

The cancellation in this species is much finer than in *M. spirata*, and the whorls are not angulate at the sutures.

3. *MUMIOLA TESSELLATA*, *A. Ad.*

*M.* testa ovata, rimata, sordide alba, anfractibus normalibus 5, planiusculis, liris granosis longitudinalibus confertis, et sulcis validis transversis concinne tessellatis; apertura ovato-oblonga, plicā columellari transversa, valida, mediana.

*Hab.* Tanabe; O-Sima.

An ovate, tessellated species, of very neat form, and peculiar style of sculpture.

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Catalogue of Hymenopterous Insects collected by Mr. A. R. WALLACE in the Islands of Mysol, Ceram, Waigiou, Bouru and Timor. By FREDERICK SMITH, Assistant in the Zoological Department, British Museum. Communicated by W. W. SAUNDERS, Esq., F.R.S. & L.S.

[Read Jan. 15, 1863.]

It will be observed, on comparing the contents of the present collection with others described in previous papers, that the species most widely distributed belong to the families *Vespidæ* and *Sphéridæ*, both containing insects of powerful flight; whilst among the apterous genera, or those in which the females are only temporarily winged, as in the *Formicidæ*, the range of distribution is much more circumscribed; it is, consequently, here that the largest number of new species are found.

In this paper, no less than four new species of the family *Thynnidæ* are described, one belonging to the genus *Ælurus*, the first, I believe, that has occurred out of Australia. We hope shortly to be enabled to draw up a set of tables showing the range of geographical distribution of the numerous species of Hymenoptera described in the various previous papers on the insects of the Eastern Archipelago.

Fam. EVANIDÆ, *Leach.*

Gen. MEGISCHUS, *Brullé.*

1. *Megischus tarsalis*, *Smith, Proc. Linn. Soc. v. 137. 2.*

*Hab.* Ceram; Bachian.

2. *Megischus viduus*, *Smith, Proc. Linn. Soc. v. 138. 3.*

*Hab.* Kaisaa; Ceram.

3. MEGISCHUS SPOLIATOR. *M. niger*, mandibulis et antennarum

basi rufis; thorace rugoso; pedibus anticis et intermediis ferrugineis, tarsis posterioribus rubris; alis hyalinis.

*Female.* Length 7 lines. Black; the mandibles, palpi, and five basal joints of the antennæ ferruginous; the face rugose; the front with three short acute tubercles placed in a triangle, behind which the head is transversely rugulose; behind the eyes is a broad cream-coloured stripe, which extends to the base of the mandibles. The thorax rugose, with large punctures on the metathorax; the anterior and intermediate legs ferruginous, the coxæ of the latter black; the posterior tarsi ferruginous. Abdomen: the first segment, which forms the petiole, transversely striated; the rest of the abdomen smooth and shining; the ovipositor more than one-third longer than the body; the wings hyaline, the nervures black.

*Hab.* Waigiou.

4. *MEGISCHUS INSIDIATOR.* *M. niger*, capite et antennarum basi rufis; pedibus anticis et intermediis obscure ferrugineis, tarsis posterioribus pallide rubris; alis subhyalinis.

*Male.* Length 9 lines. The head and base of the antennæ ferruginous; the former transversely striated, with the posterior margin of the vertex smooth and shining, or with a few distant punctures. Thorax strongly, but not closely punctured; the wings fusco-hyaline; the anterior and intermediate tibiæ rufo-testaceous, with the femora obscurely so; the posterior femora with two stout teeth beneath and six minute ones between them; the posterior tibiæ, at their apex, and the tarsi pale rufo-testaceous. The abdomen elongate, lanceolate at the apex, and entirely smooth and shining.

*Hab.* Mysol.

Fam. ICHNEUMONIDÆ, *Leach.*

Gen. *CRYPTUS*, *Fabr.*

1. *Cryptus albopictus*, *Smith*, *Proc. Linn. Soc.* v. 61. 3.

*Hab.* Mysol; Makassar.

2. *CRYPTUS VOLATILIS.* *C. ferrugineus*, antennis nigris, medio albis; alis hyalinis.

*Female.* Length 7 lines. Ferruginous; the flagellum black, with the seventh and five following joints white; the claw-joint of the tarsi fuscous; the wings hyaline, the nervures fuscous, the costa and stigma ferruginous.

*Hab.* Mysol.

3. *CRYPTUS TARSATUS.* *C. ferrugineus*, antennis tarsisque nigris; alis hyalinis, apice fusco fumatis.

*Male.* Length  $6\frac{1}{2}$  lines. Ferruginous, inclining to ochraceous; the thorax beneath, the metathorax, and base of the legs pale ochraceous; the flagellum, posterior tarsi, and the apical joints of the anterior and

Gen. AGATHIS, *Latr.*

1. AGATHIS DECEPTOR. *A. ferruginea*, abdomine longitudinaliter striato, apice nigro; alis flavo-hyalinis, apice late fuscis.

*Female.* Length 6 lines. Ferruginous; the eyes, antennæ, and two apical segments of the abdomen black; the first, second, and third segments of the abdomen strongly and evenly grooved or striated longitudinally; the ovipositor ferruginous, the valves black; the wings yellow-hyaline, with a broad, dark fuscous apical border.

*Hab.* Ceram.

