

Finally, the Ruminant's œsophagus differs widely from the human as regards the microscopic character of its muscular fibre; for while in the human gullet there is a mixture of striped and unstriped fibres, in the Ruminant's they are all of the striped variety.

In conclusion, I have to acknowledge my obligations to my friend Mr. Deas, to whose kindness I owe the beautiful and very accurate drawings which illustrate this paper.

## EXPLANATION OF THE PLATE.

## PLATE III.

- Fig. 1. Portion of sheep's gullet, twice the natural size (seen from within). The fibres of the internal layer, *c c*, are seen decussating and running into the external layer, *b b*; while at *A* is seen a *non*-decussating bundle passing outside the decussation, from the outer layer of the one side of the decussation to that of the other side.
- Fig. 2. The entire circumference of a sheep's œsophagus, seen from within (natural size). It has been simply slit open and dissected. Above, *A', A''*, are seen the two lines of decussation; *b*, a bundle of fibres which has not decussated at the decussation *A'*; and *c*, a similar bundle which has not decussated at *A''*. *d*, a bundle of fibres of the inner layer which decussates at the line of decussation *A'*; and *e*, a similar bundle which decussates at the line *A'*. *d* runs up to form *b*, and *e* goes to form *c*, both in the outer layer; below *f* they separate into their finest fibres and interdigitate one with another. *g g*, outer layer.
- Fig. 3. Two portions of the œsophagus of a sheep (natural size), to show the difference between the inner and outer aspects of the line of decussation. In *A* it is seen from the inside. All the fibres decussate, so that the decussation is sharp and well defined; but on the outside, *B*, it is much obscured by the non-decussating fibres, which, instead of dipping down as in *A*, run across from one side of the line to the other. *g g*, outer layers. *d*, inner layer.

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Descriptions of New Species of Hymenopterous Insects from the Islands of Sumatra, Sula, Gilolo, Salwatty, and New Guinea, collected by Mr. A. R. WALLACE. By FREDERICK SMITH, Assistant in the Zoological Department, British Museum. Communicated by W. W. SAUNDERS, Esq., V.P.L.S.

[PLATE IV.]

[Read June 2, 1864.]

THE collections of Hymenoptera which are described in the following list contain several insects of especial interest. Three new

genera of Formicidæ are characterized. The insect which forms the type of the new genus *Cephaloxys* is one of the most anomalous forms hitherto discovered, belonging to the Cryptoceridæ: viewed above, it would appear to be a blind Ant; but further examination reveals the fact of the eyes being situated on the under-side of the head—a circumstance unparalleled in the Formicidæ. Figures of some of the more interesting genera and species are given, including the Tenthredinidous genus *Cladomacra*, the males of which have the antennæ beautifully pectinated. A new species of the genus *Pterochilus* is described, and is undoubtedly the finest discovered belonging to that genus of Wasps.

Fam. TENTHREDINIDÆ, *Leach*.

Gen. SELANDRIA, *Leach*.

1. SELANDRIA DORYCA, *Smith, Proc. Linn. Soc. v. p. 135*.

*Hab.* Salwatty.

Gen. CLADOMACRA, *Smith*. (Pl. IV. fig. 1, ♂.)

1. CLADOMACRA MACROPUS, *Smith, Ann. & Mag. Nat. Hist.* (1860) vi.

*Hab.* New Guinea.

Fam. CHRYSIDIDÆ, *Leach*.

Gen. CHRYSIS, *Latr*.

1. CHRYSIS INTRUDENS. *C. viridi-cyanea*; capite thoraceque confertissime punctulatis; abdominis segmentis delicatule punctatis, apice sex-dentato; alis subhyalinis.

Length  $4\frac{1}{2}$  lines. Blue-green, abdomen brightest green and subopaque; head and thorax closely and strongly punctured; the flagellum black; the tarsi fuscous, with the basal joint green outside; wings subhyaline. Abdomen finely punctured, the basal segment most strongly so; the extreme base of the second and third segments blue-black; the apical segment with six acute spines.

*Hab.* New Guinea.

This species belongs to the fifth section of the eighth phalanx of Dahlbom's divisions of the Chrysididæ, and is evidently quite distinct from any of the species described by that author.

Fam. EVANIADÆ, *Leach*.

Gen. MEGISCHUS, *Brullé*.

1. MEGISCHUS CORONATOR, *Fabr. Syst. Piez. p. 118* (♀).

*Hab.* Morty Island; Salwatty.

Fam. ICHNEUMONIDÆ, *Leach.*Gen. MESOSTENUS, *Brullé.*

1. MESOSTENUS MULTIPICTUS,
- Smith, Proc. Linn. Soc.*
- vii. p. 8.

*Hab.* Salwatty.

2. MESOSTENUS ARROGANS.
- M. niger*
- ; antennis medio albis; thorace pedibusque albo variegatis; abdominis marginibus fasciis albis; alis hyalinis.

*Female.* Length 5 lines. Black; the face, mandibles, inner orbits of the eyes, and the sixth to the fourteenth joints of the antennæ white. The thorax finely punctured above; a spot on each side of the prothorax, the tegulæ and a spot beneath them, the scutellum, and the margin of the truncation of the metathorax white; the anterior and intermediate legs, a spot on the posterior coxæ above, the base of the trochanters, the outside of the tibiæ, and two basal joints of the tarsi white; the anterior and intermediate tarsi and the apical joints of the posterior pair fuscous; three white spots on each side of the thorax; the metathorax with two spines; the wings hyaline and iridescent; the posterior femora ferruginous. The apical margins of the segments of the abdomen white; the fifth segment has a widely interrupted fascia in the middle.

*Hab.* New Guinea.Gen. CRYPTUS, *Fabr.*

1. CRYPTUS TARSATUS,
- Smith, Proc. Linn. Soc.*
- vii. p. 7.

*Hab.* New Guinea.

2. CRYPTUS VOLATILIS,
- Smith, Proc. Linn. Soc.*
- vii. p. 7.

*Hab.* New Guinea.

3. CRYPTUS DUCALIS.
- C. ferrugineus*
- , mandibulis thoraceque lateribus nigris; abdominis angulis duabus nigris; alis flavo-hyalinis.

*Female.* Length 10 lines. Ferruginous; the antennæ pale ferruginous, with ten or eleven of the apical joints black; the mandibles bidentate, their tips black. An indistinct fuscous stripe on each side of the mesothorax above; the sides of the thorax and the posterior coxæ black; the wings yellow hyaline, the nervures ferruginous. Abdomen with two black rings; the first narrow and situated at the base of the second segment; the other broad, occupying the third, fourth, fifth, and base of the sixth segments; the seventh segment with two black spots at its base; the second segment also has two indistinct spots beyond the black band; the ovipositor the length of the abdomen.

*Hab.* Morty Island.Gen. PIMPLA, *Fabr.*

1. PIMPLA INSIDIATOR,
- Smith, Proc. Linn. Soc.*
- vii. p. 9.

*Hab.* New Guinea.

2. *PIMPLA BRACONOIDES*, *Smith, Proc. Linn. Soc.* iii. p. 172.

*Hab.* New Guinea.

3. *PIMPLA PENETRANS*, *Smith, Proc. Linn. Soc.* iv. p. 173.

*Hab.* Salwatty.

4. *PIMPLA INTEGRATOR*, *Smith, Proc. Linn. Soc.* v. p. 141.

*Hab.* Morty Island.

5. *PIMPLA FLAVICEPS*, *Smith, Proc. Linn. Soc.* v. p. 139.

*Hab.* Morty Island.

6. *PIMPLA OBNOXIA*. *P. flavo-ferruginea*; *antennis nigris*; *alis fuscis*, *basi flavo-hyalinis*.

*Female.* Length 6 lines. Reddish yellow, the legs and body beneath palest; the thorax shining above; the head pale testaceous; the antennæ black; the wings dark fuscous, their base yellow hyaline, with a subhyaline spot beneath the stigma. Abdomen closely punctured; the first segment with a deep lateral impression; the second, third, and fourth segments with a curved, deep, transverse depression; the ovipositor as long as the body.

*Hab.* Morty Island.

7. *PIMPLA DILIGENS*. *P. flavo-ferruginea*; *antennis fuscis*; *capite strigisque duabus mesothoracis pallide testaceis*; *alis hyalinis*.

*Female.* Length 6 lines. Reddish yellow; the antennæ fuscous, slightly reddish beneath; tips of the mandibles black; the head and two longitudinal stripes on the mesothorax pale testaceous; the wings hyaline and iridescent, the nervures black; the extreme base of the posterior tibiæ and the claws fuscous; the ovipositor black, half the length of the abdomen.

*Hab.* Morty Island.

8. *PIMPLA TRIFASCIATA*. *P. flava*; *antennis maculisque tribus mesothoracis nigris*; *abdomine tribus fasciis nigris*; *alis hyalinis*, *apice fuscis*.

*Female.* Length  $4\frac{1}{2}$  lines. Yellow; the scape behind, a spot enclosing the ocelli, and the flagellum black. Thorax shining, punctured on the disk, and having three subquadrate spots between the tegulæ; wings hyaline, with a narrow fuscous border at their apex, the nervures black; the claw-joint of the posterior tarsi and the extreme base of the tibiæ fuscous. Abdomen with three fasciæ and the aculeus black, the latter half the length of the abdomen.

*Hab.* New Guinea.

9. *PIMPLA NIGRICORNIS*. *P. ferruginea*; *antennis nigris*; *alis flavo-hyalinis*, *apice fuscis*.

*Male.* Length 9 lines. Ferruginous; the face and the scape of the antennæ yellow; the flagellum black; the thorax shining, the disk punctured; the mesothorax punctured; the antennæ black; the wings yellowish hyaline, the nervures dark fuscous; the anterior pair with

a dark fuscous cloud at their apex. The abdomen finely punctured and shining.

*Hab.* New Guinea.

10. *PIMPLA INTERCEPTOR*. *P. lutea*; antennis strigisque tribus mesothoracis nigris; alis hyalinis, apice fuscis.

*Female*. Length 7 lines. Luteous; the face, and extreme base of the abdomen pale yellow; a triangular spot behind the vertex, a smaller spot enclosing the antennæ uniting with the former, the longitudinal stripes on the mesothorax, the central one running to the scutellum, and the ovipositor black; the scape yellow in front; the legs stout; the wings hyaline, the nervures black, the apex of the anterior wings fuscous; the thorax smooth and shining above. Abdomen reddish yellow towards the apex, punctured, and slightly shining.

*Hab.* New Guinea.

