

DESCRIPTIONS  
OF  
NEW SPECIES  
OF  
HYMENOPTERA  
IN THE  
COLLECTION  
OF THE  
BRITISH MUSEUM.

BY  
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## PREFACE.

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The late Mr. Frederick Smith was engaged, at the time of his death, in the determination and arrangement of the large collection of foreign Hymenoptera in the British Museum. During the progress of this work he drew up descriptions of those species which he recognized as new, with the view of finally submitting the whole of his manuscript to the Trustees for publication. He was not permitted to complete this task: after a short illness, Frederick Smith died on February 16th, 1879.

It seemed to the Trustees to be in the interest of the collection in the British Museum, as well as of science generally, that such descriptions as were left by Mr. Smith should be published as soon as possible. Although they were prepared with great care, and were apparently ready for the printer, the author, probably, would have introduced some emendations if he had lived to see his work pass through the press. Under the circumstances mentioned, the only corrections admitted by the Editor were those of some specific names which were found to be preoccupied for species of the same genus. The original manuscript will be preserved in the archives of the Department.

Mr. Smith had also written preliminary diagnoses of a number of Central-American species presented to the Trustees by Messrs. Cresson and Salvin. These diagnoses, originally destined for the work on the Fauna of Central America which those gentlemen are preparing for publication, have been introduced into the present work with their permission.

The proof sheets were entrusted to Mr. C. O. Waterhouse, who also took great care in verifying the descriptions with the typical specimens.

Although Frederick Smith had reached the age of 73 years when he died, his strength and love of work were unimpaired. He had worked in the service of the Trustees for 29 years; and the excellent arrangement and condition in which he left the collections of Hymenoptera and other Insects bear ample testimony to his industry, conscientiousness, and love of order. The study of Hymenoptera he had made so peculiarly his own, that many years must elapse before his place among British Entomologists will be filled again.

ALBERT GÜNTHER.

British Museum,  
August 29th, 1879

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NEW SPECIES  
OF  
HYMENOPTERA.

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ANDRENIDÆ, Leach.

COLLETES, Latr.

1. *Colletes perplexus*.

Length 5 lines.—Black; the thorax with fulvous pubescence above; the abdomen with white pubescent fasciæ; the pubescence on the face whitish, as well as that on the cheeks, on the vertex it inclines to fulvous; the flagellum of the antennæ fulvous beneath. Thorax with short dense fulvous pubescence, long and pale at the sides of the metathorax, also beneath and on the sides; the floccus on the posterior femora beneath white, the scopa fulvous; wings hyaline and iridescent, the nervures black, the veins pale rufo-testaceous. Abdomen shining, the basal segment finely punctured, which are somewhat distant in the middle; the segments very closely and finely punctured; all the segments with white pubescent fasciæ.

Mexico, Orizaba.

2. *Colletes nitidus*.

Length 5 lines.—Black; the pubescence white; that on the thorax above slightly tinged with yellow; the abdomen very smooth, and shining. The clypeus strongly punctured; the

flagellum of the antennae fulvous beneath towards the apex. Thorax shining and punctured; wings hyaline and iridescent, the nervures fusco-ferruginous. Abdomen impunctate at the base, and very finely punctured towards the apex; the apical margin of each segment, except the basal one, with a white pubescent fascia.

*Male.* A little smaller than the female, of the same jet-black colour, with similar white pubescence, and the same bright polished abdomen; the latter is oblong-ovate in the male, and of a conical shape in the female, the apex being pointed.

*Hab.* East Florida.

### 3. *Colletes intricatus.*

*Female.* Length  $5\frac{1}{2}$  lines.—Black; the thorax clothed with fulvous pubescence; the abdomen shining, and closely and finely punctured, the base most strongly so. The head shining, punctured, the clypeus coarsely so; the face with dark griseous pubescence. Thorax with the pubescence beneath the wings fuscous, that on the legs beneath paler, the floccus on the posterior femora beneath of a dirty white; the scopa on the posterior tibiae fuscous; wings subhyaline, the nervures fusco-ferruginous, the tegulae testaceous. Abdomen with a little pale fulvous pubescence at the base.

*Male.* Length  $4-4\frac{1}{2}$  lines.—The face with pale fulvous pubescence, on the vertex and thorax above it is fulvous; wings as in the female. Abdomen shining, closely punctured; the margins of the first and second segments depressed, all the apical margins with pale pubescent fasciae.

*Hab.* Mexico, Orizaba.

### 4. *Colletes griseus.*

*Female.* Length 5 lines.—Black; the abdomen shining, the pubescence griseous. Head—the pubescence griseous, that on the clypeus, which is strongly punctured, whitish, as it is also on the cheeks. Thorax strongly punctured, and clothed with erect griseous pubescence; the floccus on the posterior femora beneath nearly white; the scopa on the tibiae fuscous above and whitish within and beneath; wings hyaline and iridescent, the nervures black. The apical margins of the segments of the abdomen with very narrow white pubescent fasciae, which are usually more or less interrupted on the first and second segments.

*Male.* Length  $4\frac{1}{2}$  lines.—Very closely resembles the female, but has the antennae nearly as long as the thorax; the abdomen very bright and shining and more oblong, the segments narrowly bordered with white above and beneath.

*Hab.* Mexico, Oajaca.

5. *Colletes rufipes*.

*♂*. Length  $4\frac{1}{2}$  lines.—Black; the face with white pubescence, on the disk of the thorax fulvous; the abdomen with a short white pile. The labrum, and the mandibles in the middle, rufous; the cheeks with white pubescence. The thorax densely iridescent, pale fulvous on the sides and beneath; wings hyaline and iridescent, the nervures ferruginous; legs ferruginous; the posterior femora at their base white. Abdomen black, the apical margins of the segments pale testaceous.

*♀*. Bahia.

6. *Colletes senilis*.

*♂*. Length  $4-4\frac{1}{2}$  lines.—Black; the pubescence on the face pale fulvous, the rest griseous. The head closely punctured; the flagellum of the antennae, except two or three of the basal joints, fulvous beneath; the mandibles rufopiceous in the middle. Thorax more strongly punctured than the head, but not so closely, having a mixture of black and white pubescence; that on the scutum entirely black; wings hyaline and iridescent, the nervures black; the pubescence beneath cinereous; the flocus on the posterior femora at their base beneath dense, long, and white; the rest on the outside of the posterior tibiae fuscous. Abdomen black, shining, and impunctate; the apical margins of the segments with whitish pubescent fasciae.