2. AGATHIS FLAVIPENNIS. *A. ferruginea*, abdominis segmentis supra longitudinaliter striatis; alis flavo-hyalinis, fusco maculatis.

*Female.* Length  $5\frac{1}{2}$  lines. Ferruginous; the face, anterior legs, and the intermediate coxæ paler than the body; the four basal segments of the abdomen longitudinally striated; the ovipositor ferruginous, with the valves black; the wings yellow, their apical margins slightly fuscous, with an ovate brown macula beneath the stigma.

*Hab.* Ceram.

Gen. CENOCÆLIUS, *Haliday.*

1. CENOCÆLIUS INSIDIATOR. *C. capite*, thorace, pedibus anterioribus et intermediis ferrugineis; alis fuscis; metathorace pube cinerea tecto; abdomine nitide nigro.

*Female.* Length  $4\frac{3}{4}$  lines. Head and thorax ferruginous, the former subquadrate, wider than the thorax, smooth and shining; the antennæ black; the face thinly covered with white pubescence. Thorax rough and pubescent; the scutellum smooth, shining, and elevated; the metathorax black, and densely covered with white pubescence; the wings dark brown, with the nervures black; the anterior and intermediate legs red, the posterior pair black. Abdomen black, smooth, shining, and impunctate; the basal segment with a short petiole and a deep impression on each side at its apical margin above.

*Hab.* Mysol.

Fam. FORMICIDÆ, *Leach.*Gen. FORMICA, *Linn.*

1. *Formica coxalis*, *Smith, Proc. Linn. Soc.* iii. 136. 5.

*Hab.* Waigiou; Aru; Mysol.

2. *Formica fragilis*, *Smith, Proc. Linn. Soc.* iii. 136. 3.

*Hab.* Waigiou; Aru.

3. *Formica circumspecta*, *Smith, Proc. Linn. Soc.* vi. 37. 4.

*Hab.* Waigiou; Celebes.

4. *Formica quadriceps*, *Smith, Proc. Linn. Soc.* iii. 137. 9.

*Hab.* Ceram; Aru.

5. *Formica pallida*, *Smith, Proc. Linn. Soc.* ii. 57. 19.

*Hab.* Martabello; Timor; Bachian; Borneo; Sumatra.

6. *Formica nitida*, *Smith, Proc. Linn. Soc.* iii. 138. 11.  
*Hab.* Mysol; Aru.
7. *Formica pavida*, *Proc. Linn. Soc.* v. 96. 9.  
*Hab.* Mysol; Bachian.
8. *Formica lævissima*, *Smith, Proc. Linn. Soc.* iii. 138. 10.  
*Hab.* Waigiou; Aru; Bachian.
9. **FORMICA LONGICEPS.** *F. nigra*, sparse griseo pilosa; capite oblongo, antennis tarsisque rufo-testaceis; thorace postice attenuato; abdominis squamula incrassata, supra rotundata.  
*Worker.* Length 3 lines. Black, and thinly covered with a short griseous pile; the head oblong-quadrate, slightly narrowed anteriorly; the mandibles short, very stout, and denticulate on their inner margin; the antennæ ferruginous, with the apical half of the scape black; the front with a slightly impressed line down the centre. Thorax oblong, narrowed posteriorly, and slightly compressed; the prothorax rounded in front, its posterior margin slightly constricted; the articulations of the legs and the tarsi rufo-testaceous. Abdomen ovate, the posterior margins of the segments narrowly pale testaceous; the node of the peduncle thick but narrow, with its upper margin rounded.  
*Hab.* Waigiou.

Gen. POLYRHACHIS, *Smith.*

1. *Polyrhachis sexspinosus*, *Latr. Hist. Nat. Fourm.* p. 126, pl. 4. f. 21 ♂.  
*Hab.* Waigiou; Aru; Philippines; India; Mysol.
2. *Polyrhachis Ithonus*, *Smith, Proc. Linn. Soc.* v. 99. 10.  
*Hab.* Waigiou; Bachian; Mysol.
3. *Polyrhachis bihamatus*, *Drury, Ins.* ii. pl. 38. f. 7, 8 ♀.  
*Hab.* Waigiou; Celebes; Bachian; Ceram; Borneo; India.
4. *Polyrhachis marginatus*, *Smith, Proc. Linn. Soc.* iii. 139. 3.  
*Hab.* Waigiou; Bachian; Philippines; India.
5. *Polyrhachis Diaphantus*, *Smith, Proc. Linn. Soc.* vi. 40. 14.  
*Hab.* Ceram; Celebes.
6. *Polyrhachis scutellatus*, *Smith, Proc. Linn. Soc.* iii. 140. 7.  
*Hab.* Ceram; Aru.
7. *Polyrhachis rugifrons*, *Proc. Linn. Soc.* v. 70. 3.  
*Hab.* Ceram; Celebes.
8. *Polyrhachis dives*, *Smith, Proc. Linn. Soc.* ii. 64. 19.  
*Hab.* Ceram; Malacca; Bachian.
9. *Polyrhachis rufofemoratus*, *Smith, Proc. Linn. Soc.* iii. 142. 14.  
*Hab.* Ceram; Aru; Waigiou.
10. *Polyrhachis Busiris*, *Smith, Proc. Linn. Soc.* v. 98. 7.  
*Hab.* Ceram; Bouru; Waigiou; Celebes; Bachian.