Gen. *RHYSSA*, *Grav.*

1. *RHYSSA INSTIGATOR*. *R. capite flavo*, vertice nigro; thorace nigro, scabriuicula et flavo maculato; alis hyalinis, anticis fascia fusca ante apicem ornatis; abdomine nigro, segmentis primo et secundo dorso flavo maculatis, tertio, quarto et quinto maculis duabus flavis; tibiis tarsisque ferrugineis.

*Female*. Length 9 lines, of the ovipositor 13 lines. Head yellow, with the vertex, mandibles, and a minute spot on the front beneath the insertion of the antennæ black; antennæ wanting. Thorax black, rugose, with a transverse striation above; the collar, two stripes on the mesothorax, the scutellum and a spot on the middle of the metathorax, a larger spot on each side, an irregular spot beneath the wings, and a line on the sides of the coxæ yellow; the geniculations of the coxæ, trochanters, and femora, and the tibiæ and tarsi ferruginous; the claw-joint of the tarsi dark fuscous; the wings hyaline and iridescent, the anterior pair with a dark fuscous fascia crossing at the second submarginal cell. Abdomen black; a yellow spot in the middle of the first and second segments, the following segments with a yellow ovate spot on each side, each in succession becoming more oblong, the apical ones forming an oblong curved stripe; the margins of the segments beneath broadly yellow.

*Hab.* New Guinea.

Gen. *GLYPTA*, *Grav.*

1. *GLYPTA FRACTICORNIS*, *Smith, Proc. Linn. Soc. vii. p. 10.*

*Hab.* New Guinea.

Gen. *OPHION*, *Fabr.*

1. *OPHION STIMULATOR*. *O. rufescenti-flavus*, antennis abdomineque apice nigris; alis hyalinis, iridescentibus.

*Female*. Length 10 lines. Bright reddish yellow; the antennæ black, the ocelli placed in a black patch on the vertex. The metathorax rugose, with a series of divergent carinæ running from the centre and

passing down the sides; the wings hyaline and iridescent, the nervures black. The two first segments of the abdomen that form the petiole reddish yellow, the following black.

*Hab.* New Guinea.

Fam. BRACONIDÆ, *Westw.*

Gen. BRACON, *Fabr.*

1. BRACON PALLIFRONS, *Smith, Proc. Linn. Soc.* iii. p. 176.

*Hab.* Aru.

2. BRACON JACULATOR, *Smith, Proc. Linn. Soc.* v. p. 141.

*Hab.* Morty Island.

3. BRACON GRAVIDUS. *B. rufescenti-flavus*; capite luteo; alis brunneo-fuscis, macula hyalina sub stigmatē.

*Female.* Length 7 lines. Head luteous, the tips of the mandibles and the antennæ black; covered with a fine pale pubescence. The thorax pubescent, the disk very smooth and shining; the wings dark brown, with a minute hyaline spot beneath the stigma, the extreme base of the wings pale; the posterior tarsi fuscous. Abdomen slightly fuscous towards the apex, the fourth and fifth segments with a slightly elevated tubercle in the middle of their basal margins; the ovipositor half the length of the abdomen.

*Hab.* New Guinea.

4. BRACON FERAX. *B. niger*; thorace pedibusque ferrugineis; tibiis tarsisque posticis fuscis; alis obscure fuscis.

*Female.* Length  $4\frac{1}{2}$  lines. Head and abdomen shining black, the antennæ opaque black; the front below the insertion of the antennæ and the mandibles pale ferruginous; a black spot in the middle of the front. The thorax very smooth and shining; legs stout, and, as well as the thorax, ferruginous, with the posterior tibiæ, tarsi, and coxæ fuscous; wings dark fuscous. Abdomen with a white spot at the sides of the basal segment; ovipositor short, about half the length of the abdomen.

*Hab.* New Guinea.

5. BRACON FLAVICEPS. *B. capite flavo*, thorace pedibusque pallide ferrugineis; abdomine nitido, nigro; alis fuscis.

*Female.* Length  $4\frac{1}{2}$  lines. Head yellow, antennæ and eyes fuscous. Thorax and legs pale ferruginous, with the claws and pulvilli black; the mesothorax and scutellum very smooth and shining; wings fuscous, their extreme base pale ferruginous; three subhyaline spots beneath the stigma. Abdomen shining black, with a minute white spot on each side of the basal segment; the abdomen pale beneath, with a double row of black spots down the centre; the apical segment produced into an elevated spine; the ovipositor about the same length as the abdomen.

*Hab.* Salwatty.

Gen. AGATHIS, *Latr.*

1. AGATHIS ATROCEPHALUS,
- Smith, Proc. Linn. Soc. v. p. 142.*

*Hab.* Morty Island.

2. AGATHIS INTERDICTA.
- A. ferruginea*
- ; antennis tarsisque posticis nigris; alis nigro-fuscis, macula hyalina sub stigmatè.

*Female.* Length  $5\frac{1}{2}$  lines. Ferruginous; the flagellum black; the head, mesothorax, and abdomen smooth and shining; the wings dark fuscous, with an irregular hyaline spot beneath the stigma; the posterior tarsi and apex of the tibiæ black.*Hab.* New Guinea.

3. AGATHIS FENESTRATA.
- A. flavo-ferruginea*
- ; capite, abdominis apice tarsisque posticis nigris; alis nigro-fuscis, macula hyalina sub stigmatè.

*Female.* Length 5 lines. Reddish yellow; the head and antennæ black; the anterior margin of the clypeus, the labrum, and the mandibles pale reddish yellow. The wings dark fuscous, with an irregular hyaline spot beneath the stigma, the extreme base also pale; the posterior legs stout and pubescent, with the tarsi and tips of their femora black. The fourth and following segments of the abdomen black.*Hab.* New Guinea.Gen. CENOCÆLIUS, *Halid.*

1. CENOCÆLIUS INSIDIATOR,
- Smith, Proc. Linn. Soc. vii. p. 12.*

*Hab.* New Guinea.Gen. SPINARIA, *Brullé.*

1. SPINARIA SULCATA.
- S. rufo-flava*
- ; antennis tarsisque posticis nigris; alis fuscis, basi flavo-hyalinis.

*Female.* Length 4 lines. Reddish yellow; the antennæ, posterior tarsi, and extreme base of the tibiæ black; the wings dark fuscous, with their extreme base yellow hyaline; the nervures brown; the stigma large, with an irregular subhyaline spot beneath. The head and mesothorax shining; the metathorax with a short blunt spine on each side; the prothorax with the characteristic acute bent spine above. The abdomen longitudinally grooved or striated; the third and fourth segments armed laterally with a stout acute spine. (Pl. IV. fig. 9, ♀.)*Hab.* Gilolo.

This species is quite distinct from the two described by Brullé in the 'Histoire Naturelle des Insectes,' and from that described by Guérin in the 'Voyage de la Coquille' under the name of *Bracon spinator*: our species most closely resembles the latter, but differs in having the wings entirely dark, in having the abdomen deeply striated, and in not having a spine in the middle of the margins of the third and fourth segments of the abdomen.

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

1. FORMICA GIGAS, *Latr. Hist. Nat. Fourm.* p. 105.  
*Hab.* Sumatra.
2. FORMICA COMPRESSA, *Fabr. Syst. Piez.* p. 396.  
*Hab.* Sumatra.
3. FORMICA FESTINA, *Smith, Proc. Linn. Soc.* ii. p. 53.  
*Hab.* Sumatra.
4. FORMICA RUFIFRONS, *Smith, Proc. Linn. Soc.* v. p. 95.  
*Hab.* Morty Island, New Guinea, Salwatty.
5. FORMICA CAMELINA, *Smith, Proc. Linn. Soc.* ii. p. 57.  
*Hab.* Sumatra.
6. FORMICA COXALIS, *Smith, Proc. Linn. Soc.* iv. p. 136.  
*Hab.* New Guinea.
7. FORMICA QUADRICEPS, *Smith, Proc. Linn. Soc.* iv. p. 137.  
*Hab.* New Guinea.
8. FORMICA (MYRMECOPSIS) RESPICIENS. *F. nigra*, nitida; mandibulis, scapo, tibiis tarsisque pallide ferrugineis; prothorace abdomineque basi pallide flavis; oculis magnis.  
*Worker.* Length 3 lines. Black and shining; the head oblong, sides nearly parallel; the eyes very large, ovate, extending to the posterior angles of the head; the anterior portion of the clypeus, the mandibles, scape, tibiæ, tarsi, and tips of the femora pale ferruginous. Thorax compressed behind; the prothorax above, the first segment of the abdomen and the basal margin of the second pale yellow; the scale of the peduncle oblong, slightly rounded above. (Pl. IV. fig. 3, ♂.)  
*Hab.* New Guinea.

This remarkable Ant, of which a figure is given, will probably constitute the type of a new genus. The greatly enlarged eyes, placed backwards on the head, give it a different aspect from any species previously described. Unfortunately the only specimen received is in such a mutilated condition that I could not examine the parts of the mouth. Should an examination of more specimens prove my conjecture to be correct, I would propose the name *Myrmecopsis* for the genus.

Gen. POLYRHACHIS, *Smith*.

1. POLYRHACHIS SEXSPINOSUS, *Latr. Hist. Nat. Fourm.* p. 126.  
*Hab.* New Guinea.
2. POLYRHACHIS ITHONUS, *Smith, Proc. Linn. Soc.* v. p. 99.  
*Hab.* Salwatty; Morty Island.