Very closely resembles the female, but the pubescence on the face above is entirely griseous. In both sexes the claw-joint of the tarsi is rufopiceous.

*♀*. Para: Petropolis (Brazil).

7. *Colletes bicolor*.

*♂*. Length 5 lines.—Head and thorax black, the abdomen dark metallic blue, shining and impunctate. The head with black pubescence. The thorax densely clothed with short fulvo-ferruginous pubescence; wings hyaline and slightly iridescent, the nervures black; the legs black and with black pubescence, the claw-joint of posterior tarsi ferruginous.

*♀*. Mendoza.

## PARACOLLETES, Smith.

1. *Paracolletes nitidus*.

*♂*. Length 7 lines.—Head and thorax nigro-aneous, with metallic tints on the mesothorax; the abdomen dark metallic green. The face with a short hoary pubescence; the vertex closely and

finely punctured, the flagellum fulvous beneath; the mandibles bidentate, their apex rufo-piceous. Thorax with more or less thin hoary pubescence above and beneath; the pubescence on the legs is similar, that on the posterior tibiae and tarsi is silvery white exteriorly, within it is fuscous; wings hyaline, with a fuscous cloud beyond the stigma; the mesothorax and scutellum not very closely punctured. Abdomen oblong-ovate and finely punctured; the apical margin of each segment with a narrow pubescent white fascia; the apical segment with dark fuscous pubescence; beneath, the segments have a fringe of long silvery white pubescence.

*Hab.* N.W. coast of Australia.

## 2. *Paracolletes fervidus*.

*Female.* Length 6 lines.—Black, with fulvous pubescence; the posterior legs incrassate. Head with pale fulvous pubescence, on the cheeks it is longer and paler; the flagellum of the antennae fulvous beneath. The thorax with fulvous pubescence above, on the sides and beneath it is paler; the tibiae and tarsi rufo-piceous, the tarsi brightest; the femora fringed beneath with long pale pubescence, on the tibiae outside it is short and fusco-ferruginous, on the posterior tibiae and tarsi within it is bright rufo-fulvous; wings hyaline, faintly clouded at their apex, the nervures rufo-testaceous. Abdomen with a slight nigro-aneous tint; ovate, with the base truncate; the apical margins of the segments rufo-piceous and thinly fringed with fulvous pubescence, that at the base of the abdomen is pale; the margins of the segments beneath with a thick fringe of pale pubescence.

*Hab.* New Holland.

## 3. *Paracolletes marginatus*.

*Female.* Length 7 lines.—Black; thorax and legs densely pubescent; the abdomen with a narrow white pubescent fascia on the apical margin of each segment; in the male the margins themselves are pale yellowish white. The sides of the face and the cheeks with white pubescence, that on the latter long and ragged, on the vertex it is ochraceous; the labrum and mandibles pale ferruginous, the latter black at their tips; the flagellum of the antennae fulvous beneath beyond the second joint; the clypeus shining and punctured. Thorax above clothed with fulvo-ochraceous pubescence, on the sides and beneath it is longer and paler; the legs stout; the anterior femora have a dense white and the tarsi ferruginous; the posterior femora have a dense white curled floccus beneath; the tibiae have the scopa white beneath and inclining to fulvous above, very bright and glittering; wings subhyaline, the nervures fusco-ferruginous, the tegulae rufo-testa-

*abdom.* The abdomen very finely and closely punctured; the anal tubercles fuscous; beneath, the segments have a pubescent marginal fringe, which is white towards the sides and fulvous in the middle.

*ab.* Length  $6\frac{1}{2}$ -7 lines.—Black, smooth, and shining. The face, cheeks, and thorax with fulvous pubescence; the scape of the antennae and four or five of the basal joints of the flagellum beneath ferruginous; the anterior margin of the clypeus, the labrum, and mandibles reddish yellow, the tips of the latter black. The tibiae, tarsi, and tips of the femora pale ferruginous; wings fulvous-hyaline, the nervures ferruginous. Abdomen oblong-ovate; all the segments with their apical margins narrowly white or yellowish white.

*Hab.* Queensland.

#### 4. *Paracolletes abdominalis*.

*abdom.* Length  $5\frac{1}{2}$  lines.—Head and thorax black, abdomen ferruginous. The face clothed with white pubescence, the clypeus shining and coarsely punctured; the flagellum of the antennae, except two or three of the basal joints, bright fulvous beneath; the mandibles ferruginous in the middle. Thorax with pale fulvous pubescence above, beneath it is whitish; the tibiae and tarsi ferruginous, and with pale glittering pubescence; the posterior femora with a dense fringe of white pubescence, the scopa on the posterior tibiae white; wings hyaline, with the nervures ferruginous, the veins rufo-testaceous. Abdomen oblong-ovate, truncate at the apex; the margins of the segments thinly fringed with pale pubescence; that on the apical segment fulvous; beneath, the segments are fringed with white pubescence.

*Hab.* Western Australia (Champion Bay).

#### MYDROSOMA, Smith.

*Head* not so wide as the thorax; *ocelli* in a slight curve on the sides; *antennae* slightly clavate, the basal joint of the flagellum a little longer than the second joint, the third and following joints slightly increasing in length to the apical one; the *labial palpi* 4-jointed, the joints short, each in succession decreasing in length; the *maxillary palpi* 6-jointed; the tongue short, obtuse at apex, and emarginate. The *anterior wings* with one elongate basal cell, its apex truncate; three submarginal cells, the first as long as the two following united, the second subquadrate, slightly bowed towards the marginal cell, the third a little shorter than the second and oblique; the first recurrent nervure uniting with the second, and the second uniting with the third transverse nervure. The *abdomen* ovate.

This genus has nearly the same neurulation of the anterior wings



as the genus *Ptiloplossa*, but it has a subquadrate second submarginal cell: the antennae are different in construction; and the tongue is differently formed, being blunt, in *Ptiloplossa* it is acute.