11. *Polyrhachis sericatus*, Guér. *Voy. Coq. Zool.* ii. 203; *Atlas Ins.* pl. 8. f. 2, 2 a, b, c, d,  $\zeta$ .

*Hab.* Martabello; Waigiou; Aru; New Hebrides; Mysol.

12. *Polyrhachis Valerus*, *Smith, Proc. Linn. Soc.* vi. 40. 12.

*Hab.* Waigiou; Celebes (Tondapo).

13. *Polyrhachis serratus*, *Smith, Proc. Linn. Soc.* iii. 140. 6.

*Hab.* Waigiou; Aru.

14. *Polyrhachis Orsyllus*, *Smith, Proc. Linn. Soc.* vi. 39. 8.

*Hab.* Ceram; Celebes (Tondano).

15. *Polyrhachis sculpturatus*, *Smith, Proc. Linn. Soc.* v. 70. 4.

*Hab.* Timor; Celebes.

16. *Polyrhachis Acasta*, *Smith, Proc. Linn. Soc.* v. 100. 14.

*Hab.* Bouru; Bachian.

17. **POLYRHACHIS DOLOMEDES.** *P. niger*, capite thoraceque subopacis; abdomine nitido; thorace inermi; pedibus ferrugineis; abdominis squamula spinis duabus acutis armata.

*Female.* Length  $3\frac{1}{4}$  lines. Black, the front very prominent; the ridges under which the antennæ are inserted much elevated; the extreme base and apex of the scape, the apex of the five basal joints of the flagellum, and the following ones entirely ferruginous; the mandibles ferruginous. Thorax oblong-ovate; the metathorax truncate behind; the lateral angles of the verge of the truncation acute, or subdentate; the legs obscure ferruginous, their articulations pale. Abdomen globose, shining and slightly sericeous; the node of the peduncle armed above with two short, stout, acute spines.

*Worker.* Length  $2\frac{1}{2}$  lines. Altogether more shining and smoother than the female; the front very prominent; the antennæ and legs pale ferruginous; the base of the abdomen obscurely ferruginous; the thorax compressed; the meso- and metathorax flattened above.

*Hab.* Ceram.

Mr. Wallace says, "Nest on a leaf, small, oval, and of papery texture."

18. **POLYRHACHIS TROPHIMUS.** *P. niger*, capite thoraceque longitudinaliter striatis; metathorace petiolique squamula bispinosis; pedibus obscure ferrugineis.

*Worker.* Length 2 lines. Black; the head shining and finely striated longitudinally. Thorax flattened above and longitudinally striated, slightly shining; the suture between the meso- and metathorax strongly impressed; the metathorax with two slightly elevated acute spines, those on the peduncle are longer, stouter, and curve to the shape of the sides of the abdomen; the legs dark ferruginous. Abdomen globose, smooth, and shining.

*Hab.* Ceram.

19. **POLYRHACHIS ALPHEUS.** *P. niger*, capite thoraceque minute

verrucatis; thorace spinis duabus minutis antice armato; abdominis squamula supra bispinosa; pedibus ferrugineis.

*Worker.* Length 3 lines. Black; head and thorax minutely and finely rugose; the head very prominent in front; the mandibles and antennæ ferruginous, the scape more or less fuscous above. Thorax above and at the sides flat, the anterior angles with a short acute tooth; the legs ferruginous, the anterior coxæ black. The abdomen globular, smooth, and shining, with the base castaneous; the node of the peduncle armed with two long, acute, curved spines, which incline slightly towards the abdomen.

*Hab.* Waigiou.

20. POLYRHACHIS BUBASTES. *P. niger*, capite rugoso; thorace spinis duabus acutis antice et postice armato; squama bispinosa; pedibus obscure ferrugineis.

*Female.* Length  $5\frac{1}{2}$  lines. Black, thinly sprinkled with erect hairs; the abdomen covered with ashy, silky pubescence; the legs dark ferruginous. The head very coarsely rugose, much narrowed behind the eyes, with the posterior lateral angles produced and forming curved flattened processes or spines. The thorax elongate, widest in the middle, rugose, but much more finely so than the head; the spines in front short, curved, stout, and acute; the posterior pair are of the same form; the legs obscurely ferruginous; the scale of the abdomen incassate, rugose, and armed with two short acute spines behind.

*Worker.* This sex only differs in the form of the thorax, which is oblong, the sides straight and gradually narrowed slightly posteriorly; the sculpture on the thorax stronger than in the female.

*Hab.* Waigiou.

This species closely resembles the *P. sexspinosus*, but differs too much to be regarded as a variety of that species; the form of the head is very different, being more narrowed behind the eyes, the sides being straight; the short, thick, curved spines on the thorax also distinguish it from *P. sexspinosus*.

21. POLYRHACHIS PAROMALUS. *P. niger*, lævis nitidusque, thorace spinis duabus acutis postice armato; pedibus obscure ferrugineis; squama spinis duabus acutis curvatis.

*Worker.* Length 3 lines. Jet-black, smooth and shining; the mandibles ferruginous; the extreme base and apex of the antennæ rufopiceous; the head much narrowed behind the eyes, which are round and prominent; the front of the head very convex. Thorax: on each side in front a minute tooth or tubercle; armed posteriorly with two long, bent, acute spines, directed backwards; the metathorax oblique; the legs long and obscurely ferruginous. Abdomen: the node of the peduncle with two long, bent, acute spines directed backwards above the base of the abdomen; the latter smooth, shining, and globose.

