

*The Subgenus Cyrtomyrma Forel of Polyrhachis Smith,
with Descriptions of new Species, etc.* By HORACE
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THE subgenus *Cyrtomyrma* was founded by Forel in 1915,
with *Polyrhachis rastellata* Latreille as sub-genotype.
The head is rounded at the sides and generally broader
than the thorax. The thorax is usually broadest in front,
narrowed to base, and without a trace of side margins.

The anterior angles of the pronotum are either more or less toothed or spined, or more or less rounded. The epinotum is short and without a distinct declivity; it is either armed with two longer or shorter teeth, or entirely unarmed. The scale of the petiole is furnished with four short spines. The colour of the body is usually black and shining; and the legs either black or partly red. All the species are finely reticulated, with small scattered punctures. As Emery points out, the species have a strong superficial resemblance to *Acanthomyops* (*Dendrolasius*) *fuliginosus* Latr., of Europe.

Distribution.—Central Hindostan, Ceylon, Indo-China, Malaysia, Papuosa, and Australia.

Considerable confusion has arisen in the so-called group *rastellata*, chiefly caused by the meagre description of Smith's *lævissima*, 1859 (nec *lævissima* Smith, 1858) = *levior* Roger. Smith never mentioned in his description whether the shoulders were rounded or toothed, and it was unfortunately concluded that they were rounded. Thus both Santschi and Viehmeyer placed *levior* in the wrong sections in their tables on this group. Forel also in his table in "Les Formicides de l'Empire des Indes et de Ceylan," Journ. Bombay Nat. Hist. Soc. viii. p. 21 (1893), places *levior* in the section with rounded shoulders.

Professor D. Hale Carpenter of the Hope Department, Oxford University Museum, has kindly lent me Smith's type, and I have redescribed the species. Miss Tassart has kindly figured it (and other species) for me.

Other mistakes have also crept in:—*P. lævissima* Smith, 1858, is said to be absolutely without puncturation, whereas it is reticulated and punctured in the same manner as all the other species of the subgenus. *P. rastellata* Latr. is said to be entirely black, whereas the legs are red as originally described by Latreille. As Emery points out, some of the so-called subspecies and varieties in this group have been mistaken for the typical form and have been recorded as such, thus confusing the distribution. Some of the forms have been treated as varieties of *levior*, and that species itself as a subspecies of *rastellata*; whereas the latter has the shoulders rounded and the epinotum entirely unarmed. I have treated all the so-called subspecies as species; and though this is not of much importance, it certainly simplifies matters.

I have not dealt with the males in this paper as there are no good characters to separate those of *Polyrhachis* from *Camponotus*. In the former genus the thorax and petiole are never armed with spines or teeth.

I have divided them into two groups : (1) those with the shoulders toothed and the epinotum armed or unarmed and (2) those with the shoulders rounded and the epinotum armed or unarmed.

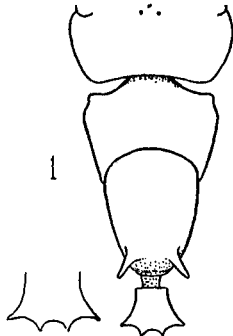
Group 1. Shoulders toothed or angled.

a. Epinotum armed.

1. *Polyrhachis (Cyrtomyrma) levior* Roger, Verz. Formicil. no. 232, p. 8 (1863) in Berlin Ent. Zeits. vii. Supplement, p. 8 (1863). (Fig. 1.)

Polyrhachis lævissima Smith, Journ. Proc. Linn. Soc. Lond., Zool. iii. p. 141 (1859) (nec *lævissima* Smith, 1858).

♀. Black, shining, greater part of legs, claws, and maxillary palpi red ; antennæ, coxæ, knees, and tarsi



Polyrhachis (Cyrtomyrma) levior Roger. Worker.
Part of head, thorax, scale, and scale enlarged.

black. The whole body is finely but distinctly reticulated, and with very small fine scattered punctures.

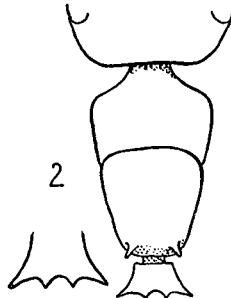
Head transverse posteriorly, sides rounded from behind eyes to posterior angles, which are distinct, emarginate posteriorly, narrowed anteriorly ; *mandibles* very finely striate and punctate, armed with four sharp teeth ; *clypeus* large, convex, with two short acute teeth on anterior border ; *frontal area* indistinct ; *frontal furrow* distinct, extending between the frontal carinæ for about 2/3 of their length ; *frontal carinæ* with sharp

edges, emarginate in front, almost parallel behind, space between concave; three small but distinct *ocelli* present; *eyes* moderately prominent. *Thorax* with very distinct bluntly toothed anterior angles to the *pronotum*, slightly and shortly emarginate behind the tooth; *epinotum* armed with two strong fairly long pointed spines, projecting outwards and very slightly downwards; *petiole** armed with four acute teeth, the outer pair being the longer, the inner pair bending slightly backwards.