#### 1. *Mydrosoma metallicum*.

*Female*. Length 6½ lines.—Head and thorax black; abdomen of a metallic-green lustre above, beneath pale rufo-testaceous. Head shining above and sparingly punctured, the clypeus with strong punctures, its anterior margin ciliated; the labrum and mandibles in the middle rufo-testaceous; the flagellum bright fulvous, but slightly fuscous above; at the sides of the face and above the antennae there is a little ochraceous pubescence. The thorax above densely clothed with short pubescence of the same colour, that on the sides and beneath is much paler; the posterior femora with a dense floccus of long whitish pubescence beneath, that on the tibia and tarsi is black, as it is also on the anterior and intermediate legs above; the claw-joint of all the tarsi ferruginous, with the tips of the claws black; wings hyaline, with the nervures rufo-testaceous, the tegulae ferruginous. Abdomen of a changeable lustre, metallic green, with a pale ferruginous transverse fascia in the middle of the first segment; similar fasciae are observable on the other segments when viewed laterally; beneath, the segments are fringed with white pubescence, and the second and following segments have at their lateral margins a tuft of black pubescence.

*Male*. Length 6 lines.—The general colouring is that of the female; but the abdomen is more elongate and convex, narrowing from the base to the apex, which is rounded; at the extreme base it is ferruginous, as is also the middle of the two apical segments beneath; from the apical segment two small pale lamellae project; the posterior tibiae are curved inwardly, and considerably widened at their apex; the anterior and intermediate tarsi, as well as the articulations of the legs, are rufo-testaceous.

*Hab.* Ega, on the Amazon (coll. by Mr. Bates).

#### LIOPROCTUS, Smith.

##### 1. *Lioproctus fimbriatus*.

*Female*. Length 5-6 lines.—Head and thorax black, abdomen ferruginous. The face with white pubescence; the clypeus strongly punctured; the flagellum of the antennae fulvous beneath; the mandibles ferruginous at their apex and bidentate. Thorax clothed above with whitish pubescence, on the sides and beneath it is longer; the legs ferruginous and pubescent, that on the posterior tibiae and tarsi long, dense, and silvery white; wings hyaline, the

are fusco-ferruginous, the tegulae rufo-piceous. Abdomen densely and closely punctured; the fifth segment clothed with black pubescence, which forms a dense fringe to the apex; the terminal segment with a central naked space, which is marked laterally; beneath, the segments with a pale marginal fringe.

## 2. *Lioproctus vigilans*.

*♂*. Length 6 lines.—Head and thorax black, the latter with violet tinge above; the abdomen olive-green. The face with pale pubescence; the flagellum of the antennae fulvous beneath. Thorax with fuscous pubescence above, at the sides and beneath it yellowish white; the legs with black pubescence above, the scopa of the posterior tibiae white beneath; wings subhyaline, their apical margins clouded, the nervures black. Abdomen shining, the first segment with scattered punctures, the other segments closely punctured; the apical half of the segments depressed and impunctate, and thinly fringed with pale pubescence; at the base of the second segment laterally there is a small focus of white pubescence; the apical finbria dark fuscous.

*hab.* Swan River.

## CAUPOLICANA, Spin.

### 1. *Caupolicana pubescens*.

*♂*. Length 8 lines.—Black, and densely clothed with fulvous pubescence, that on the thorax above richest in colour; beneath the long dense pubescence; the fringe on the apical margins of the segments of the abdomen pale fulvous; on the tarsi beneath it short and bright fulvo-ferruginous; wings hyaline, the nervures ferruginous.

*hab.* Chili.

The pubescence of this species would be brighter in recent exiles; the two in the Collection are both old and faded from exposure, the wings being ragged at the edges.

### 2. *Caupolicana funebris*.

*♂*. Length  $8\frac{1}{2}$  lines.—Black; the pubescence black, except that on the face, which is white. The pubescence on the thorax above is dense and short, that on the metathorax is long and sooty black; wings hyaline at the base, and clouded from the marginal vein to the apex; the tarsi have fulvous pubescence beneath. Abdomen slightly shining, the apical margins of the segments clouded with sooty black pubescence; the anal finbria black; the apical segment with a naked, shining, triangular, pale fulvous

space in the middle; at the extreme lateral margins of the third and fourth segments are tufts of white pubescence.

*Hab.* Chili.

### 3. *Caupolicana lugubris*.

*Female.* Length 7½–8 lines.—Coal-black; the head and the thorax above, as far as the tegulae, densely clothed with white pubescence, that on the thorax faintly ochraceous; the white pubescence occasionally extends a little beyond the tegulae; the second, third, and fourth segments of the abdomen with white pubescent fasciae on their apical margins; beneath, the pubescence is entirely black; wings hyaline, with a slight fuscous cloud beyond the third submarginal cell; the anterior and intermediate femora fringed beneath with griseous pubescence, that on the posterior femora sooty black.

*Hab.* Uruguay.

## LAMPROCOLLETES, Smith.

### 1. *Lamprocolletes metallicus*.

*Male.* Length 3 lines.—Brassy green, with the metathorax blue-green. The head closely punctured, the face with glittering whitish pubescence, that on the vertex fuscous, on the cheeks it is dense and white. Thorax shining, the disk with strong punctures, intermixed with finer ones; above with a thin yellowish-white pubescence; on the sides and beneath it is white, as it is also on the legs; the apical joints of the tarsi ferruginous; wings hyaline and iridescent, the nervures rufo-testaceous. Abdomen subovate, and very delicately and closely punctured, sparingly pubescent; the apical margins of the segments very narrowly testaceous.

*Hab.* Australia.

### 2. *Lamprocolletes providus*.

*Female.* Length 5 lines.—Head and thorax black, abdomen blue-green. Head closely punctured, the clypeus most strongly so, and shining; the face with a thin griseous pubescence; the anterior margin of the clypeus ciliated with short fulvous hairs; tips of the mandibles rufo-piceous; the flagellum of the antennae obscure fulvous beneath. Thorax shining above, finely and sparingly punctured; on the sides, beneath, and on the femora the pubescence is whitish, on the latter forming a long floccus; the scopa on the posterior tibiae white; wings hyaline and iridescent, the nervures rufo-testaceous. Abdomen subovate, shining, and closely and

coarsely punctured; the apical segment with black pubescence; the apical margins of the segments narrowly rufo-testaceous.