3. POLYRHACHIS BIHAMATUS, *Drury, Ins.* ii. pl. 38.  
*Hab.* New Guinea; Sumatra.
4. POLYRHACHIS ACANTHA, *Smith, Proc. Linn. Soc.* v. p. 98.  
*Hab.* Salwatty; Morty Island.
5. POLYRHACHIS SERICATUS, *Guér. Voy. Coq. Zool.* ii. p. 203.  
*Hab.* Salwatty.
6. POLYRHACHIS CHALYBEUS, *Smith, Proc. Linn. Soc.* ii. p. 61.  
*Hab.* Sumatra.
7. POLYRHACHIS PANDARUS, *Smith, Proc. Linn. Soc.* ii. p. 62.  
*Hab.* Sumatra.
8. POLYRHACHIS EUDORA, *Smith, Proc. Linn. Soc.* v. p. 99.  
*Hab.* Sumatra.
9. POLYRHACHIS VILLIPES, *Smith, Proc. Linn. Soc.* ii. p. 61.  
*Hab.* Sumatra.
10. POLYRHACHIS BUBASTES, *Smith, Proc. Linn. Soc.* vii. p. 15.  
*Hab.* Morty Island.
11. POLYRHACHIS BELlicosus, *Smith, Proc. Linn. Soc.* iv. p. 142.  
*Hab.* Morty Island.
12. POLYRHACHIS MARGINATUS, *Smith, Proc. Linn. Soc.* iv. p. 139.  
*Hab.* Gilolo.
13. POLYRHACHIS DIVES, *Smith, Proc. Linn. Soc.* ii. p. 64.  
*Hab.* Sula.
14. POLYRHACHIS DIAPHANTUS, *Smith, Proc. Linn. Soc.* vi. p. 40.  
*Hab.* Sula.
15. POLYRHACHIS RUGIFRONS, *Smith, Proc. Linn. Soc.* v. p. 70.  
*Hab.* Salwatty.
16. POLYRHACHIS ATROPOS, *Smith, Proc. Linn. Soc.* v. p. 100.  
*Hab.* Gilolo.
17. POLYRHACHIS NEPTUNUS. *P. niger*; thorace elongato, supra deplanato, dentibus duobus parvis antice et postice armato; abdominis pedunculo trispinoso.  
*Worker.* Length  $2\frac{1}{4}$  lines. Black; the apical joint of the flagellum and the claw-joint of the tarsi rufo-testaceous; tips of the mandibles ferruginous. The head anteriorly striated, posteriorly shagreened as far as the insertion of the antennæ; the extreme base of the scape ferruginous. Thorax flat above; transverse in front, with the lateral angles produced into short acute spines; the sutures of the pro- and mesothorax deeply impressed; the disk shagreened; the metathorax with two short erect spines. Abdomen globose, smooth and shining; the node of the peduncle incrassate, and armed above with three long, erect, acute spines. (Pl. IV. fig. 2, ♂.)  
*Hab.* New Guinea.

Gen. ECHINOPLA, *Smith*.

1. ECHINOPLA MELANARCTOS, *Smith, Proc. Linn. Soc. ii. p. 79.*  
*Hab.* Sumatra.
2. ECHINOPLA STRIATA, *Smith, Proc. Linn. Soc. ii. p. 80.*  
*Hab.* Sumatra.

Gen. ŒCOPHYLLA, *Smith*.

1. ŒCOPHYLLA SMARAGDINA, *Smith, Proc. Linn. Soc. v. p. 101.*  
*Hab.* Morty Island; Salwatty.

Fam. PONERIDÆ, *Smith*.Gen. ODONTOMACHUS, *Latr.*

1. ODONTOMACHUS CEPHALOTES, *Smith, Proc. Linn. Soc. vii. p. 19.*  
*Hab.* Morty Island; Sula.
2. ODONTOMACHUS NIGRICEPS, *Smith, Proc. Linn. Soc. v. p. 103.*  
*Hab.* Dory.
3. ODONTOMACHUS ACICULATUS, *Smith, Proc. Linn. Soc. vii. p. 19.*  
*Hab.* New Guinea.

Gen. PONERA, *Latr.*

1. PONERA STRIATA, *Smith, Proc. Linn. Soc. v. p. 104.*  
*Hab.* Morty Island.
2. PONERA CUPREA, *Smith, Proc. Linn. Soc. v. p. 104.*  
*Hab.* New Guinea; Sula.
3. PONERA SIMILLIMA, *Smith, Proc. Linn. Soc. v. p. 104.*  
*Hab.* New Guinea.
4. PONERA 4-DENTATA, *Smith, Proc. Linn. Soc. iv. p. 143.*  
*Hab.* Sula.
5. PONERA FEROX. *P. nigra*; capite elongato, aciculato; thorace abdomineque lævibus, nitidis; flagello tarsisque pallide ferrugineis.  
*Worker.* Length  $4\frac{1}{2}$  lines. Shining black; the head longitudinally aciculate; the prothorax with a few fine striæ anteriorly; the sides of the thorax with a few irregular striæ, otherwise smooth and shining; the node of the peduncle subquadrate and incrassate, and, as well as the abdomen, smooth and shining; the apical segment ferruginous. The mandibles, extreme base and apex of the scape, the flagellum, except the basal joint, and the tarsi and articulations of the legs ferruginous; the calcaria pale testaceous.  
*Hab.* Salwatty.

This species is very like *P. simillima*; but it is a larger insect; and the thorax is smooth and shining, in *P. simillima* it is striated and opaque.

Gen. *PACHYCONDYLA*, *Smith*.

1. *PACHYCONDYLA MELANCHOLICA*. *P. nigra*, opaca; antennis, mandibulis, tibiis tarsisque ferrugineis.

*Worker*. Length 3 lines. Opaque black, the second and following segments of the abdomen finely shagreened; the head oblong; the eyes small, not prominent, and situated near the base of the mandibles; the sides curved, the vertex transverse; the sides of the thorax nearly parallel, the metathorax obliquely truncate; the node of the peduncle rounded anteriorly, truncate posteriorly, and filling the base of the first abdominal segment, but not quite so wide, rugose above. The mandibles, antennæ, tibiæ, tarsi, and knees ferruginous.

*Hab.* Morty Island.

This species belongs to the genus *Pachycondyla* of my Catalogue, the insects included in which have the body almost parallel, as well as the node of the peduncle, and the calcaria pectinate. Some continental authors have sunk this well-defined genus.

Gen. *ECTATOMMA*, *Smith*.

1. *ECTATOMMA RUGOSA*, *Smith*, *Proc. Linn. Soc.* iv. p. 143.

*Hab.* Sula.

Gen. *ANOMMA*, *Shuck*.

1. *ANOMMA ERRATICA*. *A. nigro-ferruginea*; capite antice et abdomine basi pallide ferrugineis; flagello pedibusque ferrugineis.

*Worker*. Length 2 lines. Obscurely ferruginous; the anterior portion of the head, the mandibles, apex of the scape, and the flagellum pale ferruginous; the scape black; the mandibles with a single tooth inside, their apex curved and very acute. Thorax compressed; the legs ferruginous, the tibiæ and tarsi palest; the legs elongate. Abdomen ovate, the node of the peduncle and the first segment paler than the following segments. The insect impunctate, very smooth and shining.

*Hab.* New Guinea.

This species is distinguished from the three species of the genus with which I am acquainted by the following particulars: the antennæ are proportionally longer, the scape black, and the legs considerably more elongate.

The discovery of this genus in the Eastern Archipelago is, geographically, a circumstance of considerable interest, all the species previously known being African. Several hymenopterists have adopted the supposed affinity between *Anomma* and *Dorylus*, regarding the former as worker or neuter forms of the latter. This affinity was first suggested by Dr. Savage, but I am not acquainted with a single circumstance even apparently confirmatory of such a supposition. The genus *Dorylus* is very abundant in

India, but I have not seen a single *Anomma* from that country. I am much more inclined to suspect an affinity with *Typhlopone*, which I have frequently observed with *Dorylus* in collections from India, and also from Borneo.

Fam. MYRMICIDÆ, *Smith*.

Gen. MYRMICA, *Latr.*

1. MYRMICA PONEROIDES, *Smith, Proc. Linn. Soc. v. p. 107.*

*Hab.* Morty Island; Sula.

2. MYRMICA QUADRISPINOSA. *M. nigro-fusca*; thorace spinis duabus antice et postice armato.

*Worker.* Length 1 line. Dark brown-black, smooth and shining; the mandibles, antennæ, and tarsi pale ferruginous; a longitudinal carina runs from the insertion of each antenna halfway towards the posterior margin of the vertex; ocelli obsolete; eyes small, situated midway at the sides of the head; the head is of the same form as in *Myrmica rubra*; the club of the antennæ 3-jointed, the funiculus 8-jointed. Abdomen very finely striated longitudinally at the base; the peduncle subelongate, the first node conical, the second globose.

*Hab.* Salwatty. (Pl. IV. fig. 6, ♂.)

It will be seen from the above description that the insect has several characters in common with those of the genus *Myrmica*, in which I have placed it; but the discovery of the other sexes and an examination of the oral organs may render it necessary to separate it from the genus in which it is provisionally placed.

3. MYRMICA MALIGNA. *M. rufo-nigra*; clypeo, antennis pedibusque ferrugineis; capite et thorace dorso longitudinaliter striatis.

*Female.* Length 5 lines. Obscurely rufous, the head anteriorly and the antennæ bright ferruginous; the head longitudinally and strongly striated above, delicately so beneath. Thorax oblong-ovate; the mesothorax longitudinally striated above, with a smooth shining space down the middle and a narrower one on each side; the prothorax striated, as well as the sides of the metathorax, the latter with a delicate transverse striation above; the scutellum smooth and shining. Abdomen oblong-ovate, smooth and shining, with a few erect glittering white setæ at the apex; the nodes of the peduncle smooth and shining.

*Hab.* Morty Island.

This is probably the female of *M. aspersa*.

4. MYRMICA ASPERSA. *M. rufo-fulva*; antennis apice pedibusque pallide ferrugineis; capite thoraceque scabrosis; metathorace bispinoso; abdomine ovato, petioli nodis sublævibus.

*Worker.* Length 2 lines. Varying in brightness of colouring, rufo-

fulvous or dark ferruginous, with intermediate shade of colouring. Head and thorax very coarsely longitudinally rugose, the head deeply striated; mandibles smooth and pale ferruginous; the metathorax with two long, divergent, acute spines; the articulations of the legs and the tarsi pale ferruginous. The abdomen and nodes of the peduncle smooth and shining.

*Hab.* Morty Island.

5. *MYRMICA DILIGENS*. *M.* capite abdomineque nigris; antennis, mandibulis, thorace pedibusque pallide ferrugineis; metathorace spinis longis acutis armato.

*Worker.* Length 2 lines. Head black, smooth and shining, anteriorly obscurely ferruginous; a few abbreviated longitudinal striæ above the clypeus; the mandibles pale ferruginous; the antennæ ferruginous, palest towards their base. The thorax, legs, and first node of the abdomen pale ferruginous; the thorax coarsely rugose; the metathorax armed with two long acute spines, extending to the second node of the abdomen. Abdomen ovate, very smooth and shining.

*Hab.* New Guinea.

#### Gen. *PODOMYRMA*, *Smith*.

1. *PODOMYRMA SYLVICOLA*, *Smith, Proc. Linn. Soc. v. p. 110.*

*Hab.* Morty Island.

2. *PODOMYRMA BASALIS*, *Smith, Proc. Linn. Soc. iv. p. 147.*

*Hab.* New Guinea.

#### Gen. *PSEUDOMYRMA*, *Guér.*

1. *PSEUDOMYRMA RUFONIGRA*, *Jerdon, Madr. Journ. Lit. and Sci. iii. p. 53.*

*Hab.* Sumatra.