Long. 5.8 mm.

Locality.—Aru (*A. R. Wallace*).

Type in Hope Department, Oxford University Museum.



Polyrhachis (Cyratomyrma) nox, sp. n. Worker.
Part of head, thorax, scale, and scale enlarged.

2. *Polyrhachis (Cyratomyrma) nox*, sp. n. (Fig. 2.)

♂. Black with legs mostly dark brown, almost black in some specimens; antennæ and tarsi black, palpi brown, claws and trochanters reddish. This species comes near to *levior*, but the head is not so broad, more rounded, especially posterior angles, less emarginate posteriorly, the ocelli are less distinct; the shoulders are blunter, the dorsal surface of the thorax is more convex, the epinotal spines are not so long, and the outer teeth on the petiole are longer and sharper.

Long. 5.8 mm.

Locality.—Mackay, Queensland, Australia (*R. E. Turner*).

Described from six workers in Brit. Mus. Coll.

Type in Brit. Mus. Coll.

* Santschi's figure of the scale of *levior* is not accurate; but, of course, he had never seen the type [*Le Naturaliste*, xxiv. (s.2) p. 284 (1910)].

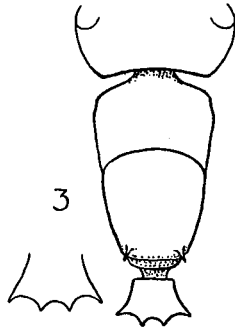
3. *Polyrhachis (Cyrtomyrma) albertisi* Emery, Ann. Mus. Stor. Nat. Genova, xxiv. p. 240 (1887).

“♂. Nigra, nitida, subtilissime reticulata, oblonge sparse punctata, pube microscopica fere nulla, supra parce pilosa. Caput latum. Thorax dorso valde convexo, pronoti angulis anticis dente valido, apice haud acuto armatis, metanoto denticulo utrinque minuto. Squama acute quadridentata. L. $6\frac{1}{2}$ –7 mm.

“♀. Operariæ similis, et fortius sculpta, thoracis angulis anticis obtusis, haud dentatis, dentibus metanoti majoribus, squamæ minus acutis. L. 9 mm. Alæ colore solito tinctæ.”

Locality.—Sorong, New Guinea (*L. M. D'Albertis*).

Emery states this species differs from the rest of the *rastellata* group by the condition of the points of the shoulders and scale* (*rastellata* has the shoulders and epinotum unarmed); but he did not compare it with *levior*, as he was unaware that that species has distinctly dentate shoulders. *P. (C.) albertisi* is evidently a rather large species, with all black legs, and less prominent shoulders than *levior*.



Polyrhachis (Cyrtomyrma) mondoi, sp. n. Worker.
Part of head, thorax, scale, and scale enlarged.

4. *Polyrhachis (Cyrtomyrma) mondoi*, sp. n. (Fig. 3.)

♂. Black, shining, the trochanters, femora, and tibiæ dark red, the antennæ (except the tip of the last joint, which is red) and tarsi black. The teeth of the mandibles, and claws red; the palpi brownish yellow. The sculptu-

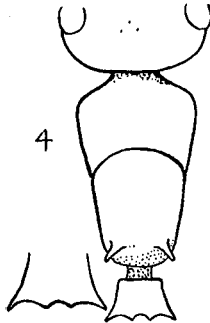
* I think Emery must have meant epinotum, as *rastellata* has four acute teeth on the scale of the petiole.

ration consists of the usual fine reticulation and small punctures, but the pleural region of the mesonotum and epinotum, and the sides of the petiole are somewhat rugose in appearance, caused by the presence of long shallow punctures.

The head is less broad posteriorly than in *levior* and *nox*, and the posterior angles are less distinct than in the former and more so than in the latter. The shoulders are less marked than in the other two; the spines of the epinotum are of about the same length as in *nox*, but finer and sharper, and point slightly outwards. The teeth of the petiole are about the same length as in *levior*, but somewhat more acute.

Long. 5.5 mm.

Locality.—Mondo, Papua, 5000 ft. (*Miss L. E. Cheesman*).
Type in Brit. Mus. Coll.



Polyrhachis (Cyrtomyrma) townsvillei, sp. n. Worker.
Part of head, thorax, scale, and scale enlarged.

5. *Polyrhachis (Cyrtomyrma) townsvillei*, sp. n. (Fig. 4.)

♀. Black, shining palpi, insertion of antennæ, part of coxæ, trochanters, femora, and tibiæ yellowish red; tarsi, antennæ, and mandibles dark red; teeth and knees infusate; base of gaster distinctly reddish. The usual reticulation, the small scattered punctures on gaster more distinct than in *levior*.