*Hab.* Australia.

### 3. *Lamprocolletes fulvus*.

*Female.* Length 6 lines.—Clothed with short fulvous pubescence. Head and thorax black; the face with a sparing whitish pubescence, inclining to fulvous above the antennæ; the flagellum of the latter and the apical joints fulvous; the mandibles ferruginous in the middle. The pubescence beneath the thorax and on the femora is griseous; the legs ferruginous; the scopa on the posterior tibiae pale fulvous within and slightly fuscous exteriorly; wings hyaline and iridescent, the nervures rufo-testaceous. Abdomen ferruginous beneath and fusco-ferruginous above, the apical margins of the segments pale testaceous.

*Hab.* Queensland.

### 4. *Lamprocolletes nanus*.

*Female.* Length 3 lines.—Black and shining. The face and cheeks with a thin griseous pubescence; the flagellum fulvous beneath; the head finely punctured. Thorax with fine scattered punctures on the disk; the base of the metathorax smooth and shining; wings hyaline and iridescent, the nervures and tegulae rufo-testaceous; legs rufo-piceous, their pubescence white; the scopa on the posterior tibiae fuscous outside and white within. Abdomen white, with a slight griseous pubescence; the apical margins of the segments pale testaceous and slightly depressed; the apical segment with black pubescence.

*Hab.* Western Australia.

### 5. *Lamprocolletes amabilis*.

*Female.* Length 4 lines.—Green. The face with a thin griseous pubescence; the clypeus strongly punctured and of a violet colour; the flagellum fulvous beneath, the vertex with a little fulvous pubescence. Thorax thinly clothed above with short fulvous pubescence and closely punctured; wings hyaline, their nervures ferruginous; legs rufo-piceous, the pubescence on the posterior coxae and the fringe on the femora white; the scopa on the posterior tibiae fuscous above and white beneath. Abdomen shining, the apical margins of the segments depressed; the apical segment with black pubescence; the apical margins of the segments beneath are tinged with white pubescence.

*Hab.* Australia.

6. *Lamprocolletes ruficornis*.

*Female*. Length  $4\frac{2}{3}$  lines.—Black; the scape of the antennae black, the flagellum bright rufo-fulvous. The head and thorax densely clothed with bright fulvous pubescence; the tarsi, tibiae, and tips of the femora rufo-fulvous; wings hyaline and iridescent, the nervures rufo-testaceous; an enclosed space at the base of the metathorax transversely striated. Abdomen pubescent, densely so at the base; the apical margin of the segments testaceous.

*Hab.* Western Australia.

7. *Lamprocolletes bimaculatus*.

*Female*. Length 5 lines.—Head and thorax black, the abdomen ferruginous. The face with fulvous pubescence, the cheeks bearded with white; the clypeus shining and with a few scattered punctures; the flagellum obscure fulvous beneath. Thorax with a thin short fulvous pubescence above, on the sides and beneath it is hoary; the tibiae, tarsi, and tips of the femora ferruginous; the scopa on the posterior tibiae is white beneath and fuscous above; wings hyaline and iridescent, their apical margins slightly clouded, the nervures ferruginous, the tegulae rufo-piceous. Abdomen ovate and somewhat depressed; the second segment with an ovate black macula laterally; the apical segments more or less fusco-ferruginous; beneath, the segments are fringed with white pubescence.

*Hab.* Swan River.

8. *Lamprocolletes bicolor*.

*Female*. Length 4 lines.—Head and thorax green, abdomen dark blue. The face thinly covered with hoary pubescence, on the cheeks it is dense and white; the clypeus with strong punctures. Thorax thinly clothed above with pale fuscous pubescence, beneath and on the legs it is whitish; the mesothorax with strong scattered punctures; the tibiae in front and the tarsi rufo-fulvous; wings hyaline and iridescent, the nervures dark fuscous. Abdomen shining blue, with a little pale pubescence at its base. The legs sometimes entirely rufo-piceous.

*Male*. Length  $3\frac{1}{2}$  lines.—Closely resembling the female, but the head and thorax black or very obscurely nigro-aneous; the legs black, the posterior pair above and the tarsi and tibiae rufo-fulvous.

*Hab.* Swan River.

9. *Lamprocolletes antennatus*.

*Male*. Length  $4\frac{1}{2}$  lines.—Black; the antennae with the flagellum fulvous, above more or less fuscous; the apical joint black, com-

head dilated, with the apex truncate; the face and cheeks with white pubescence. Thorax shining, finely punctured and finely covered with pale fuscous pubescence, on the sides and beneath it is white; the tips of the femora, the tibiae, and tarsi ferruginous; the intermediate and posterior tibiae slightly fuscous above; wings hyaline and iridescent, the nervures ferruginous. Abdomen closely punctured; the apical margins of the segments depressed, testaceous, bordered with white pubescence laterally.

*Hab.* Swan River.

#### 10. *Lamprocolletes argentifrons*.

*Male.* Length 5 lines.—Black; the pubescence white, except that on the vertex of the head and disk of the thorax, which is fuscous. The face and cheeks with dense silvery-white pubescence; the apex of the flagellum of the antennae rufo-testaceous. The anterior tibiae and tarsi, and the claw-joint of the intermediate and posterior pairs, ferruginous; the wings hyaline and iridescent, the nervures ferruginous. Abdomen shining; the apical margins of the segments slightly depressed, the basal segment pubescent, and the basal margins of the second and third segments with fine short downy pubescence; the two apical segments with a little fuscous pubescence; beneath, the margins of the segments fringed with white pubescence.

*Hab.* Swan River.

### DASYCOLLETES, Smith.

#### 1. *Dasycolletes humerosus*.

*Female.* Length  $4\frac{1}{2}$  lines.—Black, with a bright yellow patch of short dense pile on the mesothorax over the tegulae. The head above the antennae very finely longitudinally rugulose, below the antennae smooth and shining, with scattered punctures. Thorax very finely and closely punctured above; legs obscurely rufo-piceous; the floccus on the posterior femora beneath white; the coxae on the tibiae dark fuscous above, and beneath white; wings subhyaline. Abdomen ovate, smooth, and slightly shining.