2. *PSEUDOMYRMA CARBONARIA*, *Smith, Proc. Linn. Soc. vii. p. 20.*

*Hab.* Morty Island.

#### Gen. *MYRMICARIA*, *Saund.*

1. *MYRMICARIA (HEPTACONDYLUS) RUGOSUS*, *Smith, Proc. Linn. Soc. v. p. 110.*

*Hab.* New Guinea.

I have received all the sexes of a species of *Myrmicaria* from Port Natal: the female constituted my own genus *Physatta*; the workers formed my genus *Heptacondylus*; both must now sink, and be included in Mr. Saunders's genus *Myrmicaria*, undoubtedly the male of *Physatta*. The male has the normal number of joints in the antennæ, namely thirteen, whilst the female, as well as the workers, have only seven.

Gen. CREMATOGASTER, *Lund.*

1. CREMATOGASTER POLITUS. *C. capite, thorace abdomineque basi castaneo-rufis; pedibus pallide rufo-testaceis.*

*Worker.* Length  $1\frac{1}{4}$  line. Head, thorax, and base of the abdomen reddish chestnut; very smooth and shining. Head large, wider than the abdomen; eyes small and, as well as the tips of the mandibles, black. Thorax deeply strangled between the meso- and meta-thorax, the latter armed with two short, stout, acute spines; the legs pale rufo-testaceous. The abdomen heart-shaped, black, with the base and nodes of the peduncle reddish chestnut.

*Hab.* New Guinea.

2. CREMATOGASTER IRIDIPENNIS. *C. pallide castaneo-rufus, lævis nitidusque; alis hyalinis, iridescentibus.*

*Female.* Length  $2\frac{1}{4}$  lines. Pale chestnut-red, very smooth and highly polished. Head glassy smooth, the anterior part of a deeper red than the vertex; the ocelli situated in a darker stain; the mandibles with five black teeth. Thorax ovate, the metathorax without spines; the wings colourless and brilliantly iridescent; the legs paler than the thorax. Abdomen oblong-ovate, the margins of the segments deeply depressed; the basal margins of the segments pale.

*Hab.* New Guinea.

3. CREMATOGASTER TARSATUS. *C. aterrimus, lævis et nitidus; antennis pedibusque rufo-piceis, tarsis albis.*

*Worker.* Length  $1\frac{1}{4}$  line. Shining black, impunctate; the anterior portion of the head and the mandibles obscurely ferruginous; the antennæ and legs rufo-piceous; the tarsi white; the anterior angles of the prothorax acute; the metathorax armed with two short, erect, acute spines. The abdomen rather wider than the head, its extreme apex pale testaceous.

*Hab.* Morty Island.

Fam. ATTIDÆ, *Smith.*Gen. PHEIDOLE, *Westw.*

1. PHEIDOLE MEGACEPHALA, *Smith, Proc. Linn. Soc. v. p. 112.*

*Hab.* Sula.

2. PHEIDOLE HOSPES. *P. rufo-ferruginea; capite maximo, in medio sulcato, longitudinaliter striato; antennis pedibusque pallide ferrugineis; abdomine nigro.*

*Worker (major).* Length  $2\frac{1}{4}$  lines. Head and thorax rufo-ferruginous; the head oblong-ovate, deeply notched behind, its anterior margin truncate; longitudinally striated, and having a longitudinal carina running from each antenna towards the vertex; the mandibles smooth and shining, their inner edge edentate; the antennæ and legs pale ferruginous; the metathorax with two minute sharp spines; the second node of the abdomen, as well as the abdomen itself, black.

*Worker (minor).* Length  $1\frac{1}{4}$  line. The general colouring the same as in the worker major, but rather paler; and of a very different form: the head of the ordinary size, oblong-ovate, narrowed behind the eyes abruptly towards the prothorax, which forms a neck; the eyes are prominent, and situated midway at the side of the head (in the worker major they are about one-third from the anterior margin); the antennæ and legs elongate; the metathoracic spines very minute.

*Hab.* New Guinea.

#### Gen. PHEIDOLACANTHINUS, *Smith.*

Head large in the worker major; mandibles very stout, their inner edge sharp and smooth, not toothed; the antennæ 11-jointed, the club consisting of three joints; eyes minute, placed a little beyond the middle at the sides of the head. Thorax oblong, armed on each side in front with a long stout spine, acute at its apex; the metathorax with two shorter spines. Abdomen ovate; the peduncle with two nodes.

The above characters are drawn from a unique example of a worker, and are necessarily incomplete, but, with the aid of a figure of the insect, will serve to discriminate the genus. It is very like a species of *Pheidole*, but has one joint less in the antennæ; and the armed prothorax indicates, I think, more than a specific distinction. The capture of the other sexes will, I expect, justify its separation as a genus.

1. PHEIDOLACANTHINUS ARMATUS. *P. rufo-ferrugineus*; capite maximo, in medio sulcato et striato; thorace spinis duabus acutis antice et postice armato.

*Worker.* Length 2 lines. Bright rufo-ferruginous; the abdomen very obscurely ferruginous, nearly black. Head very large, deeply striated longitudinally; the mandibles smooth and shining, their inner edge black and edentate. Thorax armed with two very stout, long spines in front, and two smaller ones on the metathorax; the femora incrassate in the middle; the tarsi slender and pale testaceous. Abdomen delicately aciculate at the extreme base; the first node of the peduncle compressed, the second incrassate and transverse. (Pl. IV. fig. 8, ♂.)

*Hab.* Salwatty.

#### Gen. SOLENOPSIS, *Westw.*

1. SOLENOPSIS LÆVIS. *S. rufo-testacea, lævis, tota nitidissima, nuda*; metathoracis spinis minutissimis.

*Worker.* Length  $2\frac{1}{4}$  lines. Rufo-testaceous, smooth, shining, and impunctate; the inner margin of the mandibles with four black teeth; the head wider than the abdomen; the eyes very minute, situated midway at the sides of the head. Thorax rounded anteriorly; the

metathorax with two minute spines. Abdomen ovate; the nodes oblong-ovate, the first pedunculate.

*Hab.* Morty Island.

Subfam. CRYPTO CERIDÆ, *Smith.*

Gen. CATAULACUS, *Smith.*

1. CATAULACUS SETOSUS, *Smith, Proc. Linn. Soc. v. p. 114 & vii. p. 24.*

*Hab.* Morty Island.

2. CATAULACUS HISPIDULUS. *C. niger*, hispidus; capite thorace et abdomine rugosis; thorace spinis duabus validis postice armato.

*Worker.* Length  $2\frac{3}{4}$  lines. Black and subopaque; thinly sprinkled with short erect white setæ; the head, thorax, legs, and nodes of the abdomen roughly sculptured, the face longitudinally so, the lateral posterior angles of the head with deep coarse punctures or fossulets which are more or less confluent; the sculpture of the thorax above and of the nodes of the abdomen is similar; the legs are coarsely roughened; the abdomen is much more finely sculptured and is somewhat longitudinally aciculate, the base is coarser than the disk. The anterior tibiæ and tarsi and the claw-joint of the intermediate and posterior pair ferruginous. The head transverse and widest behind, the sides being curved, the posterior angles acute. The thorax narrowed behind, transverse in front, the sides curved, terminating posteriorly in two short, broad, acute spines. Abdomen ovate. (Pl. IV. fig. 7, ♀.)

*Hab.* Sumatra.

Gen. CEPHALOXYS, *Smith.*

Head subtriangular in the ♀, deeply emarginate behind; eyes round, concealed beneath the grooves at the sides of the head; ocelli three, placed in a triangle on the vertex; the antennæ clavate, received into longitudinal grooves at the sides of the head above the eyes, the flagellum five-jointed; the mandibles subtriangular, multidentate. Thorax oblong-ovate, rounded anteriorly, posteriorly emarginate and bidentate; legs moderately long and stout, the anterior tibiæ armed with a stout spine at their apex, the intermediate and posterior pair unarmed. Abdomen ovate, the peduncle with two nodes.

The unique specimen from which the above characters are drawn is a female; unfortunately the wings are wanting. The insect somewhat resembles the *Ceratobasis singularis*, which I characterized in the first volume of the 'Journal of Entomology;' but from that remarkable genus it is separated by its six-jointed antennæ, besides other characters; it is one of the most remarkable insects with which I am acquainted, and it is the only



species which I have seen that has the eyes situated beneath the head.

1. *CEPHALOXYS CAPITATA*. *C. capite*, thorace pedibusque ferrugineis, abdomine fusco-brunneo.

*Female*. Length  $1\frac{1}{2}$  line. Head, thorax, and legs ferruginous; the head heart-shaped; the mandibles porrect, continued in a line with the sides of the head, terminating in a point; the scape compressed; a black spot on the vertex, in which the ocelli are placed in a triangle. Thorax subovate, the metathorax with two short spines; the margins of the scutellum dusky; the head and thorax finely rugose and sprinkled with minute white scales or setæ. Abdomen smooth and shining, fuscous red or dark chestnut, with the base and apex pale; the nodes of the abdomen finely aciculate, and a few abbreviated striæ at the extreme base of the abdomen. (Pl. IV. fig. 5, ♀.)

*Hab.* New Guinea.

#### Fam. THYNNIDÆ, *Erichs.*

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

1. *THYNNUS LÆVISSIMUS*. *T. nigro-piceus*, antennis pedibusque ferrugineis; abdominis segmento secundo striis quatuor transversis.

*Female*. Length 3 lines. Dark brown, nearly black, smooth and shining; the antennæ, mandibles, and legs ferruginous; the eyes lateral, touching the base of the mandibles. The mesothorax oblong-quadrate, slightly concave, with a central longitudinal carina; the metathorax obliquely truncate. Abdomen oblong, smooth and shining; the margins of the segments narrowly pale testaceous; the second segment with four deep transverse striæ; the apical segment ferruginous at the apex.

*Hab.* New Guinea.

2. *THYNNUS ATRATUS*. *T. niger*, capite thoraceque rude punctatis; abdomine utrinque maculis flavis, segmento secundo transversim striato. (*Fem.*)

*Female*. Length  $6\frac{1}{4}$  lines. Black; the mandibles ferruginous in the middle; the legs obscurely rufo-testaceous, brightest beneath, the anterior and intermediate tibiæ pale ferruginous beneath; a yellow spot on each side of the basal segment of a suboval form, pointed within; two smaller ovate yellow spots on the third segment, and also a minute yellow spot at the extreme lateral margins of the third and fourth segments. The scape of the antennæ very slender at the base, thickened and bent at the apex, and produced within into a sharp angle; the thorax transverse anteriorly, the margin slightly curved or emarginate; coarsely punctured above. The mandibles, legs, and the margins of the apical segments of the abdomen

with long glittering pale hairs; the second segment of the abdomen with two ovate yellow spots beneath.