*Hab.* Ceram.

Mr. Wallace, in a note, says, "Nest on a tree, consisting of two small cells of soft papery matter, about one inch in diameter; each with one opening."

22. *POLYRHACHIS XIPHIAS*. *P. niger*, lævis nitidusque, metathorace petiolique squamula bispinosis.

*Female*. Length  $4\frac{1}{4}$  lines. Black; the head subquadrate, the front very convex, smooth and shining; the flagellum pale ferruginous, with two or three of the basal joints fuscous above. Thorax ovate; the metathorax truncate, and armed with two short acute spines; the legs obscure ferruginous, with the articulations palest, the trochanters very pale; wings opaque, the nervures rufo-testaceous, the stigma fuscous. Abdomen globose, smooth and shining; the peduncle with two short acute spines, directed backwards, and slightly curved.

*Hab.* Waigiou.

23. *POLYRHACHIS EURYALUS*. *P. niger*, lævis, nitidus, thorace inermi; petioli squamula quadrispinosa.

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

*Hab.* Mysol.

24. *POLYRHACHIS DOLOMEDES*. *P. niger*, thorace supra deplanato; abdominis squama spinis duabus curvatis armata; abdomine nitido; pedibus obscure ferrugineis; flagello flavo-testaceo.

*Worker*. Length 3 lines. Black; the head and thorax subopaque; the abdomen smooth and shining; the flagellum testaceous yellow, or pale ferruginous; the legs dark ferruginous. The thorax flattened above, the anterior angle acute, or produced into short acute teeth; the metathorax unarmed; the front of the head very prominent. The abdomen globose; the node of the peduncle with two long acute spines, which are divergent and curve backwards to the shape of the base of the abdomen.

*Hab.* Waigiou.

This species may very probably prove to be the worker of *Polyrhachis Xiphias*.

25. *POLYRHACHIS SPARAXES*. *P. niger*, capite thoraceque subopacis; thorace inermi; abdominis squamula trispinosa; alis subhyalinis, nervuris pallide testaceis.

*Female*. Length 3 lines. Black; the head and thorax finely rugose and subopaque; the abdomen globose and shining; the extreme apex of the flagellum pale rufo-testaceous; the angles of the prothorax acute; the wings yellow, with the nervures pale testaceous; the node of the peduncle with three acute spines, erect, and of equal length; the abdomen slightly sericeous.

*Hab.* Mysol.

This is very distinct from *P. trispinosus*, which is much larger and has the anterior angles of the thorax rounded; the spines on the node of the peduncle are shorter, and the central one shorter than the others.

26. *POLYRHACHIS NIGRICEPS*. *P. ferrugineus*, nitidus, capite nigro; thorace spinis duabus acutis antice et postice armato.

*Worker*. Length 4 lines. Smooth, shining, and impunctate; the head oblong, the eyes prominent and placed backwards; the mandibles stout, obscurely ferruginous, and quadridentate at the apex; the ridges on the front, at the sides of which the antennæ are inserted, much elevated, and with a less elevated ridge between them; the antennæ ferruginous. Thorax elongate as in *P. sexspinosus*, with two acute teeth in front diverging outwards, and two suberect ones behind; the legs elongate, paler than the thorax. Abdomen paler than the head and thorax, the node of the peduncle incrassate, somewhat wedge-shaped above.

*Hab.* Waigiou.

27. *POLYRHACHIS PAXILLUS*. *P. niger*; thorace supra deplanato, metathorace et pedunculo spinis duabus longis acutis armatis; pedibus ferrugineis.

*Worker*. Length  $3\frac{1}{2}$  lines. Black; the head and thorax finely shagreened; the mandibles ferruginous, but obscure, finely striated; the flagellura fusco-ferruginous; the extreme base of the scape bright ferruginous. Thorax oblong, narrowed behind, flattened above and at the sides, the lateral margins raised, particularly those of the prothorax in front; the metathorax has two long, slightly bent, acute spines directed backwards over the node of the peduncle, which has also two acute spines directed backwards; the legs ferruginous. Abdomen globose, smooth and shining, with a fine silky fulvous pile which changes colour in different lights.

*Hab.* Martabello.

#### Gen. *ŒCOPHYLLA*, *Smith*.

1. *Œcophylla smaragdina*, *Smith, Proc. Linn. Soc.* v. 102. 1. (*Formica smaragdina*, *Fabr. Syst. Piez.* p. 397. 4.)

*Hab.* Mysol; Timor; Waigiou; Gilolo; Bachian; Dory; Aru; Borneo; Philippines; Java; India.

#### Fam. *PONERIDÆ*, *Smith*.

##### Gen. *PONERA*, *Latr.*

1. *Ponera parallela*, *Smith, Proc. Linn. Soc.* iii. 143. 3.

*Hab.* Waigiou; Aru; Celebes; Mysol.

2. *Ponera læviceps*, *Smith, Proc. Linn. Soc.* ii. 69. 13.

*Hab.* Waigiou; Celebes; Bachian; Borneo.

3. *Ponera cuprea*, *Smith, Proc. Linn. Soc.* v. 104. 6.