Head narrowed in front, rounded behind eyes; posterior angles and emargination of posterior border not so marked as in *levior* and *nox*; *clypeus* convex, notched and projecting anteriorly, the teeth at the corners not so acute as in *levior* or *nox*. Three very small, somewhat indistinct

ocelli present. *Thorax* rather more convex than in *levior* and *nox*; *pronotum* broadest a little behind anterior angles, which are distinctly angled, but not nearly so much as in *levior* and less so than in *nox*; *epinotum* armed with two teeth, considerably smaller than in *levior*, about the same length as in *nox*, but slightly thinner; *petiole* armed with four sharp teeth, those in the centre slightly nearer together and shorter than in *levior* and *nox*, the outer ones longer than in *levior* and shorter than in *nox*.

Long. 5.7 mm.

♀. Similar to the ♂, but the colour of the antennæ and legs is considerably darker, the shoulders are quite rounded, and the teeth on the epinotum and scale are longer and thicker. *Wings* yellowish, pterostigma and veins darker.

Long. 7.2 mm.

Locality.—Townsville, Queensland (*Dod*); ex coll. Donisthorpe.

Type in Brit. Mus Coll.

b. *Epinotum* unarmed.

6. *Polyrhachis* (*Cyrtomyrma*) *lævissima* Smith, Cat. Hym. Brit. Mus. vi. p. 64, pl. iv. fig. 42 (1858). (Fig. 5.)

♂. Black, shining; teeth of mandibles, palpi, coxæ, trochanters, femora, tibiæ, claws, and projecting portion of petiole beneath red; antennæ and tarsi black, knees infusate. Whole body very finely reticulate and with very small scattered punctures (less distinct than in *levior*); the pleural area and sides of petiole finely striate.

Head transverse posteriorly, sides behind eyes rounded, but not quite so abruptly as in *levior*, posterior angles distinct, posterior border emarginate, narrowed anteriorly; *mandibles* with larger and smaller punctures and conspicuous short decumbent bristles, armed with four sharp teeth; *clypeus* large, convex, projecting anteriorly with four sharp teeth, emarginate between; *frontal area* indistinct; *frontal furrow* distinct, reaching back as far as the base of frontal carinæ; *frontal carinæ* with sharp edges emarginate in middle, slightly narrowed at base; no trace of *ocelli*; *eyes* slightly less prominent than in *levior*. *Thorax* with anterior angles of the *pronotum* acutely toothed, not emarginate beneath tooth, dorsal surface convex; *epinotum* without a trace of spines;

petiole simply notched in middle, with pointed angles at the sides (these side teeth are greatly exaggerated in Smith's figure).

Long. 5.3 mm.

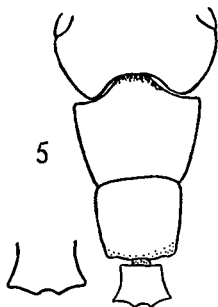
Locality.—Burma.

Type in Brit. Mus. Coll.

♀. Very like the ♂ in colour etc.; the sculpturation, however, is stronger and the shoulders are quite rounded.

Long. 8–10 mm.

Bingham records the species from Bengal, Orissa, Assam, Burma, Tenasserim, Siam, and down to Java.



Polyrhachis (Cyrtomyrma) lævissima Smith. Worker.
Part of head, thorax, scale, and scale enlarged.

The *P. globularia* Mayr [Tijds. v. Ent. x. p. 41 (1867)], which is recorded from Java, is said to be a synonym of *lævissima*.

Bingham's figure of the scale is good, but not of the shoulders.

Polyrhachis (Cyrtomyrma) lævissima Smith var. *dichroa*
Forel, Journ. Bombay Nat. Hist. Soc. viii. pp. 21,
30 (1893).

♂. Gaster and legs reddish yellow; antennæ and the front of the head reddish.

Locality.—Assam (*Wood-Mason*).

Polyrhachis (Cyrtomyrma) lævissima Smith var. *aruensis*
Viehmeier, Abh. Zool. Anthropol. Mus. Dresden, xvi.
No. 1, p. 9 (1912).

♂. "Unterscheidet sich von dem Typus vor allem durch die scharf zugespitzten und langgezogenen Zähne der Schuppe

(ähnlich wie bei *rastellata*). Beine mehr oder weniger pechbraun, abschüssige Fläche des Epinotums ungefähr in der Höhe der Metathoraxstigmien jederseits mit einem sehr kleinen, stumpfen, buckelförmigen Zahnrudiment. Thorakalseiten kräftiger und rauher skulptiert und darum matter. Die zahnförmigen Vorderecken des Pronotums ebenso wie die Zahnrudimente des Epinotums in ihrer Grösse variabel. L. 5-6 mm."

Locality.—Aru (*C. Ribbe*).

Viehmeyer records it as in numbers in his collection. I very much doubt if this insect should be considered to be a variety of *lævissima*.

7. *Polyrhachis (Cyrtomyrma) vitalisi* Santschi, Bull. Soc. Vaud. Sci. Nat. lii. p. 567 (1920).

This species is related to *lævissima*, but is larger and entirely dull. The legs are black except the borders of the trochanters, which are reddish.

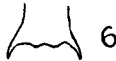
Long. 6.5-7 mm.