*Hab.* Melbourne.

#### 2. *Dasycolletes vitrifrons*.

*Male.* Length  $3\frac{1}{2}$  lines.—Olive-green, with the face brassy, and below the antennae covered with glittering white pubescence. The vertex of the head and the thorax above with pale fulvous pubescence; on the metathorax, the sides, and beneath it is hoary; the flagellum of the antennae fulvous beneath; the tibiae and tarsi ferruginous; the

wings hyaline and iridescent, the nervures ferruginous. Abdomen oblong, slightly pubescent, at the base with some long hoary pubescence; the apical segment ferruginous.

*Hab.* Swan River.

### **EURYGLOSSA, Smith.**

#### **1. Euryglossa quadrimaculata.**

*Female.* Length 4 lines.—Black, with yellow markings, four being on the abdomen. Head before the antennæ yellow; the tips of the mandibles and the flagellum ferruginous, the latter slightly fuscous above. The sides of the mesothorax before the wings and the scutellum and postscutellum yellow; wings hyaline and splendidly iridescent; the legs more or less obscurely rufo-piceous, the anterior tibiae in front and the apical joints of the tarsi paler. Abdomen impunctate; at the basal margin of the second and third segments there is laterally a semicircular yellow macula.

*Hab.* Queensland.

#### **2. Euryglossa simillima.**

*Female.* Length  $3\frac{1}{2}$  lines.—Head and thorax black, abdomen ferruginous. Head opaque, covered with confluent punctures; the clypeus shining and with scattered punctures; the face with short griseous pubescence; the flagellum of the antennæ fulvous beneath. Thorax opaque, truncate posteriorly; on the sides and beneath a little thin griseous pubescence; wings hyaline; the apical joints of the tarsi rufo-testaceous; the scopa on the posterior tibiae white beneath and slightly fuscous above. Abdomen oblong-ovate; the two apical segments blue-black, the apical one with black pubescence, the extreme lateral margins of the segments blackish.

*Hab.* Swan River.

The general aspect of this species is that of a *Sphæcodes*.

#### **3. Euryglossa rubricata.**

*Female.* Length  $3\frac{1}{2}$  lines.—The head and thorax beneath black; the abdomen ferruginous, with the apex blue. The antennæ and mandibles ferruginous, the flagellum fuscous above, and the mandibles black at their tips. Thorax shining and with fine scattered punctures; the metathorax black; wings hyaline, the nervures and tegulae pale testaceous. The extreme base of the abdomen and the fifth and sixth segments, with the apical margin of the fourth, blue-black.

*Hab.* Swan River.

4. *Euryglossa nigra*.

*Male*. Length  $3\frac{1}{2}$  lines.—Black; the abdomen depressed and having a silky gloss. The ninth, tenth, and eleventh joints of the antennae reddish yellow, the apical joint compressed; the anterior tibiae and tarsi pale ferruginous; the wings fulvo-hyaline, the nervures and tegulae rufo-testaceous; the intermediate and posterior tibiae pale ferruginous. Abdomen with the apical margins of the segments narrowly testaceous.

*Hab.* Australia.

5. *Euryglossa blanda*.

*Male*. Length 3 lines.—Head and thorax black; abdomen yellow. Antennae fulvous beneath towards the apex; the tibiae and tarsi yellow, as well as the tips of the femora, the latter obscurely rufo-piceous; the wings hyaline, the nervures pale rufo-testaceous. Abdomen sulphur-yellow, with a triangular black macula at the base.

*Hab.* Western Australia.

6. *Euryglossa jucunda*.

*Male*. Length  $3\frac{1}{2}$  lines.—Head and thorax black; the abdomen blue or blue-green. Head sometimes nigro-aneous; the vertex closely and finely punctured; the clypeus shining, convex, and with scattered punctures; the flagellum of the antennae bright fulvous beneath; the mandibles ferruginous in the middle; a little white pubescence at the sides of the face. The mesothorax and scutellum shining, and with fine distant punctures; the metathorax smooth and shining; wings hyaline, the nervures and tegulae pale testaceous; the legs obscure rufo-piceous, with the tarsi pale. Abdomen with the apical margins of the segments more or less narrowly obscure rufo-piceous.

*Hab.* Champion-Bay district and Swan River.

This species might be taken for a small form of *E. depressa*, but is at once distinguished by having the underside of the flagellum fulvous.

7. *Euryglossa maculata*.

*Male*. Length  $2\frac{3}{4}$  lines.—Head and thorax black; abdomen brownish black, with yellow maculae laterally; the flagellum fulvous beneath; a little thin hoary pubescence on the face and cheeks. Thorax smooth and slightly shining; the legs yellow; wings hyaline and splendidly iridescent, the nervures and tegulae yellow. The second, third, and fourth segments of the abdomen with a large yellow macula laterally, which is almost the width of



the segment; the fifth and sixth segments entirely yellow; beneath of a reddish yellow.

*Hab.* Swan River.

8. *Euryglossa nitidifrons*.

*Female.* Length  $2\frac{1}{2}$  lines.—Shining black; the abdomen with yellow maculae laterally. Head with scattered fine punctures on the vertex; the clypeus shining and having scattered strong punctures; the mandibles yellow, with their tips rufo-piceous; the flagellum fulvous beneath. The anterior tibiae and tarsi pale ferruginous, as well as the intermediate tibiae in front and the apical joints of the tarsi; the wings hyaline and iridescent, the tegulae and nervures pale testaceous. The second, third, and fourth segments of the abdomen with a large yellow macula laterally, their form being an elongated triangle, the fifth and sixth segments entirely yellow; the abdomen yellow beneath.

*Hab.* Australia.

This species somewhat resembles *E. maculata*, but is readily distinguished from it by its yellow mandibles and by the form of its abdomen, which is broader and much more rounded; the maculae are also of a different form.

9. *Euryglossa rubricata*.