*Hab.* Ceram; Dory.



4. *PONERA PURPUREA*. *P. purpureo-cærulea*; capite, thorace abdominisque basi profunde striatis; abdominis nodo incrassato, supra spinis duabus parvis armato.

*Worker*. Length 4 lines. Purple-blue, the antennæ and legs fusco-ferruginous; the second and following segments of the abdomen black, with the margins of the segments rufo-piceous. The head evenly, strongly, and longitudinally striated; the striation on the prothorax is strong, transverse, and curved; that on the thorax behind is also transverse and runs obliquely forwards at the sides; the striæ on the peduncle run round it, being circular; on the first segment of the abdomen, in the centre of its apical margin, is a minute curved stria in the form of a horse-shoe, round which passes a second, and so on, each successive stria being an enlarged form of the preceding; the second and following segments with a silky texture.

*Hab.* Gilolo.

5. *PONERA TORTUOLOSA*. *P. æneo-nigra*; capite, thorace abdominisque basi striatis; nodo spinis duabus acutis armato. (*Operaria*.)—*P. nitida, nigra*; capite longitudinaliter striato; thorace profunde punctato. (*Fœmina*.)

*Worker*. Length 5 lines. Obscurely nigro-æneous, covered with a short yellowish downy pile, and sprinkled with longer cinereous hair; the head strongly striated, the striæ radiating as it were from the middle of the face and running obliquely to the sides of the head; down the cheeks the striæ are longitudinal; the mandibles obscure rufo-piceous. Thorax: the striæ on the prothorax are transverse and curved, behind which they are oblique, running from the middle forwards down the sides; the peduncle is incrassatè, rounded in front and truncate behind, the striæ running round, above armed with two acute spines. The first node of the abdomen has a curved striation much more delicate than that on the thorax; the following segments not striated, with their apical margins rufo-piceous; the legs dark fusco-ferruginous.

*Female*. The same size as the worker, shining, the head longitudinally striated, the thorax with large scattered punctures; the abdomen impunctate, with the margins of the segments rufo-piceous; wings slightly fuscous, the nervures black, with a dark fuscous cloud in the marginal cell; the tibiæ and tarsi ferruginous as well as the mandibles and antennæ.

*Hab.* Ceram; Bouru.

The sexes were identified by Mr. Wallace.

#### Gen. AMBLYOPONE, *Erichs.*

1. *Amblyopone castaneus*, *Smith, Proc. Linn. Soc.* v. 105. 1.

*Hab.* Ceram; Bachian.

Gen. ECTATOMMA, *Smith*.

1. *Ectatomma rugosa*, *Smith, Proc. Linn. Soc.* iv. 143. 1.  
*Hab.* Ceram; Aru.

Gen. ODONTOMACHUS, *Latr.*

1. *Odontomachus simillimus*, *Smith, Cat. Form.* p. 80. 11; *Proc. Linn. Soc.* iv. 144. 1.  
*Hab.* Waigiou; Ceram; Aru; Ceylon; Goram.
2. *Odontomachus tyrannicus*, *Smith, Proc. Linn. Soc.* vi. 44. 3.  
*Hab.* Waigiou; Aru; Mysol; Celebes.
3. *Odontomachus malignus*, *Smith, Proc. Linn. Soc.* iii. 144. 3.  
*Hab.* Ceram; Aru; Mysol.
4. *Odontomachus nigriceps*, *Smith, Proc. Linn. Soc.* v. 103. 3.  
*Hab.* Mysol; New Guinea (Dory).

5. ODONTOMACHUS CEPHALOTES. *O. ferrugineus*, capite abdomineque longitudinaliter striatis; thorace oblongo, transversim striato.  
*Worker.* Length  $5\frac{1}{2}$  lines. Ferruginous; the head and abdomen, or sometimes the entire insect, more or less fuscous, the antennæ and legs pale ferruginous; the mandibles tridentate at the apex, the inner and outer teeth, particularly the former, blunt at their apex; their inner margin without teeth; the head large, oblong-quadrate, finely striated longitudinally, and having a glossy silky appearance. The thorax and node of the abdomen finely striated transversely. The abdomen striated transversely at the base, the striæ curving at the sides and then running in a longitudinal direction to the apex.  
*Hab.* Ceram.

6. ODONTOMACHUS ACICULATUS. *O. fusco-ferrugineus*; capite supra longitudinaliter striato, thorace abdomineque transversim striatis.  
*Worker.* Length  $5\frac{1}{2}$  lines. Blackish brown, with the antennæ, legs, and mandibles ferruginous; the head posteriorly and the node of the peduncle reddish brown; the mandibles tridentate at the apex, their inner margin serrated. The face longitudinally striated; the sides of the head behind the eyes obliquely striated, the striation much finer than that on the face. Thorax: the prothorax with a circular striation, behind which it is transverse. The node of the peduncle transversely striated, terminating above in one acute spine; the abdomen transversely and finely aciculate.  
*Hab.* Mysol.

Gen. PODOMYRMA, *Smith*.

1. *Podomyrma basalis*, *Smith, Proc. Linn. Soc.* iii. 147. 4.  
*Hab.* Mysol; Bouru; Amboyna; Aru; Dory.