Santschi gives a long and careful description of all three castes.

Locality.—Laos (*Vitalis de Salvaza*).

8. *Polyrhachis (Cyrtomyrma) gibba* Emery, Zool. Jahrb. xiv. p. 580, Tf. a, b (1901). (Fig. 6.)

♀. This insect has a bluish reflection, the head and thorax are very slightly shining, and the legs are black. The anterior angles of the pronotum are armed with small



Polyrhachis (Cyrtomyrma) gibba Emery.

Scale after Emery.

somewhat outreaching teeth. The side teeth of the petiole are longer than in *lævissima*.

Long. 5.5 mm.

Locality.—Celebes (*Fruhstorfer*).

Group 2. Shoulders rounded.

a. Epinotum unarmed.

9. *Polyrhachis (Cyrtomyrma) rastellata* Latreille, Fourmis, p. 130 (1802). (Fig. 7.)

"La Fourmi A Rateau. *Formica rastellata*.

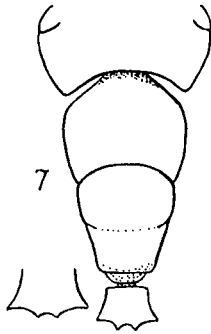
" *Femelle.*

" Noir, lisse et luisante ; corcelet rond ; écaille quadridentée.

" Nigra, lævis, nitida ; thorace rotundo ; squama quadridentata.

" Long. 0^m.005-2 lig. $\frac{1}{3}$.

" Elle a presque le facies de la fourmi portepique. Le corps est d'un noir très-lisse, glabre et luisant. La tête a les trois petits yeux lisses. Le corcelet est rond et convexe. L'écaille est triangulaire, avec quatre petites dents au sommet, dont les latérales plus basses. L'abdomen est ové-conique. Les pattes sont d'un rouge-brun, avec les tarse noirs. Les ailes manquent à l'individu que je décris et qui vient des Indes orientales, où il a été recueilli par Riche. Il fait partie de la collection de Bosc."



Polyrhachis (Cyrtomyrma) rastellata Latr. Worker.
Part of head, thorax, scale, and scale enlarged.

♀. Black, shining, with the usual reticulation and very small punctures ; insertion of the antennæ, trochanters, femora, tibiæ, and claws blood-red ; mandibles, antennæ, and tarsi black ; knees blackish.

Head broad, massive, broader than thorax, narrowed in front, rounded from eyes to posterior angles, which are distinct, posterior border emarginate ; *mandibles* armed with rather blunt teeth ; *clypeus* large, convex, anterior border projecting with a prominent tooth at each corner ; *frontal area* indistinct ; *frontal carinæ* raised with sharp edges, emarginate anteriorly and very slightly contracted posteriorly ; *frontal furrow* reaching

between the carinæ for two-thirds of their length; *eyes* large, very round and prominent. *Thorax* broad, massive, convex; *pro-mesonotal suture* deep and conspicuous; *meso-epinotal suture* faintly indicated; *scale* with four pointed teeth, the outer pair being the longer, the inner pair rather close together, nearer to each other than to the outer pair. The scale is slightly transversely striate on its anterior portion and the pleural region is slightly rugose, but this is more or less present in most of the species.

Long. 5.5 mm.

Described from an Indian specimen (*Wroughton*). Most of the examples in the Brit. Mus. Coll., are from Ceylon, the legs are lighter and the teeth of the scale sharper and might be called var. *ceylonensis* nov. var. Emery gives for the distribution—Ceylon, Kanara, Hindo-China, Hindo-Malasian Isles as far as New Guinea and Queensland; but, as he justly remarks, the distribution of the typical form is without doubt confined to a very small portion of these localities; and probably to the most oriental regions.

Polyrhachis (Cyrtomyrma) rastellata Latr. var. *celebensis* Viehm. Arch. f. Naturg. lxxix. p. 51 (1913).

♂. Front angles of the pronotum with the indication of a tooth.

Locality.—Celebes.

The above appears to be the whole of Viehmeyer's description! As he puts it in the section without toothed shoulders, and as he queries if the typical form has the thorax broadest in front, it would seem that this insect requires to be redescribed.

Polyrhachis (Cyrtomyrma) rastellata Latr. var. *pilosa* Forel, Rev. Suisse Zool. x. p. 527 (1902).

“♂. Métanotum sans trace d'épines. Très semblable à la var. *debilis* Emery, mais tout le corps assez abondamment pourvu de poils dressés fins. Ça et là même un poil sur les pattes.”

Locality.—New South Wales (*Froggatt*).

Forel gives this as a var. of *levior*, and he says the var. *debilis* Emery of *levior* is itself closely related to *rastellata*; *levior*, however, as we have seen, has both the shoulders

and the epinotum well armed ; and *debilis* has the shoulders rounded and very small teeth to the epinotum. I consider both to be good species.

Polyrhachis (Cyrtomyrma) rastellata Latr. var. *fulakora*
Mann. Bull. Mus. Compar. Zool. Harvard, lxiii.
p. 389 (1919).