*Female.* Length  $2\frac{1}{2}$  lines.—Head and thorax nigro-aneous, the abdomen ferruginous. Head with a little pale fulvous pubescence on the vertex; the flagellum of the antennae fulvous beneath; the mandibles ferruginous at their apex. Thorax above with short dense fulvous pubescence; the wings hyaline and iridescent, their nervures and tegulae pale rufo-testaceous; the anterior and intermediate tibiae and tarsi pale ferruginous; the scopa on the posterior tibiae glittering white. The abdomen oblong-ovate, pointed at the base and apex; the second, third, and fourth segments with a fuscous macula at their extreme lateral margins.

*Hab.* Swan River.

10. *Euryglossa flavopicta*.

*Female.* Length 3 lines.—Head and thorax yellow, with black markings; abdomen yellow at the base; the eyes and a narrow line crossing the vertex at their summit and enclosing the ocelli black; two narrow black lines emanate from the line and pass down the face to the insertion of the antennae; the flagellum fulvous beneath. Three longitudinal lines on the mesothorax, a transverse line on the scutellum, and a triangular spot beneath the postscutellum black; the tibiae and tarsi more or less rufo-fuscous above. Abdomen with a transverse line, attenuated in the

file, on the basal segment, its apical margin, that of the second segment, and all the following segments piceous; the extreme lateral margins of these segments narrowly black; beneath yellow, the margins of the segments ferruginous.

*Hab.* Champion Bay.

#### 11. *Euryglossa halictiformis*.

*Male.* Length  $2\frac{1}{2}$  lines.—Black, with the base of the abdomen obscure reddish brown. The face with a thin griseous pubescence; the clypeus strongly punctured; the flagellum fulvous beneath; the tips of the mandibles ferruginous. Thorax opaque, very closely and finely punctured above; the metathorax shining; the tibiae and tarsi pale ferruginous, the former more or less fuscous above; the scopa on the posterior tibiae white; wings hyaline and splendidly iridescent, the nervures and tegulae pale testaceous. Abdomen oblong-ovate, shining, with three basal segments reddish brown, with their apical margins palest; the segments beneath tinged with long white pubescence.

*Hab.* Swan River.

This species much resembles the European *Halictus nitidiusculus*.

#### 12. *Euryglossa villosula*.

*Male.* Length  $3\frac{1}{4}$  lines.—Black; the head and thorax with long, erect pubescence, the abdomen with yellow maculae; the flagellum fulvous beneath. The legs yellow, with the coxae black; wings clear hyaline and splendidly iridescent. Abdomen ovate, with a silky lustre; the second, third, and fourth segments with a yellow macula at their extreme lateral margins.

*Hab.* Swan River.

#### 13. *Euryglossa tricolor*.

*Female.* Length  $3\frac{1}{2}$  lines.—Head and thorax black; base of the abdomen red, the apex blue. The head very closely punctured on the vertex; the clypeus convex, shining, and with distant punctures, the margin with pale ciliae; the flagellum of the antennae fulvous beneath; tips of the mandibles rufo-piceous. The mesothorax and scutellum shining and with fine distant punctures; the metathorax shining, rounded, and impunctate; wings hyaline and iridescent, the nervures ferruginous; the apical joints of the tarsi pale rufo-testaceous. Abdomen with the three basal segments ferruginous, with a dark macula in the middle of one or more of the segments, the two apical ones blue.

*Hab.* Swan River.

**STILPNOSOMA**, Smith.

*Head* as wide as the thorax, the vertex very convex; the *ocelli* in a curve; the *mentum* more than twice the length of the labium; the *labium* broadly obtuse at the apex; the *paraclyssae* rounded at their apex and as long as the labium; the *labial palpi* 4-jointed, the basal joint rather longer than the second, the third and fourth of about equal length, the apical joint cylindrical, the joints short and stout; the *maxillary palpi* 6-jointed, the three basal ones stout and of nearly the same length, the three apical ones much more slender and clavate, the apical one pointed at the apex; the *mandibles* bidentate. *Thorax* ovate; the *anterior wings* with one marginal and two submarginal cells; the marginal as long as the two submarginals; the first submarginal twice as long as the second, which is subquadrate, slightly widened to the apex, and receiving both the recurrent nervures, the first at its base, the second a little before the apex. *Abdomen* ovate. The insect almost destitute of pubescence.

In this genus the neururation of the wings is nearly that of the second division of *Prosopeia*, but the large subglobose head and the form of the labium distinguish it from that genus; the tongue in the genus *Lioproctus* is very similar, but that genus has three submarginal cells in the anterior wings.

**1. Stilpnosoma levigatum.**

*Female.* Length 5 lines.—Head and thorax bright green, the abdomen dark blue-green, highly polished, smooth, and shining. Head with very fine scattered punctures; the clypeus convex; the flagellum fulvous beneath, the apical joint entirely so. Thorax with very fine scattered punctures above, beneath more closely and strongly punctured; the legs dark obscure blue or blue-green, tinted more or less with obscure rufo-piceous; the legs with a thin, short, white pubescence, most dense on the tarsi, the apical joints rufo-testaceous; the posterior tibiae serrated at their base above, the calcaria pale testaceous. Abdomen impunctate above, the fourth and fifth segments with a few scattered shallow punctures; beneath punctured, with the margins of the segments impunctate. Smooth, and shining.

*Hab.* Queensland.

## PROSOPIS, Fabr.

1. *The first recurrent nerve not entering the second submarginal cell.* (Sp. 1-19.)

1. *Prosopis obtusata.*

Length  $4\frac{1}{2}$  lines.—Head and thorax black, with yellow on the abdomen obscurely blue-black. The head orbiculate and acute anteriorly, closely punctured; a large triangular yellow spot on each side of the face, the inner angle of each reaching the insertion of the antenna. Thorax closely punctured, truncate behind, the truncation somewhat concave; a large yellow spot on the wings, on the tubercles; the scutellum and post-scutellum yellow, the anterior margin of the former rounded in the middle; the wings hyaline and iridescent. Abdomen shining and closely and closely punctured.

Loc. Swan River.