*Hab.* Gilolo.

The male of this species is described in the sixth volume of the *Proceedings*, p. 21.

3. *THYNNUS* (*AGRIOMYIA*) *ABDUCTOR*. *T. niger*, capite thoraceque flavo variegatis, abdominis segmentis maculis duabus transversis flavis, alis hyalinis.

*Male.* Length  $6\frac{1}{2}$  lines. Black; head and thorax very closely punctured, subopaque; abdomen shining, with delicate punctures at the base of the segments, sparing towards their apical margins. The sides of the clypeus bordered with yellow, and a V-shaped yellow mark between the antennæ; the anterior and posterior margins of the prothorax, the tegulæ, an ovate spot on the scutellum, the postscutellum, and a narrow line running from it to the base of the posterior wings yellow; a yellow oblong and also an ovate spot beneath the wings, and another on each side of the metathorax situated posteriorly; all the tibiæ and tarsi and the intermediate and posterior femora ferruginous; the tibiæ, tarsi, and posterior femora more or less fuscous above; the wings hyaline, the nervures black. Abdomen, all the segments with a narrow line on each side near their apical margins; the lines sometimes obsolete on the sixth segment.

*Hab.* Salwatty and New Guinea.

This species closely resembles *T. vagans*, but is at once distinguished by narrow yellow lines, interrupted in the middle, on the apical margins of the segments, and the margins are also much more depressed.

#### Gen. *ÆLURUS*, *Klug.*

1. *ÆLURUS FRAGILIS*. *Æ.* capite thoraceque nigris; abdomine, pedibus antennisque pallide ferrugineis.

*Male.* Length  $4\frac{1}{2}$  lines. Head and thorax black, and clothed with silvery pubescence, that on the face and clypeus very fine, dense, and glittering; the cheeks with a long fringe of silvery hairs; the mandibles and antennæ pale ferruginous; a yellow spot on the clypeus, and a minute one at the base of each antenna. The anterior margin of the thorax, the tegulæ, and the postscutellum yellow; the wings hyaline and iridescent, the nervures pale ferruginous. The legs and abdomen ferruginous.

*Hab.* Morty Island.

This elegant species somewhat resembles the *Æ. abdominalis* of Guérin, but its red antennæ and the silvery pubescence on the head and abdomen will at once distinguish it.

Gen. ENICTUS, *Shuck.*

1. ENICTUS OBSCURUS. *E. capite thoraceque nigris, nitidis; abdomine pedibusque obscure ferrugineis.*

*Male.* Length 3 lines. Head and thorax shining black, thinly covered with a short silky white down; the antennæ rufo-testaceous; the mandibles long, curved, shining and testaceous at the apex, broadest at the base. Thorax, the profile subquadrate; the metathorax rounded behind; the legs obscurely ferruginous, with their geniculations and the tarsi pale testaceous. Abdomen oblong, obscurely ferruginous, finely and closely punctured, and thinly covered with pale down; the posterior margin of the apical segment rounded; the peduncle narrower than the following segment, concave above; beneath rufo-testaceous.

*Hab.* New Guinea.

This species is very distinct from *E. ambiguus*, the type of the genus, and which is in my possession; the following characteristics distinguish it: it is smaller, of a darker colour, and less pubescent; the abdomen is punctured, and the peduncle is not wider than the following segment.

Gen. SCLERODERMA, *Latr.*

1. SCLERODERMA PARASITICA. *S. rufo-picea, lævis, nitida; abdomine cingulato.*

*Female.* Length 2 lines. Rufo-piceous, smooth and shining; the anterior part of the head, the antennæ, and legs pale rufo-testaceous; the posterior margins of the segments of the abdomen dark rufo-piceous.

*Hab.* Salwatty.

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

1. MUTILLA NIGRA, *Smith, Proc. Linn. Soc. iv. p. 151.*

*Hab.* Salwatty.

2. MUTILLA MIRABILIS, *Smith, Proc. Linn. Soc. vii. p. 24.*

*Hab.* New Guinea.

3. MUTILLA MANIFESTA, *Smith, Proc. Linn. Soc. iv. p. 150.*

*Hab.* New Guinea.

4. MUTILLA MEROPS, *Smith, Proc. Linn. Soc. v. p. 115.*

*Hab.* Morty Island.

5. MUTILLA AGILIS. *M. capite thoraceque rude punctatis; antennis, mandibulis pedibusque ferrugineis; abdomine albo cingulato; alis subhyalinis, unifasciatis fuscis.*

*Male.* Length  $3\frac{1}{4}$  lines. Black; the antennæ, mandibles, and legs ferruginous, the coxæ black; the posterior tibiæ, except the base,

rufo-fuscous; the metathorax with large coarse subconfluent punctures; the wings subhyaline, with a broad fuscous fascia crossing at the stigma. Abdomen shining, with a long thin black pubescence, most dense towards the apex; the second segment with a fascia or fringe of white pubescence.

*Hab.* New Guinea.

6. *MUTILLA FLUCTUATA*. *M. nigra*; capite thoraceque rude punctatis et pubescentibus; abdomine lævigato, nitido; alis subhyalinis; prothorace pube argentata vestito.

*Male.* Length 4 lines. Black; head and thorax coarsely punctured, the punctures on the metathorax very large and subconfluent; a deep longitudinal channel runs from each posterior stemma halfway towards the margin of the vertex; the head, sides of the thorax, and legs have a scattered, long, glittering silvery pubescence; the clypeus and prothorax are densely clothed with short silvery pubescence; the wings subhyaline, iridescent, and their apical margins clouded; the tegulæ smooth and shining, with their posterior half silvery; the tibiæ have their calcaria white. Abdomen smooth and shining, with scattered fine punctures, the posterior margins of the segments with long silvery hairs; the apical segment coarsely punctured and fringed with black hairs.

*Hab.* Morty Island.

Tribe *FOSSORES*, Latr.

Fam. *SCOLIADÆ*, Leach.

Gen. *TIPHIA*, Fabr.

1. *TIPHIA FLAVIPENNIS*, Smith, *Proc. Linn. Soc.* ii. p. 91.

*Hab.* Gilolo; Morty Island.

Gen. *SCOLIA*, Fabr.

*DIV. 1. The anterior wings with two submarginal cells and one recurrent nervure.*

1. *SCOLIA FULGIDIPENNIS*, Smith, *Proc. Linn. Soc.* iv. p. 152.

*Hab.* Salwatty.

2. *SCOLIA NITIDA*, Smith, *Proc. Linn. Soc.* iv. p. 152.

*Hab.* New Guinea.

3. *SCOLIA QUADRICEPS*, Smith, *Proc. Linn. Soc.* iv. p. 153.

*Hab.* New Guinea.

4. *SCOLIA CAPTIVA*, Smith, *Proc. Linn. Soc.* vi. p. 52.

*Hab.* Sumatra.

*DIV. 2. The anterior wings with two submarginal cells and three recurrent nervures.*

5. *SCOLIA AUREICOLLIS*, St. Farg. *Hym.* iii. p. 499.

*Hab.* Sula.

6. *SCOLIA AURULENTA*, *Smith, Cat. Form.* p. 102.

*Hab.* Sula.

7. *SCOLIA ANNULATA*, *Fabr. Syst. Piez.* p. 234.

*Hab.* Salwatty.

8. *SCOLIA GROSSA*, *Fabr. Syst. Piez.* p. 232.

*Hab.* Sumatra.

DIV. 3. *The anterior wings with three submarginal cells and one recurrent nervure.*

9. *SCOLIA MOROSA*, *Smith, Proc. Linn. Soc. v.* p. 118.

*Hab.* Sula.

10. *SCOLIA PROCERA*, *Fabr. Syst. Piez.* p. 241.

*Hab.* Sumatra.

11. *SCOLIA DIMIDIATA*, *Guér. Voy. Coq. Zool.* ii. p. 247.

*Hab.* Sula; Sumatra.

12. *SCOLIA CINCTA*, *Smith, Proc. Linn. Soc.* ii. p. 89.

*Hab.* Sumatra.

DIV. 4. *The anterior wings with three submarginal cells and two recurrent nervures.*

13. *SCOLIA FULVA*, *Gray, Cuv. Anim. Kingd. (Griffiths)* p. 516. pl. 71. f. 1 ♀.

*Hab.* Morty Island.

14. *SCOLIA ARROGANS*. *S. nigra*, clypeo flavo, alis hyalinis; abdomine prismatico, flavo quinque-fasciato, secundo et tertio interruptis. *Male*. Length 6 lines. Black; the clypeus yellow; the mandibles rufopiceous at their apex. The prothorax before the wings, a spot beneath them, the scutellum, the postscutellum, and a broad stripe on each side of the metathorax yellow; the head, thorax, and legs thinly sprinkled with cinereous pubescence; the anterior tibiæ yellow in front; the wings hyaline, the superior pair fulvous at their anterior margin, the nervures rufo-testaceous. Abdomen, the first and four following segments margined with yellow, the first three broadly so, with the yellow fasciæ deeply emarginate in the middle, the second and third being slightly interrupted; entirely black beneath; the abdomen is pubescent, most densely so at the apex, where it is slightly fulvous; the apical segment trispinose, coarsely punctured at the base and shining.

*Hab.* Sumatra.

Fam. POMPILIDÆ, *Leach*.

Gen. POMPILUS, *Fabr*.

1. *POMPILUS ANALIS*, *Fabr. Syst. Piez.* p. 219.

*Hab.* Morty Island.

2. *POMPILUS JUCUNDUS*, *Smith, Proc. Linn. Soc.* vii. p. 29.

*Hab.* Morty Island.

3. *POMPILUS UNIFASCIATUS*, *Smith, Cat. Foss. Hym.* p. 145.

*Hab.* Sumatra.

4. *POMPILUS COGNATUS*. *P. niger*, facie utrinque ad marginem internum oculorum, prothoracis margine postico linea albida signato; tibiis posticis basi albis.

*Male.* Length  $3\frac{1}{2}$  lines. Black, covered with cinereous downy pile; the mandibles black at the base, white in the middle, and ferruginous at the apex; the palpi pale testaceous. The posterior margin of the prothorax bordered with white; the wings hyaline and iridescent, tips of the anterior pair fuscous; the base of the posterior tibiæ above and the calcaria white.

*Hab.* Morty Island.

5. *POMPILUS ELATUS*. *P. niger*; pube argentato-alba variegata; alis fuscis.