♀. This variety agrees with *rastellata*, but the legs are very dark reddish brown instead of blood-red. This character is constant in a large series from many colonies.

Long. 6.5 mm.

Locality.—Solomon Islands (*Mann*).

A specimen in the Brit. Mus. Coll. from New Guinea agrees with cotypes from Mann.

Polyrhachis (Cyrtomyrma) rastellata Latr. var. *yorkana*
Forel, Arkiv f. Zool. ix. p. 110 (1915).

♂. This variety according to Forel differs from "race *levior* Rog"; by the complete lack of teeth to the epinotum. The centre teeth of the scale are shorter than in the typical form, and the head is broader behind.

Long. 4.9–5.6 mm.

Locality.—Cape York, Queensland (Mjöberg's expedition).

10. *Polyrhachis (Cyrtomyrma) ralumensis* Forel, Mit. Zool.
Mus. Berlin, ii. p. 34 (1902).

Entirely black. It differs from *rastellata* and *euralus* var. *goramensis* by its larger size and especially by its much larger head, which is exceptionally broad and short, broader than long, and less narrowed in front. The eyes are placed a little more forward, and three distinct ocelli are present. There is a distinct suture between the mesonotum and the epinotum. The teeth of the scale are larger than in *rastellata*, but the lateral ones much shorter than in v. *goramensis*.

Long. 7 mm.

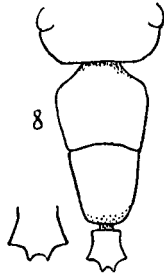
Locality.—Bismarck Archipelago.

Stitz's *P. rastellata* Latr. var. *major* from German New Guinea is given as a synonym of *ralumensis* For.

11. *Polyrhachis (Cyrtomyrma) burmanensis*, sp. n. (Fig. 8.)

♀. Black, shining, usual sculpture; legs dark brown, antennæ and tarsi black, palpi light brown.

The *head* is considerably narrower than in *rastellata*, not much broader than the thorax, the anterior margin of the *clypeus* projects much less, and the corner teeth are much less prominent; the teeth of the *mandibles*



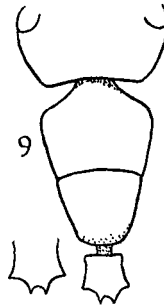
Polyrhachis (Cyrtomyrma) burmanensis, sp. n. Worker.
Part of head, thorax, scale, and scale enlarged.

are sharper. The *thorax* is more slender, not so massive, nor so convex; the *pro-mesonotal suture* is narrower and less marked, the posterior part of the thorax is much rounded, and there is no trace of a *meso-epinotal suture*. The *scale* is considerably narrower; the *teeth* are smaller, the centre ones being longer than the outer ones.

Long. 4.4 mm.

Locality.—Upper Burma (ex Coll. Bingham).

Type in Brit. Mus. Coll.



Polyrhachis (Cyrtomyrma) mackayi, sp. n. Worker.
Part of head, thorax, scale, and scale enlarged.

12. *Polyrhachis (Cyrtomyrma) mackayi*, sp. n. (Fig. 9.)

Black, shining, usual sculpture; legs dark brown, antennæ and tarsi black, palpi light brown.

Head as in *rastellata*, but not so broad, broader than in *burmanensis*. Thorax not nearly so massive and broad as in *rastellata*, but broader than in *burmanensis*. Scale narrow as in the latter, but with smaller blunter teeth.

Long. 4.7 mm.

♀. Similar to the ♂, except the usual caste differences, but the shoulders are more rounded and the teeth on the scale are blunter.

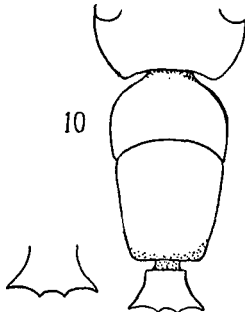
Long. 6.3 mm.

Locality.—Mackay, Queensland (*R. E. Turner*).

Type and ♀ type in Brit. Mus. Coll.

13. *Polyrhachis (Cyrtomyrma) euryalus* Smith, Proc. Linn. Soc. Lond. vii. p. 16 (1863). (Fig. 10.)

♂. "Length $2\frac{1}{2}$ lines. Black, smooth, and shining; the thorax rounded above, not spined; the outline when viewed laterally semi-circular; the legs obscure ferruginous. Abdomen globose; the node of the peduncle with four



Polyrhachis (Cyrtomyrma) euryalus Smith. Worker.
Part of head, thorax, scale, and scale enlarged.

spines, the two inner ones shorter than the lateral pair, but all short and acute. *Hab. Mysol.*"

Type in Hope Department, Oxford University Museum.

In a cotype in the Brit. Mus. Coll. the legs are very dark brown, the antennæ and tarsi black; the *pronotum* is broadest in the middle.

Long. 5 mm.

It is a smaller much more slender ant than *rastellata*.

Locality.—Mysol (*A. R. Wallace*).