2. *Prosopis purpurata.*

Length  $3\frac{1}{2}$  lines.—Head and thorax black and variegated with yellow; the abdomen purple. Head oblong-ovate, somewhat narrowed anteriorly; the face below the antennae and on each side close to the eyes a little above their insertion, as well as the scape of the antennae in front, bright yellow; the mandibles ferruginous; the flagellum fulvous and slightly fuscous above. Thorax truncate behind, with the enclosed space at its base above finely rugose; an interrupted line on the collar, the tubercles, scutellum, and postscutellum yellow; wings clear hyaline and slightly iridescent; the anterior tibiae in front and the femora with yellow; the legs rufo-piceous, posterior pair obscurely so; tarsi pale ferruginous.

Loc. Adelaide.

3. *Prosopis quadriceps.*

Length 3 lines.—Black and elongate; the head quadrate a little wider than the thorax; the entire insect closely and finely punctured and subopaque; the face with a large yellow regular spot on each side, the flagellum fulvous beneath. Thorax with the tubercles yellow, the metathorax smooth and shining; the tibiae and tarsi obscurely rufo-piceous, the anterior pair palest, the posterior tibiae yellow at their base; the wings hyaline and iridescent. The abdomen oblong.

Loc. Australia.

4. *Prosopis cognata*.

*Female*. Length  $3\frac{1}{2}$ –4 lines.—Head and thorax black, with yellow spots; the abdomen dark blue. Head closely punctured; the clypeus slightly produced and anteriorly truncate; on each side of the face there is a large crescent-shaped yellow spot, extending upwards above the insertion of the antennæ; the flagellum fulvous beneath. Thorax closely punctured; the tubercles and a spot on the scutellum and on the postscutellum yellow, that on the scutellum semicircular; the metathorax truncate; legs black. Abdomen shining and with fine punctures.

*Male*. Length  $3\frac{1}{2}$  lines.—Closely resembling the female, but with the face entirely yellow as high as the antennæ; the flagellum fulvous beneath. Thorax as in the female; the anterior tibiæ and first joint of the tarsi in front, the femora beneath at their apex, and the intermediate tibiæ in front yellow; wings and abdomen as in the female.

*Hab.* Champion Bay; Swan River.

This species closely resembles *P. obtusata*, but differs from it in the form of the head, the clypeus being produced.

5. *Prosopis elongata*.

*Male*. Length 4 lines.—Black, and with yellow markings; the abdomen one third longer than the head and thorax. The head subrotundate, only a little longer than broad; the face as high as the antennæ yellow; the flagellum fulvous beneath. Thorax very finely and closely punctured; the tubercles, scutellum, and postscutellum yellow; the metathorax truncate, opaque, and with a thin griseous pubescence; the anterior tibiæ and tarsi ferruginous, the former fuscous behind. Abdomen shining, very finely and closely punctured; the margins of the first and second segments slightly constricted.

*Hab.* Adelaide.

6. *Prosopis bituberculata*.

*Male*. Length 3 lines.—Black, variegated with yellow; the third ventral segment of the abdomen produced laterally into a large, subtriangular, compressed tubercle. Head rotundate; the face as high as the antennæ bright yellow; the scape dilated, the flagellum fulvous beneath. Thorax very closely and finely punctured; the tubercles and a slightly interrupted line on the collar yellow; the anterior tibiæ in front, the intermediate pair with a line in front, and the basal joint of the tarsi, the posterior tibiæ at their base, and the first joint of the tarsi yellow; wings hyaline and irides-

Abdomen shining and delicately punctured; beneath not so and more distantly punctured than above.

*Hab.* Melbourne.

#### 7. *Prosopis honesta*.

*♂*. Length 4 lines.—Black, with yellow markings; the abdomen nearly purple. The clypeus and the face on each side of it, only as high as the antennæ, yellow; the flagellum very obscurely fulvous beneath. Thorax closely punctured; the scutellum and mesoscutellum each with a semicircular yellow spot; the tubercles, anterior and intermediate tibiae in front, and the basal joint of the posterior tarsi yellow; wings hyaline and iridescent. Abdomen shining and closely punctured.

*Hab.* Tasmania.

#### 8. *Prosopis rotundiceps*.

*♂*. Length  $4\frac{1}{2}$  lines.—Black, with yellow markings; the head subulate, anteriorly truncate. A large ovate macula on each side of the face, nearly as high as the insertion of the antennæ; the scutellum fulvous beneath. Thorax closely punctured; the scutellum and postscutellum, as well as the tubercles, yellow; legs obscure rufo-piceous; wings hyaline and iridescent. Abdomen shining and very finely punctured, and having a purple tint in certain lights.

*Hab.* Melbourne.

#### 9. *Prosopis amacula*.

*♂*. Length  $2\frac{1}{2}$  lines.—Black, with yellow markings. Head very closely and finely punctured; an oblong angulated spot on each side of the face, extending a little above the antennæ; the clypeus with a fine irregular striation; the flagellum fulvous beneath. Thorax very finely and closely punctured; the collar and tubercles yellow, the colouring uniting; the anterior tibiae rufo-piceous in front, and with a minute yellow spot at their base; the claw-joint of the tarsi rufo-testaceous; the metathorax truncate, the enclosed space at the base rugose; wings hyaline and iridescent. Abdomen shining, and closely and delicately punctured.

*Hab.* Champion Bay.

#### 10. *Prosopis insularis*.

*♂*. Length  $3\frac{1}{2}$  lines.—Black, with cream-coloured markings. Head subrotundate; a line on each side of the face along the orbits

of the eyes, terminating a little above the insertion of the antennae, and an ovate spot at the anterior margin of the clypeus cream-coloured; the head closely punctured. Thorax with a line on the collar attenuated in the middle, the tubercles, and a spot on the tegulae in front cream-coloured, and the basal half of the tibiae of the same colour outside; a similar coloured spot at the extreme base of the posterior tarsi; wings hyaline and iridescent; the mesothorax and scutellum shining and closely punctured; the metathorax truncate, the enclosed semicircular space at its base rugose. Abdomen shining and finely punctured, pilose towards the apex, rounded at the base and gradually narrowing to the apex, which is pointed.

*Hab.* Makassar.

#### 11. *Prosopis blackburni*.

*Female.* Length 3 lines.—Black; and closely resembling the female of *P. facilis*, but has the flagellum of the antennae fulvous beneath. The metathorax with a few short striae at the base; wings subhyaline and iridescent, the recurrent nervures uniting with the transverse nervures of the second submarginal cell, as in *P. facilis*. The abdomen smooth, shining, and impunctate.