The specimens from Mysol consist of a worker and a female: the latter

differs from the former in having the thorax oblong-ovate, with a few striæ down the middle, leaving the sides smooth; the striæ do not extend beyond the scutellum, the metathorax being smooth and shining; the first node of the peduncle is oblong, slightly curving downwards, and not toothed either above or beneath; the second node is globose and longitudinally striated. Abdomen oblong-ovate, pale ferruginous or rather clay-coloured; the apical margin of the first segment with a broad black band, which is toothed in the middle; the second segment has a narrower band.

2. *PODOMYRMA LÆVISSIMA*. *P. nigro-ferruginea*; thorace abdomineque lævissimis lucidisque; capite delicatule punctato; femoribus medio valde incrassatis, basi tenuissimis.

*Worker*. Length  $2\frac{3}{4}$  lines. Dark castaneous, nearly black, with the mandibles, abdomen at the base, and the legs in parts obscure ferruginous, the mandibles palest; the head oblong-quadrated, with the angles rounded, delicately striated between the antennæ, and very finely punctured behind their insertion. Thorax deeply strangulated in the middle, the anterior angles produced and acute.

*Hab.* Mysol.

3. *PODOMYRMA RUFICEPS*. *P. fusco-ferruginea*; capite rubro; capite thoraceque longitudinaliter striatim rugulosis; femoribus medio valde incrassatis, basi tenuissimis; pedibus abdomineque lævissimis lucidisque.

*Worker*. Length 4 lines. Head ferruginous, the antennæ and teeth of the mandibles black; the thorax, abdomen, and legs dark fusco-ferruginous; the head, thorax, and nodes of the petiole coarsely and longitudinally rugose, on the disk of the thorax running into irregular coarse striæ; on each side of the thorax in front is a stout blunt spine; the metathorax has two short teeth or spines, and the first node of the abdomen has a tooth in the middle above, and another at the base beneath. The abdomen is oblong-ovate, and pointed at the apex; the legs smooth and shining, with the femora much swollen in the middle; the antennæ, thorax, abdomen, and legs thinly sprinkled with erect pale hairs.

*Hab.* Mysol.

#### Gen. PSEUDOMYRMA, Guér.

1. *Pseudomyrma læviceps*, *Smith, Proc. Linn. Soc.* iii. 145. 1.

*Hab.* Ceram; Dory; Aru; Waigiou.

2. *PSEUDOMYRMA CARBONARIA*. *P. aterrima, lævis, nitida*; antennis, mandibulis, tibiis tarsisque rufo-testaceis.

*Worker*. Length 2 lines. Jet-black, smooth and shining; the eyes large, oblong-ovate, occupying a considerable portion of the sides of the head; the antennæ and mandibles rufo-testaceous. Thorax oblong, widest in front, the divisions strongly impressed; the tibiæ and

tarsi rufo-testaceous. Abdomen oblong-ovate, the petiole of the first node short; the second node wider than the first, subglobose.

*Female.* Resembles the worker, but with the head longer, the sides more parallel, and having three ocelli on the vertex; the legs are rather darker; in other respects both sexes are alike.

*Hab.* Bouru.

Gen. *MYRMICA*, Latr.

1. *Myrmica poneroïdes*, Smith, *Proc. Linn. Soc.* v. 107. 2.

*Hab.* Ceram; Bouru; Bachian.

2. *MYRMICA INCERTA.* *M. nigra*, capite ferrugineo; capite thoraceque longitudinaliter striatis; metathorace bispinoso.

*Female.* Length  $2\frac{1}{2}$  lines. Head ferruginous; the thorax and abdomen black, the former obscurely ferruginous on the disk; the legs rufo-fuscous, with the anterior tibiæ and all the tarsi palest; the flagellum pale ferruginous. The head heart-shaped, and, as well as the thorax, longitudinally striated; the thorax short and rounded, posteriorly armed with two short acute spines. Abdomen rounded, truncate at the base, and covered with a fine silky pubescence; the first node of the abdomen small and compressed, the second transverse and more than twice the width of the first.

*Hab.* Mysol.

This species is probably not a true *Myrmica*; it has exactly the appearance of a small *Cecodoma*; it may be a female of *Crematogaster*.

3. *MYRMICA MÆSTA.* *M. fusco-nigra*, nitida; mandibulis, antennis pedibusque rufo-ferrugineis; metathorace mutico.

*Worker.* Length 2 lines. Blackish brown, shining; the anterior margin of the head, the mandibles and antennæ rufo-ferruginous; the head finely striated longitudinally. Thorax delicately striated and with scattered punctures; the legs rufo-ferruginous. Abdomen smooth and shining, the nodes globose.

*Hab.* Martabello.

4. *MYRMICA UMBRIPENNIS.* *M. rufo-ferruginea*, nitida; capite thoraceque sparse punctatis, alis nigro-fuscis.

*Female.* Length  $2\frac{1}{2}$  lines. Bright rufo-ferruginous, smooth and shining; the head with a few fine, distant punctures. Thorax short, ovate, and with a few strong, distant punctures; the wings dark brown; the metathorax subdentate. Abdomen ovate, the nodes of the peduncle subovate, smooth and shining.

*Hab.* Mysol.

Fam. *ATTIDÆ*, Smith.

Gen. *SOLENOPSIS*, Westw.

1. *Solenopsis cephalotes*, Smith, *Proc. Linn. Soc.* v. 113. 1.