Emery gives this species as a subspecies of *rastellata*, and the var. *torricelliana* Viehm. as a synonym.

Viehmeier, Abh. Zool. Anthropol. Mus. Dresden, xiv. No. 1, p. 9, fig. 11 *a* (1912) says it comes very near to the var. *goramensis* Emery, but smaller and with much smaller teeth to the scale. In his table, however, Arch. f. Naturg., lxxix. p. 51 (1913), he queries it as a synonym of *euryalus* Smith, but states that the teeth of the scale are longer than in *V. goramensis* Emery!

Polyrhachis (Cyrtomyrma) euryalus Smith var. *goramensis* Emery, Ann. Mus. Stor. Nat. Genova, xxiv. p. 239 (1887).

♂. Emery says that this variety is larger than *rastellata* Latr., of which species he treats it as a variety, and that the lateral teeth of the scale are longer.

Locality.—Isle Goram (*L. M. d'Albertis*).

Polyrhachis (Cyrtomyrma) euryalus Smith var. *javana* Viehm. Arch. f. Naturg. lxxix. pp. 51-2, fig. 11 (1913).

♀. "Mit *euryala* F. Sm. (*torricelliana*) verglichen: Schlanker. Kopf hinter den Augen etwas mehr verehgt; Thorax schmaler und etwas langer, nicht so hoch, von vorn nach hinten flacher gewölbt; abschüssige Fläche des Epinotums nicht so steil, Winkel zwischen ihr und der Basalfäche grösser. Zähne der Schuppe wie bei *rastellata*. Skulptur wie bei der Unterart (= *euryalus*). Beine bis auf die Knie und Tarsen, Spitze des Fühlerschaftes und das äusserste Ende der Geissel rot; im übrigen glänzend schwarz. L. 5.5 mm."

Locality.—East Java.

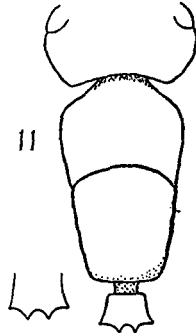
14. *Polyrhachis (Cyrtomyrma) ugiensis* Mann, Bull. Mus. Compar. Zool. Harvard, lxiii. p. 389 (1919). (Fig. 11.)

♀. Mann gives this insect as a subspecies of *rastellata* Latr., and writes: "The specimens from the eastern Solomons represent still another form of this variable species, characterized by the shorter spines of the petiole, which in some specimens have the lateral ones reduced to mere angles, and in the colour of the legs. The femora and the tibiae are reddish brown, with the bases of the latter and

the tarsi black. The antennæ are black, except the extreme tip of the last segment, which is brown."

Long. 5.5-6 mm.

Locality.—Solomon Islands (*Mann*).



Polyrhachis (Cyrtomyrma) ugiensis Mann. Worker.
Part of head, thorax, scale, and scale enlarged.

15. *Polyrhachis (Cyrtomyrma) luctuosa* Emery, Bull. Soc. Vaud. Sci. Nat. liv. p. 25 (1921).

♂. "Noire, pattes tendant au roux, absolument mate, densément et finement ponctuée sur presque tout le corps et sur les membres; les mandibles, l'extrémité et le dessous du gastre sont plus ou moins luisants. Pubescence très courte et éparse. Des poils dressés blanchâtres, courts, sont semés sur la tête et le gastre. Pareille pour la forme du corps à *P. rastellata*, mais le corselet est encore plus court et plus bossu. Les dents latérales de l'écaille ne sont guère plus longues que les médiales. L. environ 6.5 mm."

Locality.—New Guinea.

16. *Polyrhachis (Cyrtomyrma) fornicata* Emery, Ann. Mus. Stor. Nat. Genova, xl. p. 720 (1899).

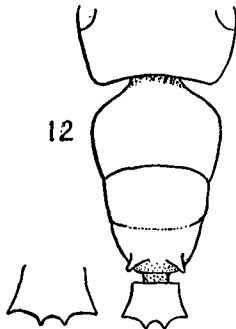
♂. This ant, which Emery treated as a subspecies of *rastellata* Latr., differs from the latter by the inner teeth of the scale being less high and acute, and less distant from the lateral ones. It possesses a slightly metallic reflection, and the legs are often reddish, though darker than in the typical form.

Locality.—Celebes.

b. *Epilotum* armed.17. *Polyrhachis* (*Cyrtomyrma*) *linæ*, sp. n. (Fig. 12.)

♀. Black, shining; legs dark brown, anterior tibiæ lighter, antennæ, coxæ, and tarsi black, palpi yellow, claws red. Usual reticulation and small scattered punctures, but the epimera of thorax and base of front of scale almost rugosely punctured, the anterior portion of the latter transversely striate.

