jointed in the larger species. It would now seem probable that they are 1-jointed and 2-jointed respectively in the smaller species.

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