*Female.* Length 5 lines. Black, smooth and shining; the face and cheeks clothed with silvery pubescence. The prothorax laterally, the posterior angles of the metathorax, a spot behind the wings, the coxæ, and the sides of the thorax adorned with bright, changeable, silvery pubescence; the posterior tibiæ and tarsi silvery; wings fuscous, the posterior pair palest. The abdomen adorned with silvery spots at the sides, which are more or less refulgent in different positions; beneath, the segments have lateral silvery spots.

*Hab.* Morty Island.

#### Gen. *PRIOCNEMIS*, *Schiödde*.

1. *PRIOCNEMIS FLAVIPENNIS*, *Smith, Proc. Linn. Soc.* v. p. 79.

*Hab.* New Guinea.

2. *PRIOCNEMIS PULCHERRIMUS*, *Smith, Proc. Linn. Soc.* iv. p. 156.

*Hab.* Salwatty.

3. *PRIOCNEMIS FERVIDUS*, *Smith, Proc. Linn. Soc.* iii. p. 156.

*Hab.* New Guinea.

#### Gen. *AGENIA*, *Schiödde*.

1. *AGENIA AMALTHEA*, *Smith, Proc. Linn. Soc.* iii. p. 156.

*Hab.* Salwatty.

2. *AGENIA NUMERIA*, *Smith, Proc. Linn. Soc.* vii. p. 31.

*Hab.* Morty Island.

3. *AGENIA PANDORA*. *A. ferruginea*, capite abdomineque apice nigris; alis anticis fascia transversa fusca.

*Female.* Length 5 lines. Head black and shining, the face and clypeus covered with silvery pile; the antennæ, anterior margin of the clypeus,

palpi, and mandibles ferruginous, the tips of the latter black; the antennæ slightly fuscous above. Thorax and legs ferruginous; the metathorax smooth and convex; the claw-joint of the tarsi fuscous; wings hyaline, the nervures pale ferruginous; the anterior wings with a fuscous fascia the width of the second and third submarginal cells, which it occupies, but does not quite cross the wing, terminating at the inferior margin of the third discoidal cell. Abdomen petiolated, the third and following segments black; the extreme apex ferruginous. The male differs in having the disk of the mesothorax black.

*Hab.* New Guinea.

Gen. *MACROMERIS*, *St. Farg.*

1. *MACROMERIS VIOLACEA*, *St. Farg. Hym.* iii. p. 464.

*Hab.* Sumatra.

2. *MACROMERIS ARGENTIFRONS*, *Smith, Proc. Linn. Soc.* ii. p. 97.

*Hab.* Sumatra.

Gen. *MYGNIMIA*, *Smith.*

1. *MYGNIMIA FERRUGINEA*, *Smith, Proc. Linn. Soc.* v. p. 121.

*Hab.* New Guinea.

2. *MYGNIMIA FERVIDA*, *Smith, Proc. Linn. Soc.* v. p. 82.

*Hab.* New Guinea.

3. *MYGNIMIA FLAVA*, *Fabr. Syst. Piez.* p. 197.

*Hab.* Sumatra.

4. *MYGNIMIA DUCALIS*, *Smith, Proc. Linn. Soc.* ii. p. 98.

*Hab.* Sumatra.

5. *MYGNIMIA ANTHRACINA*, *Smith, Cat. Foss. Hym.* p. 183.

*Hab.* Sumatra.

6. *MYGNIMIA LACÆNA*, *Smith, Proc. Linn. Soc.* v. p. 121.

*Hab.* Sumatra.

Fam. *SPHEGIDÆ*, *Leach.*

Gen. *SPHEX*, *Fabr.*

1. *SPHEX NIGRIPES*, *Smith, Cat. Foss. Hym.* p. 254.

*Hab.* Sumatra.

2. *SPHEX SERICEA*, *Fabr. Syst. Piez.* p. 211.

*Hab.* Sumatra.

3. *SPHEX ARGENTATA*, *Dahlb. Hym. Europ.* i. p. 25.

*Hab.* New Guinea; Morty Island.

4. *SPHEX DIABOLICA*, *Smith, Proc. Linn. Soc.* ii. p. 100.

*Hab.* New Guinea.

5. *SPHEX FERRUGINEA*, *St. Farg. Hym.* iii. p. 348.

*Hab.* Salwatty.

6. *SPHEX TYRANNICA*, *Smith, Proc. Linn. Soc. v. p. 122.*  
*Hab.* Sumatra; Sula.

Gen. *AMPULEX*, *Jurine.*

1. *AMPULEX SMARAGDINA*, *Smith, Proc. Linn. Soc. ii. p. 99.*  
*Hab.* Sumatra.

Gen. *PELOPÆUS*, *Latr.*

1. *PELOPÆUS MURARIUS*, *Smith, Proc. Linn. Soc. vii. p. 34 (♂?).*  
*Hab.* New Guinea.

Fam. *LARRIDÆ*, *Leach.*

Gen. *LARRADA*, *Smith.*

1. *LARRADA MODESTA*, *Smith, Proc. Linn. Soc. iii. p. 159.*  
*Hab.* Salwatty.

2. *LARRADA MANSUETA*. *L. nigerrima*; capite abdomineque nitidis; thorace opaco; scapo, tibiis tarsisque ferrugineis; alis hyalinis, anticis fascia fusca.

*Female.* Length 7 lines. Black; the head shining and closely punctured; the clypeus covered with silvery pile; the scape, apex of the joints of the antennæ, the anterior margin of the clypeus, and the mandibles ferruginous; the palpi pale testaceous. Thorax opaque; the metathorax finely rugose, and clothed with silvery pile at the apex; the sides, beneath, the coxæ, and femora with a thin changeable silvery pile; the articulations of the coxæ, trochanters, and femora, the tibiæ and tarsi ferruginous; the posterior femora dusky above; wings hyaline, the anterior pair with a broad fuscous fascia. Abdomen smooth and shining, longer than the head and thorax; the extreme lateral margins of the segments ornamented with spots of changeable silvery pile.

*Hab.* New Guinea.

3. *LARRADA MENDAX*. *L. nigerrima*; mandibulis pedibusque ferrugineis; metathorace rugoso; alis subhyalinis.

*Female.* Length 5 lines. Black; mandibles and legs ferruginous, with the coxæ black. The head, thorax, and abdomen thinly covered with a short grey silky pubescence; the clypeus covered with silvery pile, as well as the lower part of the cheeks. The thorax closely punctured above; the metathorax rugose, having a few coarse radiating grooves at the base, and an abbreviated carina in the centre; the wings subhyaline, the apex of the anterior pair slightly fuscous; the intermediate and posterior tarsi fuscous above, with the tips of the joints ferruginous. The abdomen smooth and shining.

*Hab.* Gilolo.



Gen. LARRA, *Fabr.*

1. LARRA PRISMATICA, *Smith, Proc. Linn. Soc.* ii. p. 103.

*Hab.* New Guinea; Morty Island.

2. LARRA SUADA. *L. nigra*, nitida; facie, pro- et metathorace abdominisque segmentorum fasciis argenteo sericeis; alis hyalinis.

*Male.* Length 3 lines. Head shining, the face and cheeks covered with silvery pubescence, the mandibles ferruginous, the palpi pale testaceous. Thorax, the disk finely and closely punctured; the pro- and metathorax covered with silvery pubescence; the legs with a fine silky silvery pile; the wings hyaline and iridescent, the nervures testaceous. Abdomen smooth and shining, the apical margins of the segments with silvery fasciæ.

*Hab.* Gilolo.

Gen. PISON, *Spin.*

1. PISON PALLIDIPALPIS, *Smith, Proc. Linn. Soc.* vii. p. 35.

*Hab.* Morty Island.

2. PISON MOROSUS. *P. niger*, nitidus, distincte punctatus; alis subhyalinis, venis nigris; abdomine nitido, segmentorum marginibus argentatis.

*Female.* Length 4 lines. Head punctured, the punctures confluent on the face; the clypeus and the face along the inner margin of the eyes with silvery pile; the tips of the mandibles ferruginous. The thorax closely and strongly punctured, the tegulæ smooth and shining; the wings subhyaline and iridescent; the sides of the thorax with a thin cinereous pubescence; the legs with a glittering pile. Abdomen shining and finely punctured; the margins of the segments depressed; the apical margins with fasciæ of silvery pile, only visible in certain positions.

*Hab.* New Guinea.

This species closely resembles *Pison pallidipalpis*, from Ceram; but it may be at once distinguished by the absence of the central longitudinal channel of the metathorax.

Fam. BEMBICIDÆ, *Westw.*Gen. BEMBEX, *Latr.*

1. BEMBEX MELANCHOLICA, *Smith, Cat. Foss. Hym.* p. 328.

*Hab.* Salwatty; Morty Island.

Fam. CRABRONIDÆ, *Leach.*Gen. TRYPOXYLON, *Latr.*

1. TRYPOXYLON PROVIDUM, *Smith, Proc. Linn. Soc.* v. p. 125.

*Hab.* New Guinea.

2. TRYPOXYLON GRACILLIMUM, *Smith, Proc. Linn. Soc.* vii. p. 35.*Hab.* Morty Island.Gen. CRABRO, *Fabr.*

1. CRABRO (RHOPALUM) LIGNARIUS. *C. niger*; abdomine petiolato, segmentis secundo tertio quartoque bimaculato flavis; scapo, collari, tuberculis, scutelloque maculis duabus flavis; tibiis tarsisque ferrugineis.

*Female.* Length  $4\frac{1}{2}$  lines. Opaque black; the head large, wider than the thorax, and subquadrate; the ocelli in a curve on the vertex; the scape and a stripe on the mandibles yellow; the clypeus densely covered with silvery pile; the cheeks have a thin silvery pubescence. Thorax: an interrupted line on the collar, the tubercles, and two spots on the scutellum yellow; the sides of the thorax with hoary pubescence; wings subhyaline and iridescent; the apex of the tibiæ and the tarsi ferruginous, the claw-joint rufo-piceous. Abdomen: petiole black, the first segment with an ovate spot on each side, the two following segments with an oblong-ovate spot on each side; beneath immaculate.

*Hab.* Morty Island.Very closely allied to the *Megapodium Westermanni* of Dahlbom.

2. CRABRO BUCEPHALUS. *C. niger*; capite magno, ocellis triangulariter ordinatis in vertice; metathorace dorso longitudinaliter striato.