Head transverse posteriorly, posterior angles distinct; *mandibles* finely punctured and longitudinally striate, the punctures large near the teeth, furnished with sharp teeth, the small tooth at the corners of the slightly projecting anterior margin of *clypeus* small, but sharp and distinct. *Thorax* convex, anterior angles of *pronotum* rounded, broadest a little before the centre; *pro-mesonotal suture* well marked, *meso-epinotal suture* faintly indicated;



Polyrhachis (*Cyrtomyrma*) *linæ*, sp. n. Worker.
Part of head, thorax, scale, and scale enlarged.

epinotum armed with two short sharp spines projecting outwards and upwards; the *declivity* of the epinotum is somewhat abrupt and about as long as the anterior surface; *scale* armed with four short teeth of about equal length, the centre ones nearer to each other than to the lateral ones.

Long. 6.2 mm.

♀. Similar to ♀, puncturation of *head* stronger; spines on *epinotum* and *scale* blunter. *Wings* dusky; *ptero-stigma* and *veins* yellow.

Long. 7.6 mm.

Locality.—Dutch New Guinea, Cyclops Mountains. Mt. Lina, 3500 ft. Five workers and three winged females taken by Miss L. E. Cheesman, February 1936.

♂ and ♀ type in Brit. Mus. Coll.

18. *Polyrhachis (Cyrtomyrma) emeryana* Mann, Bull. Mus. Compar. Zool. Harvard, lxiii. p. 391, fig. 59 (1919).

♂. A full description is given by Mann (*l. c.*): the epinotal spines nearly straight, a little shorter than their distance apart at base. The inner pair of spines on the scale are triangular, as broad at base as long; the lateral ones are elongate-triangular, acute, and four times as long as the inner pair. This species is near *leonidas* Forel, but smaller, the meso-epinotum less convex, the spines smaller and more cylindrical, and the outer pair of spines on the scale very much longer in proportion to the inner pair than in that species.

Long. 5 mm.

Locality.—Malaita, Auki, Solomon Islands (*Mann*). One worker.

19. *Polyrhachis (Cyrtomyrma) wagneri* Viehm. Arch. f. Naturg. lxxvii. p. 51, fig. 10 (1913).

♂. Pure black and very shining; the epinotum armed with a pair of small teeth; the scale of the petiole exceptionally broad, armed with two very short central teeth and long widely divergent lateral ones.

Long. 6 mm.

Viehmeyer says this species is near to *leonidas* Forel, but the head is smaller posteriorly, the eyes more convex, the thorax more arched, and the pronotum shorter. He also compares it with *levior* Roger; but as he did not know what that species is like, it is of no value.

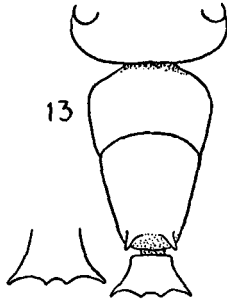
Locality.—New Guinea.

20. *Polyrhachis (Cyrtomyrma) doddi*, sp. n. (Fig. 13.)

Black, very shining; insertion of antennæ, trochanters, femora, tibiæ, and claws red; palpi light brown; antennæ black, with extreme apex of scape, and of the joints of funiculus, and tip of last joint, mandibles anteriorly, and teeth reddish; knees blackish; tarsi black with extreme apex of joints reddish. The reticulation forms a more or less circular pattern; the greater part of the sides of the

thorax and petiole are longitudinally striate, almost rugose. The whole body is covered with very short, extremely fine, scattered pubescence.

Head rounded from behind eyes, posterior angles not marked, posterior border slightly emarginate, rather sharply narrowed in front; *mandibles* armed with rather blunt teeth; *clypeus* not very convex, tooth at the corners of anterior border very small and not very prominent; a shallow furrow occurs behind the posterior border of the clypeus and before the *frontal area*; the latter quite undefined; the *frontal furrow* reaches between the frontal carinæ, more than two-thirds of their length. *Thorax* considerably arched; *pronotum* broadest in front with shoulders not so rounded as in *rastellata*; *epinotum*



Polyrhachis (Cyrtomyrma) doddi, sp. n. Worker.
Part of head, thorax, scale, and scale enlarged.

armed with two sharp spines projecting outwards and slightly downwards at apex; *scale* armed with two short rather blunt teeth in centre, and with two sharp, longer, divergent lateral ones.

Long. 4.9–6.6 mm.

♀. Similar to ♂, *shoulders* more rounded; teeth to *epinotum* and *scale* thicker. *Wings* yellowish; *pterostigma* and *veins* light brown.

Long. 8 mm.

Locality.—Queensland) *E. P. Dodd*).

♂ and ♀ type in Brit. Mus. Coll.

21. *Polyrhachis (Cyrtomyrma) demangei* Sants. Le Naturaliste, xxxii. p. 284 (1910). (Fig. 14.)

♀. This species is entirely black, including the legs, smooth and shining. The *epinotum* is armed with two

strong teeth curving back at the apex, and the scale with two long median teeth and two much lower, shorter, lateral teeth.

Long. 4.5-6 mm.