*Hab.* Ceram; Aru; Celebes.

2. *Solenopsis laboriosa*, *Smith, Proc. Linn. Soc.* vi. 48. 2.

*Hab.* Waigiou; Celebes (Tondano).

3. *SOLENOPSIS CALIDA*. *S. fusco-ferruginea*; capite oblongo-ovato, longitudinaliter striato, postice transverse striato; abdomine oblongo, nitido; pedibus ferrugineis.

*Female.* Length 7 lines. Dark brown, with the anterior margin of the face and the antennæ ferruginous; the head longitudinally striated before the ocelli, behind which it has a curved rugose striation; the mandibles obscure ferruginous, smooth, with a few oblong punctures at their inner margin, and having two teeth at their apex. Thorax ovate, shining, with five distant punctures; the sutures ferruginous, as well as the apex of the metathorax; the legs bright pale ferruginous; the lateral angles of the superior surface of the metathorax subdentate. Abdomen oblong-ovate, the apical margins of the segments broadly obscure ferruginous; the nodes of the abdomen thickened, transverse, rounded above.

*Hab.* Ceram.

#### GEN. PHEIDOLE, *Westw.*

1. *Pheidole megacephala*, *Smith, Proc. Linn. Soc.* v. 112. 5.

*Hab.* Timor; Tondano; Bachiam.

2. *PHEIDOLE SINGULARIS*. *P. rufo-ferruginea*; capite maximo, striato et punctato, postice emarginato; thorace quadrispinoso.

*Worker.* Length 2 lines. Rufo-ferruginous; the head very large, more than four times the size of the abdomen, longitudinally striated, with the sides and posterior portion strongly punctured, the posterior margin deeply emarginate; a curved transverse depression crossing from eye to eye, the curve being backwards; the mandibles very stout, smooth, and without teeth on their inner margin. Thorax armed in front with a stout acute spine on each side; the metathorax has also two spines, which are much smaller, nearly upright, and acute. Abdomen small, ovate, and fuscous towards the apex.

*Hab.* Mysol.

3. *PHEIDOLE MORDAX*. *P. rufo-ferruginea*; capite maximo, longitudinaliter striato; metathoracis spinis acutis, minutissimis; abdomine apice fusco.

*Worker.* Length 2 lines. Rufo-ferruginous; the head very large, at least four times the size of the abdomen, longitudinally striated, deeply emarginate behind. The thorax smooth and shining in front and with two minute, erect, acute spines on the metathorax; the legs long, slender, and paler than the body. Abdomen small and ovate, ferruginous at the base and fuscous at the apex; the first node of the peduncle small and compressed, the second subglobose and transverse.

*Hab.* Mysol.

4. *PHEIDOLE PENETRALIS*. *P.* rufo-ferruginea; capite maximo, in medio sulcato et longitudinaliter striato; metathorace bispinoso; abdomine apice fusco.

*Worker*. Length 2 lines. Rufo-ferruginous; the head very large, longitudinally deeply striated, the striæ scarcely extending to the posterior margin, which is roughened and deeply emarginate in the middle; the mandibles incrassate, smooth and shining. Thorax very narrow, strangled in the middle, smooth and shining anteriorly, and armed with two small acute spines on the metathorax; the abdomen fuscous, with the base ferruginous.

*Hab.* Mysol.

Subfam. CRYPTOCERIDÆ, *Smith*.

Gen. ECHINOPLA, *Smith*.

1. *Echinopla striata*, *Smith*, *Proc. Linn. Soc.* ii. 80. 3.

*Hab.* Ceram; Celebes; Malacca.

2. *ECHINOPLA NITIDA*. *E.* nigra; capite, thorace et abdomine lavis, nitidis; pedunculo transverso; antennarum pedumque apicibus ferrugineis.

*Worker*. Length 2 lines. Jet-black, smooth and shining; the apex of the antennæ rufo-testaceous; the head rounded in front and transverse behind; eyes round and very prominent. The thorax oblong-quadrate, scarcely as wide as the head, rather widest behind; the apical joints of the tarsi ferruginous. Abdomen subglobose; the node of the peduncle transverse, each lateral extremity armed with three teeth, two of which are at the upper margin of the extremity, the third and the largest being at the lower margin.

*Hab.* Ceram.

3. *ECHINOPLA DECEPTOR*. *E.* nigra, capite thoraceque longitudinaliter striatis; abdomine nigro-cæruleo, squama in utroque latere spina horizontali; tarsis apicalibus pallide testaceis.

*Female*. Length 4 lines. Black, with the abdomen obscurely blue. The head a little wider than the thorax and longitudinally striated. Thorax oblong, longitudinally striated, the sides parallel to the base of the scutellum, then obliquely narrowed to the base of the metathorax, the sides of which are rounded and expanded beyond the width of the prothorax; the metathorax is also rounded behind; the claw-joint of the tarsi testaceous; the legs and also the body thinly sprinkled with pale hairs; wings wanting. Abdomen globose and pubescent, the scale of the peduncle transverse, its superior margin slightly curved, and with a number of minute denticulations, terminating on each side in an acute point or spine.

*Hab.* Bouru.

Gen. CATAULACUS, *Smith*.

- 1.
- Cataulacus setosus*
- ,
- Smith, Proc. Linn. Soc.*
- v. 114. 1.