*Female.* Length 3 lines. Black: head large, wider than the thorax, subquadrate, smooth and shining; the ocelli in a triangle in the centre of the vertex; the clypeus and cheeks with a silvery pubescence; the scape yellow in front; the mandibles ferruginous at their apex; the clypeus produced in the middle into a blunt tooth. An interrupted line on the collar, the tubercles, two ovate spots on the scutellum, the postscutellum, the base of the tibiæ above, and the basal joint of the tarsi pale yellow; the tarsi reddish brown; the calcaria pale; a smooth enclosed space at the base of the metathorax, which is divided in the middle by a longitudinal channel which runs to the apex of the metathorax; the wings subhyaline and iridescent, the tegulæ rufo-testaceous. The abdomen smooth and shining, with the apical segments slightly pubescent.

*Hab.* Morty Island.Gen. MIMESA, *Shuck.*

1. MIMESA CARBONARIA. *M. atra*, leviter griseo pubescens; facie argenteo pubescente; metathorace rugoso.

*Male.* Length  $4\frac{1}{2}$  lines. Black and shining, the disk of the thorax and the abdomen with a chalybeous reflexion; thinly sprinkled with grey pubescence, which is most dense and long on the metathorax; the face covered with silvery pile; the antennæ fulvous beneath, the scape black; the palpi and mandibles yellow, the tips of the latter ferruginous. Thorax: the metathorax coarsely rugose; the wings

clear hyaline and iridescent, the tegulæ pale testaceous; the legs ferruginous; the posterior coxæ black at their base; the femora and tibiæ with a darkish stain beneath, and the claw-joint of the tarsi dark. Abdomen: the petiole linear; the apex piceous and punctured.

*Hab.* Morty Island.

This I believe to be the first species of the genus that has been found within the tropics.

Fam. PHILANTHIDÆ, *Dahlb.*

Gen. CERCERIS, *Latr.*

1. CERCERIS SEPULCHRALIS, *Smith, Proc. Linn. Soc. ii. p. 107.*

*Hab.* Sumatra.

2. CERCERIS TUMULORUM. *C. nigra, flavo variegata; clypeo bidentato; abdomine fasciis tribus flavis; pedibus flavo-ferrugineis; alis fulvo-hyalinis, marginibus anterioribus fuscis.*

*Female.* Length 6 lines. Black, shining, and punctured, the head and thorax more closely and strongly so than the abdomen; the mandibles, face, clypeus, two minute spots on the vertex and a larger spot behind the eyes near their summit, yellow; the clypeus with two minute teeth; the tips of the mandibles rufo-piceous; the scape in front and the flagellum beneath fulvous. Thorax: two spots on the collar, two on the scutellum, the postscutellum, and the tegulæ yellow; the legs reddish yellow, with the coxæ, and the posterior tarsi towards their apex, dark fuscous; wings fulvo-hyaline, with a dark fuscous stain at the anterior margin of the superior pair. Abdomen: a spot on the basal segment, and a subinterrupted band on the apical margins of the three following segments, the bands narrowest in the middle.

*Hab.* Gilolo.

Group SOLITARY WASPS.

Fam. EUMENIDÆ, *Westw.*

Gen. EUMENES, *Fabr.*

1. EUMENES ARCUATUS, *Fabr. Syst. Piez. p. 286.*

*Hab.* Salwatty.

2. EUMENES PRASLINA, *Guér. Voy. Coq. Zool. ii. p. 267 (var. arcuatus).*

*Hab.* Morty Island.

3. EUMENES EXIMIUS, *Smith, Proc. Linn. Soc. v. p. 126.*

*Hab.* New Guinea; Morty Island.

4. EUMENES VOLATILIS, *Smith, Proc. Linn. Soc. vii. p. 38.*

*Hab.* New Guinea.

5. EUMENES FULVIPENNIS, *Smith, Cat. Vespidae, p. 24.*

*Hab.* Sula.

6. *EUMENES CIRCINALIS*, *Fabr. Syst. Piez.* p. 286.*Hab.* Morty Island.7. *EUMENES INSOLENS*. *E.* capite thoraceque flavo variegatis; abdominis petiolo elongato, medio utrinque dentato, segmento primo postico anguste flavo; alis infuscatiss.

*Female.* Length 6 lines. Black: head and thorax opaque, strongly and closely punctured; the clypeus united to a spot above; the inner margin of the eyes and a narrow line behind them yellow. The anterior margin of the prothorax, a line beneath the wings, running down to the intermediate coxæ, the anterior legs, the intermediate tibiæ and tarsi, the posterior tibiæ and the knees yellow; the post-scutellum and a large macula on each side of the metathorax yellow. The abdomen smooth and shining, the first segment with a narrow marginal fascia.

*Hab.* Gilolo.Gen. *ODYNERUS*, *Latr.*1. *ODYNERUS MULTIPICTUS*, *Smith, Proc. Linn. Soc.* ii. p. 112.*Hab.* New Guinea.2. *ODYNERUS LABORIOSUS*, *Smith, Proc. Linn. Soc.* vii. p. 41.*Hab.* New Guinea.3. *ODYNERUS CONSPICUUS*, *Smith, Proc. Linn. Soc.* vii. p. 40.*Hab.* Salwatty.4. *ODYNERUS IMPULSUS*. *O.* capite thoraceque rude punctatis et flavo variegatis; abdominis segmentis flavo fasciatis, segmento secundo bimaculato.

*Female.* Length 5 lines. Black; the head and thorax strongly and closely punctured. The clypeus emarginate in front, the angles produced into sharp teeth; a line on the mandibles, another at the inner margin of the eyes, terminating in their emargination, and a line behind the eyes yellow. Thorax: two angular spots on the prothorax, two on the scutellum, two angular spots on the posterior margin of the metathorax and a line passing outwardly from each, the tegulæ, tubercles, and a spot on the anterior and intermediate coxæ yellow; the wings subhyaline, the nervures black, a testaceous spot on the tegulæ; the legs ferruginous, with the posterior tarsi dusky. Abdomen very finely punctured and slightly shining; the margins of the segments bordered with yellow, the second segment with two yellow spots above and beneath.

*Hab.* Morty Island.

The specimen described has the heads of two females of a species of *Stylops* protruding from beneath the third segment.

Gen. *RHYNCHIUM*, *Spin.*1. *RHYNCHIUM HÆMORRHOIDALE*, *Fabr. Syst. Piez.* p. 259.*Hab.* New Guinea.

2. *RHYNCHIUM RUBROPICTUM*, *Smith, Proc. Linn. Soc. v. p. 128.**Hab.* Morty Island.3. *RHYNCHIUM METALLICUM*, *Sauss. Mon. Guêpes Sol. p. 114.**Hab.* Morty Island.Gen. *PTEROCHILUS*, *Klug.*

1. *PTEROCHILUS EXIMIUS*. *P. niger*, capite thoraceque flavo variegatis; abdominis segmentis flavo marginatis, segmento secundo flavo binotato.

*Male.* Length  $10\frac{1}{2}$  lines. Opaque black, with the disk of the thorax slightly shining. The clypeus, and a spot above it, between the antennæ and the scape in front, yellow. A semicircular spot on each side of the prothorax, an ovate spot beneath the wings, and two sub-ovate spots on the scutellum yellow; the wings fulvo-hyaline, with a fusco-ferruginous stain at the anterior margin of the superior pair, not passing beyond the stigma; the nervures ferruginous; the tibiæ, tarsi, and knees yellow, with a dark stain on the tibiæ behind. Abdomen, the margins of all the segments bordered with yellow, that on the basal segment recurved at the sides. (Pl. IV. fig. 4, ♂.)

*Hab.* New Guinea.

All the species of this genus are rare. The present, of which only a single specimen was captured, is one of the finest hitherto discovered.

Group *SOCIAL WASPS.*Gen. *ISCHNOGASTER*, *Guér.*

1. *ISCHNOGASTER UNICOLOR*, *Smith, Proc. Linn. Soc. vii. p. 41.*

*Hab.* New Guinea.

2. *ISCHNOGASTER IRIDIPENNIS*, *Smith, Proc. Linn. Soc. iii. p. 166.*

*Hab.* New Guinea; Sula.Gen. *VESPA*, *Linn.*

1. *VESPA AFFINIS*, *Fabr. Syst. Piez. p. 254 (var. V. cincta).*

*Hab.* Sula; New Guinea; Morty Island.

2. *VESPA BELLICOSA*, *Sauss. Mon. Guêpes Soc. p. 146.*

*Hab.* Sumatra.

3. *VESPA DORYLLOIDES*, *Sauss. Mon. Guêpes Soc. p. 112.*

*Hab.* Sumatra.Gen. *POLISTES*, *Latr.*

1. *POLISTES SIMULATUS*, *Smith, Proc. Linn. Soc. v. p. 130.*

*Hab.* New Guinea; Morty Island.

2. *POLISTES NIGRIFRONS*, *Smith, Proc. Linn. Soc. iii. p. 168.*

*Hab.* Salwatty.

3. *POLISTES DIABOLICUS*, *Sauss. Mon. Guépes Soc.* p. 68.  
*Hab.* New Guinea.
4. *POLISTES SAGITTARIUS*, *Sauss. Mon. Guépes Soc.* p. 56.  
*Hab.* Sumatra.
5. *POLISTES STIGMA*, *Fabr. Syst. Piez.* p. 261.  
*Hab.* Sumatra.
6. *POLISTES TEPIDUS*, *Fabr. Syst. Piez.* p. 271.  
*Hab.* Gilolo; Morty Island.
7. *POLISTES MULTIPICTUS*, *Smith, Proc. Linn. Soc.* v. p. 130.  
*Hab.* Gilolo; Morty Island.

Gen. *ICARIA*, *Sauss.*

1. *ICARIA MACULIVENTRIS*, *Sauss. Mon. Guépes Soc.* p. 23.  
*Hab.* Salwatty.
2. *ICARIA IRRITATA*, *Smith, Proc. Linn. Soc.* vii. p. 42.  
*Hab.* New Guinea.
3. *ICARIA NIGRA*, *Smith, Proc. Linn. Soc.* iii. p. 167.  
*Hab.* New Guinea.
4. *ICARIA GRACILIS*, *Smith, Proc. Linn. Soc.* iv. p. 167.  
*Hab.* New Guinea.
5. *ICARIA CONSERVATOR*, *Smith, Proc. Linn. Soc.* v. p. 130.  
*Hab.* Salwatty.
6. *ICARIA FESTINA*. *I.* opaca, nigra; clypeo maculato, oculis intus, scutello, metathorace abdominisque marginibus segmentorum anguste flavis; alis hyalinis.  
*Female.* Length  $3\frac{3}{4}$  lines. Opaque black, covered with a thin silky pile; the antennæ fulvous beneath; the mandibles ferruginous; a line on the inner margin of the eyes, two spots on the clypeus, and a line on the cheeks yellow. The posterior margin of the prothorax, a spot beneath the wings, the scutellum, and metathorax behind, yellow; the tarsi and the tibiæ beneath ferruginous; the wings hyaline and iridescent, the nervures black; the anterior margin of the superior pair towards their apex fuscous. Abdomen, the margins of the segments narrowly bordered with yellow.  
*Hab.* New Guinea.
7. *ICARIA BICOLOR*. *I.* opaca, nigra, pube sericea vestita; clypei margine antico, mandibulis, antennis, pedibus, metathorace abdominisque petiolo ferrugineis; alis saturate fulvis.  
*Female.* Length  $5\frac{1}{2}$  lines. Opaque black, thinly covered with a silky pile; the anterior margin of the clypeus, the mandibles, antennæ, legs, metathorax, and the petiole of the abdomen ferruginous; the anterior margin of the clypeus angular, produced in the middle into a

sharp point or tooth; the wings fulvous, the tegulæ fulvous. The apical margins of the second and three following segments of the abdomen ferruginous, the terminal segment entirely so.