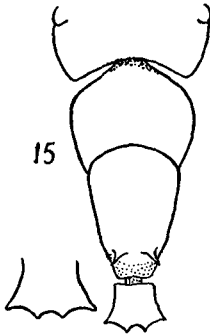
Santschi, who treats it as a subspecies of *rastellata* Latr., says the antennæ are a little thicker, the pronotum more elongate, and the lateral teeth of the scale are situated much lower and are less separated than in that species



Polyrhachis (Cyrtomyrma) demangei Sants.
Scale after Santschi.

and in *leonidas* Forel. It differs from *rastellata* in having black legs, but Santschi, unfortunately, placed the latter in the section of his table "Entièrement noire." He also says this form is intermediate between *levior* and *leonidas*, but, as was the case with Viehmeyer, he did not know the former species.

Locality.—Tonkin.



Polyrhachis (Cyrtomyrma) debilis Emery. Worker.
Part of head, thorax, scale, and scale enlarged.

22. *Polyrhachis (Cyrtomyrma) debilis* Emery, Ann. Mus. Stor. Nat. Genova, xxiv. p. 240 (1887). (Fig. 15.)

♂. Emery gives this species as a var. of *levior* Rog., from which he says it differs in the fact that the spines of the epinotum are reduced to very small teeth. Emery

also did not know *levior*, which he thought had rounded shoulders, whereas, as we have seen, that species has strongly toothed anterior angles to the pronotum. He, however, said it was doubtful whether to refer his var. to *levior* or *rastellata*. He gives the locality as New Guinea, Fly River (*L. M. d'Albertis*); Aru (*Beccari*).

A form from Papua was named v. *debelis* for us by the late Professor Wheeler. As, however, it has nothing to do with *levior* and differs considerably from *rastellata*, it would seem best to describe it more fully under the name of *debilis* Emery.

♂. Black, shining, with the usual reticulation; legs and palpi very dark brown; insertion of the antennæ and apex of trochanters reddish brown; antennæ black.

Head narrower than in *rastellata*; *clypeus* not very convex, anterior border not projecting with very small teeth at the corners, posterior border distinctly emarginate in centre. *Thorax* considerably arched; *pronotum* with shoulders rounded, considerably narrower than in *rastellata*, with more sloping shoulders; *epinotum* armed with two small sharp * teeth (evidently longer than in *wagneri* Viehm., according to Viehmeyer's figure); *scale* with similar but slightly longer teeth than in *rastellata*.

Long. 6-6.6 mm.

♀. Similar to ♂, but the shoulders are more rounded, the teeth of the *epinotum* reduced to small tubercles, those of the *scale* blunter. *Wings* yellowish; *pterostigma* and *veins* light yellowish brown.

Long. 7.7 mm.

Described from a number of workers, one winged female, and one deälated female (the queen) taken in a nest of leaves woven together with silk at Mafulu, 4000 ft., Papua by Miss L. E. Cheesman, xii. 1933. Males were also present in the nest. Miss Cheesman swept off herbage a number of workers of the same species at Kokoda.

Polyrhachis (*Cyrtomyrma*) *debilis* Emery var. *johnsoni* Mann, Bull. Mus. Compar. Zool. Harvard, lxiii. p. 390 (1919).

“ Resembling *levior* var. *debilis* Emery in having on the epinotum a pair of distinct, though very short and

* The size of these teeth varies, being considerably reduced in some specimens.

small spines. It is much larger in size than *debilis*, and the legs are uniformly dark brown, almost black. The thorax is evenly arched, much as in *leonidas* Forel, and the epinotal declivity in profile is straight."

Long. 7 mm.

Locality.—Solomon Islands (*Mann*). "One colony was found in a silk and carton nest on a palm leaf."

Mann treats this as a var. of *rastellata*, but it is evidently a var. of *debilis*, but larger. In the co-types in the Brit. Mus. Coll. the legs are lighter than in *debilis*, and the teeth to the epinotum are shorter, being almost tubercles. The latter character, however, probably varies as in *debilis*.

23. *Polyrhachis* (*Cyrtomyrma*) *leonidas* Forel, Mit. Zool. Mus. Berlin, ii. p. 34 (1902). (Fig. 16.)

Black; antennæ, coxæ, tarsi, mandibles, base of tibiæ, and hind border of the segments of the gaster brown; femora and tibiæ (except base) dirty yellowish or reddish yellow. The clypeus is flat and slightly concave from apex to base; the pronotum is only weakly arched from apex to base. The scale has a perpendicular hind surface, which is dull and somewhat strongly wavy striate reticulate.

Long. 6–6.5 mm.

Forel compares this species to *rastellata* and *levior* to which he says it is nearly related, especially to the latter.



Polyrhachis (*Cyrtomyrma*) *leonidas* Forel.
Scale after Santschi.

As, however, he did not know what this species was like, his comparisons with it are useless.

The head is narrower behind, the eyes are larger, the thorax is much longer and much less arched. The epinotal teeth are said to be broader and a little shorter than in *levior*, the scale is said to be like that of *levior*, but thinner; and its four little teeth are all distinctly bent back in the form of a claw.

Locality.—Bismarck Archipelago.