*Hab.* Mysol; Waigiou; Bachian.

The specimen from Mysol is a female: this sex differs in having a single ocellus on the vertex; it is very minute, and situated in a pit; the head is rather smaller, and the eyes also are smaller; the thorax is only subdentate behind; the abdomen is oblong-ovate, and emarginate at the base.

Fam. MUTILLIDÆ, *Leach*.Gen. MUTILLA, *Linn*.

- 1.
- Mutilla Ianthea*
- ,
- Smith, Proc. Linn. Soc.*
- v. 115. 3.

*Hab.* Ceram; Amboyna; Bachian.

- 2.
- Mutilla anthylla*
- ,
- Smith, Proc. Linn. Soc.*
- v. 115. 4.

*Hab.* Ceram; Gilolo; Bachian.

- 3.
- Mutilla nigra*
- ,
- Smith, Proc. Linn. Soc.*
- iii. 151. 4.

*Hab.* Ceram; Aru.

- 4.
- Mutilla suspiciosa*
- ,
- Smith, Proc. Linn. Soc.*
- ii. 84. 5.

*Hab.* Bouru; Makassar; Amboyna; Bachian; Borneo.

- 5.
- MUTILLA MIRABILIS*
- .
- M. cupreo-viridi tincta*
- ; scapo pedibusque ferrugineis; alis fuscis, basi hyalinis.

*Male.* Length 5 lines. Entirely bright copper-coloured, with tints of green in different lights; the head and thorax strongly punctured, the abdomen more finely and distantly so; the mandibles, palpi, scape, two basal joints of the flagellum, and the legs ferruginous, the rest of the antennæ black; the head, thorax, legs, and two basal segments of the abdomen thinly covered with erect, long, pale pubescence, that on the rest of the abdomen black; the wings brown, with their base subhyaline.

*Hab.* Waigiou.

- 6.
- MUTILLA DAMIA*
- .
- M. capite abdomineque nigris*
- ; thorace rubro; alis fuscis, basi hyalinis; abdomine fascia albo-pubescente decorato.

*Male.* Length  $3\frac{1}{2}$ –4 lines. Head, abdomen, legs, and antennæ black; thorax red, thinly sprinkled with long pale hair; the apical margin of the second segment of the abdomen with a fascia of long snow-white hair; the margin of the basal segment is also thinly fringed with the same. The head and thorax strongly punctured; the abdomen with more distant strong punctures; the pubescence on the third, fourth, fifth, and sixth segments black, that on the apical one white; the wings fuscous, with their base subhyaline.

*Hab.* Ceram.

- 7.
- MUTILLA THERA*
- .
- M. capite abdomineque nigris*
- ; thorace rubro; abdominis segmento secundo fascia albo-pubescente ornato.

*Female.* Length 4 lines. Head, antennæ, legs, and abdomen black, finely shagreened and subopaque; thinly sprinkled with black hairs; the legs sprinkled with glittering white hairs. The thorax red, rugose, and clothed with decumbent red hair; its anterior and posterior margins transverse; the sides rounded, but slightly narrowed behind. The apical margin of the second segment of the abdomen with a narrow band of white pubescence, produced and widened in the middle of the band; the fifth segment fringed with glittering pale pubescence; the sixth longitudinally striated, with the base ferruginous.

*Hab.* Ceram.

S. MUTILLA FAUSTA. *M.* capite thoraceque nigro-cæruleis; abdomine nigro, fascia argenteo-pubescente decorato.

*Female.* Length  $2\frac{3}{4}$  lines. Head and thorax blue-black, and closely punctured; the palpi elongate and pale rufo-testaceous; the mandibles, apex of the scape, the tibiæ and tarsi ferruginous; the tibiæ dusky outside; the head wider than the thorax, and transverse-quadrate above. The basal segment of the abdomen yellowish above; the second segment with its apical margin pale testaceous and clothed with silvery-white hair, the band produced in the middle into a bilobed shape; the apical segment rufo-testaceous, smooth and shining; the insect thinly sprinkled with erect pale pubescence.

*Hab.* Mysol.

#### Gen. TIPHIA, *Fabr.*

1. TIPHIA INTRUDENS. *T.* nitida, atra, punctata, sparse griseo-pubescentis; femoribus quatuor posticis compressis; linea intermedia metathoracis ad lineam transversam excurrente.

*Female.* Length  $3\frac{1}{2}$ –5 lines. Black and shining; the head with strong but rather distant punctures; the mandibles ferruginous. Thorax: the pro- and mesothorax strongly punctured, the posterior margin of the former smooth and shining; the metathorax smooth, the superior surface with three elevated longitudinal lines, all extending to the verge of the truncation,—the lines nearly parallel, very slightly converging towards the apex; the anterior wings fusco-hyaline; the tegulæ smooth and shining, with their posterior margins rufo-piceous; the tips of the femora rufo-piceous. Abdomen delicately punctured; the apical segment rugose, with the tip ferruginous; the legs, the sides and apex of the abdomen with glittering pale hairs.

The *male* differs in having the marginal cell closed and the stigma large and black.

*Hab.* Mysol.

#### Fam. THYNNIDÆ, *Erichs.*

##### Gen. THYNNUS, *Fabr.*

1. THYNNUS LUGUBRIS. *T.* niger, delicatule punctulatus; alis fusco-nigris.