*Hab.* New Guinea.

Fam. ANDRENIDÆ, *Leach*.

Gen. PROSOPIS, *Fabr.*

1. *PROSOPIS ELEGANS*. *P.* capite thoraceque viridibus, flavo pulchre pictis; abdomine purpureo, splendide micante; pedibus ferrugineis; alis hyalinis, iridescentibus.

*Female.* Length  $3\frac{3}{4}$  lines. Head and thorax green, not shining, very closely punctured; the enclosed triangular space at the base of the metathorax very delicately punctured; the front with a central yellow line, extending from the anterior stemma to the anterior margin of the clypeus, and a similar stripe on each side, close to the inner orbit of the eyes; a narrow yellow line behind the eyes; the labrum yellow; the tips of the mandibles ferruginous; the antennæ fulvous beneath. Thorax: the collar, a line passing over the tegulæ and the sides of the scutellum, a spot in the middle of the postscutellum, the tegulæ, and a spot behind them yellow; the tips of the anterior femora, the intermediate and posterior pairs, and all the tibiæ and tarsi ferruginous, the latter more or less fuscous above; the base of the posterior tibiæ whitish; wings hyaline and splendidly iridescent, the nervures testaceous, with the costal black. Abdomen purple, splendidly iridescent, changing in different lights; the posterior margins of the first, second, and third segments with a little white pubescence at the sides of the abdomen.

*Hab.* New Guinea.

Gen. NOMIA, *Latr.*

1. *NOMIA DENTATA*, *Smith, Proc. Linn. Soc.* iv. p. 133.

*Hab.* New Guinea.

2. *NOMIA CLAVATA*, *Smith, Proc. Linn. Soc.* vi. p. 29.

*Hab.* Morty Island.

3. *NOMIA OPULENTA*. *N.* nigra; capite thoraceque punctatis, opacis; abdomine nitido, segmentis ad marginem apicalem cæruleo-viridibus pulchriter ornatis.

*Male.* Length 4 lines. Black: the face, sides of the thorax and beneath, the metathorax and legs with a cinereous pubescence; the collar and postscutellum with dense short white pubescence; the antennæ slightly fulvous beneath; the wings subhyaline, their apical margins clouded, the nervures testaceous, the tegulæ pale testaceous; the legs rufo-testaceous. Abdomen smooth, shining, finely and closely punctured; the apical margins of the segments with fasciæ of

very bright blue-green, changing in different lights ; beneath rufo-testaceous.

*Hab.* Morty Island.

This insect so closely resembles the *N. concinna* from Celebes and Ceram, that I suspect it may be the true male of that species ; that which I have described as being so is probably a distinct species.

Fam. MELECTIDÆ, *Westw.*

Gen. CROCISA, *Latr.*

1. CROCISA NITIDULA, *Fabr. Syst. Piez.* p. 386.

*Hab.* Salwatty ; Gilolo.

Gen. CÆLIOXYS, *Latr.*

1. CÆLIOXYS INTRUDENS, *Smith, Proc. Linn. Soc.* v. p. 132 (♂?).

*Hab.* Morty Island.

Fam. DASYGASTRÆ, *Latr.*

Gen. MEGACHILE, *Latr.*

1. MEGACHILE LACHESIS, *Smith, Proc. Linn. Soc.* v. p. 133.

*Hab.* Salwatty.

2. MEGACHILE CLOTHO, *Smith, Proc. Linn. Soc.* v. p. 134.

*Hab.* Morty Island.

3. MEGACHILE ALECTO, *Smith, Proc. Linn. Soc.* v. p. 134.

*Hab.* Morty Island.

4. MEGACHILE NIDULATOR. *M. nigra* ; abdominis basi pube alba, apice ferruginea vestito ; alis fuscis.

*Female.* Length 6 lines. Black, and clothed with black pubescence, which is short and very sparing ; the disk of the thorax shining and punctured ; wings dark fuscous ; the base of the abdomen and margin of the scutellum fringed with white pubescence ; the apical margin of the third segment of the abdomen and the three following segments covered with short red pubescence ; all the segments clothed beneath with pubescence of the same colour.

*Hab.* New Guinea.

5. MEGACHILE SENEX. *M. nigra* ; capite pube alba vestito ; abdominis segmentis apicalibus fulvis ; alis fulvo-hyalinis.

*Female.* Length 8 lines. Black ; the head densely clothed with short white pubescence, the pubescence on the thorax and abdomen short and black ; the sixth segment of the latter red, and covered with short fulvous pubescence ; the basal joint of the posterior tarsi fulvous within, the tibiæ with an ashy pubescence within ; the wings fulvo-hyaline, the nervures black.

*Hab.* New Guinea.



6. *MEGACHILE APICATA*. *M. nigra*, opaca, facie pube pallide flava vestita; alis infuscatis; abdomine segmentis duobus apicalibus ferrugineis tomentosis.

*Male*. Length 4 lines. Black, opaque, clothed with a dense short pubescence; the face covered with pale yellow pubescence, as well as the lower portion of the cheeks. The wings fuscous, palest at their base; the anterior and intermediate tarsi ferruginous, the latter fuscous above; the anterior coxæ armed with short acute teeth. Abdomen: beneath, the apical margins of the segments rufo-testaceous; the two apical segments clothed with pale ferruginous pubescence.

*Hab.* Morty Island.

### Fam. SCOPULIPEDES.

#### Gen. CERATINA, *Latr.*

1. *CERATINA HIEROGLYPHICA*, *Smith, Cat. Apidæ*, p. 224.

*Hab.* Gilolo.

#### Gen. XYLOCOPA, *Latr.*

1. *XYLOCOPA LATIPES*, *Drury, Ill. Exot. Ins.* ii. p. 98.

*Hab.* Sumatra.

2. *XYLOCOPA CÆRULEA*, *Fabr. Syst. Piez.* p. 345.

*Hab.* Sumatra.

3. *XYLOCOPA DEJEANII*, *St. Farg. Hym.* ii. p. 209.

*Hab.* Sumatra.

4. *XYLOCOPA PROVIDA*, *Smith, Proc. Linn. Soc.* vii. p. 48.

*Hab.* Morty Island.

5. *XYLOCOPA NOBILIS*, *Smith, Proc. Linn. Soc.* iii. p. 8.

*Hab.* Sula.

6. *XYLOCOPA CORONATA*, *Smith, Proc. Linn. Soc.* v. p. 135.

*Hab.* Morty Island.

#### Gen. ANTHOPHORA, *Latr.*

1. *ANTHOPHORA ZONATA*, *Linn. Syst. Nat.* i. p. 995.

*Hab.* Salwatty; New Guinea.

#### Gen. TRIGONA, *Jurine*.

1. *TRIGONA LÆVICEPS*, *Smith, Proc. Linn. Soc.* ii. 51, iii. 135.

*Hab.* New Guinea.

2. *TRIGONA PLANIFRONS*. *T. nigra*, nitida; pectore abdomineque subtus pube cinerea tectis; alis subhyalinis, nervuris atris.

*Worker*. Length  $2\frac{1}{2}$  lines. Shining black; the flagellum beneath obscurely fulvous; the apex of the mandibles rufo-piceous. Thorax

beneath thinly clothed with cinereous pile or short pubescence; the wings subhyaline, the nervures black; the posterior tibiæ broadly expanded towards their apex, and fringed outwardly with black pubescence. Abdomen conical, and thinly clothed beneath with cinereous pubescence.

*Hab.* New Guinea.

3. *TRIGONA ATRICORNIS*. *T. melleo-flava*; flagello, tibiis tarsisque intermediis et posticis nigris.

*Worker.* Length 2 lines. Honey-yellow, smooth and shining; the inner edge of the mandibles rufo-piceous; the flagellum black, slightly fulvous beneath. Thorax: a glassy-smooth and shining pale space enclosed by a suture; the wings hyaline and iridescent, the nervures dark fusco-ferruginous; the intermediate and posterior tarsi, the posterior tibiæ outside, except at their base, and a line on the posterior femora above black. The two apical segments of the abdomen thinly covered with white downy pile; beneath, the segments fringed with pale hairs.

*Hab.* New Guinea.

#### DESCRIPTION OF PLATE IV.

- Fig. 1. *Cladomacra macropus*, ♂. 1 *a.* Antenna of ditto.  
 Fig. 2. *Polyrhachis Neptunus*, ♀.  
 Fig. 3. *Formica (Myrmecopsis) respiciens*, ♀. 3 *a.* Head of ditto.  
 Fig. 4. *Pterochilus eximius*, ♂.  
 Fig. 5. *Cephaloxys capitata*, ♀.  
 Fig. 5 *a.* Under side of the head of ditto.  
 Fig. 5 *b.* Upper side of the head of ditto.  
 Fig. 6. *Myrmica quadrispinosa*, ♀.  
 Fig. 6 *a.* Thorax of ditto.  
 Fig. 7. *Cataulacus hispidulus*, ♀.  
 Fig. 8. *Pheidolacanthinus armatus*, ♀.  
 Fig. 9. *Spinaria sulcata*, ♀.

Account of a Heronry, and Breeding-place of other Water-birds,  
 in Southern India. By JOHN SHORTT, M.D., F.L.S.

[Read Nov. 3, 1864.]

In the Madras district, about fifty miles from Madras and twelve miles from Chingleput in a south-easterly direction, is a small village called VadenThaugul, which means literally "Hunter's Rest," from *vaden*, "hunter," and *thaugul*, "rest." To the south of the village lies one of those small tanks called *Thaugul* by the Tamil ryots, implying a water-rest or temporary reservoir, from which