*Male.* The size of the female; the front of the head, as high as the antennae, yellow, the scape with a yellow line in front, the flagellum fulvous beneath. The tibiae and tarsi yellow, with a small black spot on the tibiae behind, and the apical joint of the intermediate and posterior tarsi fusco-ferruginous; wings and abdomen as in the female.

*Hab.* Sandwich Islands, island of Maui.

It will be seen that the male of this species differs greatly in colouring from the same sex of *P. facilis*, although the females have little specific distinction.

#### 12. *Prosopis fuscipennis*.

*Male.* Length 4½ lines.—Black. The head and thorax semiopaque; the abdomen smooth, very finely punctured, sparsely so at the base, bright and shining; wings fuscous, inclining to fulvous, and brightly iridescent. The head closely and finely punctured; the clypeus somewhat produced, and truncate anteriorly; the scape of the antennae compressed, its lower margin narrowly white. The margin of the prothorax white; the mesothorax and scutellum closely punctured; the metathorax rugose; the anterior tibiae and tips of the femora fulvous within, the four apical joints of the tarsi rufo-testaceous.

*Hab.* Sandwich Islands.

This species occurs rarely on the mountains of Oahu. The male, Blackburn has found a single female, which differs from the male in having the body shorter and stouter, with the terminal segments pointed, and the basal joint of the antennae cylindrical.

### 13. *Prosopis facilis*.

Length  $3\frac{1}{2}$  lines.—Black; the head and thorax very closely finely punctured; abdomen shining and impanetate. Head subcylindrical; the clypeus coriaceous, with some large shallow punctures here and there. The mesothorax with a short imbricated line over the tegulae; the metathorax with short longitudinal striae at the base, the sides having a little white pubescence; the wings fusco-hyaline, hyaline at their base, and brightly lutescent. Abdomen smooth, shining, and impanetate.

Very like the female, but more slender; the clypeus and antennae at its lateral margins, on the face, yellow; the scape of the antennae swollen, but black. The anterior tibiae and tarsi in front, and also the apex of the femora yellow; the wings paler than in the female; the base of the intermediate and posterior tibiae rufous. Abdomen oblong-ovate, smooth, shining, and impanetate.

*Hab.* Island of Maui.

### 14. *Prosopis hiliaris*.

Length 3 lines.—Head and thorax black, the two basal segments and the base of the third ferruginous. Head with the front high as the antennae, and on each side, along the margin of the face, a little above them, yellow; the scape of the antennae and the mandibles yellow, the latter ferruginous at their tips; the scape dotted; the flagellum ferruginous. The legs ferruginous, with the tibiae and femora towards their base black; wings hyaline and lutescent, their apex faintly clouded; the metathorax subrugose. Abdomen smooth and shining.

*Hab.* Occurs rarely on flowers in the island of Maui.

### 15. *Prosopis volatilis*.

Length 3 lines.—Head and thorax black, the two basal segments of the abdomen ferruginous. Head with the front, below the antennae, yellow; the flagellum fulvous, and more or less fusca above; the scape has a fulvous line in front; the mandibles ferruginous towards their apex. The anterior tibiae, tarsi, and tips of the femora ferruginous; the metathorax finely rugulose, opaque,



and with a few short striae at the base; wings subhyaline, and iridescent, faintly clouded at their apex. Abdomen smooth and shining; the apical margin of the second segment and the following segments black.

*Hab.* Island of Kauai.

"Taken sparingly on flowers" (*Rev. T. Blackburn*).

#### 16. *Prosopis rugosa*.

*Male.* Length  $2\frac{3}{4}$  lines.—Black, and with pale yellow markings: the thorax coarsely rugose. Head below the antennae and a little above them at the margin of the eyes, the scape in front, and first joint of the flagellum, the labium, and mandibles pale yellow; the flagellum fulvous beneath. Thorax with a line on the collar, the tubercles, a minute spot on the tegulae, the tibiae and tarsi, as well as the scutellum, yellow; the coxae, trochanters, and femora, as well as the apical half of the posterior tibiae, rufopiceous; the metathorax truncate and covered with fine hoary pubescence, the enclosed space at the base shining and longitudinally deeply sculptured; wings hyaline and iridescent. Abdomen shining, and with a few scattered fine punctures at its base; the base rounded, thence gradually narrowing to a point at its apex; on the apical margins of the two basal segments, laterally, there is a narrow line of white pubescence.

*Hab.* Brazil, St. Paulo.

#### 17. *Prosopis vigilans*.

*Female.* Length 3 lines.—Black, with yellow markings; the thorax strongly punctured. Head with a broad stripe along the inner orbits of the eyes, running upwards nearly to their summit, and a broad line down the middle of the clypeus yellow; the flagellum fulvous beneath. Thorax with the collar, the tubercles, a spot on the tegulae in front, the scutellum, and a small ovate spot at each of its anterior angles, the anterior tibiae outside, and the intermediate and posterior pairs at their base yellow; the tarsi fusco-ferruginous; the mesothorax with a black velvety texture anteriorly; the metathorax concavely truncate, and with a fine hoary pilosity; the enclosed space at the base longitudinally grooved; wings subhyaline and iridescent. Abdomen shining and impunctate, rounded at the base, and narrowing gradually to a point at its apex; a little white pubescence on the apical margins of the two basal segments laterally.

*Hab.* Val de Fuego, Central America.

18. *Prosopis maculipennis*.

*Male*. Length  $2\frac{1}{2}$  lines.—Black, with yellow markings; the wings blue and iridescent, a fuscous cloud occupying the marginal cell extending beyond to the apex of the wing. The face below antennae yellow; the antennae fulvous beneath. Thorax coarsely punctured; a line on the collar, the tubercles, a spot on the tegulae in front, the tibiae and tarsi yellow; the tips of the intermediate and posterior tibiae black; the metathorax truncate and with hoary pubescence, the enclosed space at its base coarsely punctured. Abdomen with the basal segment rather strongly punctured, the following segments more closely and finely so; the apical margin of the second and following segments with fasciae of white pubescence.

*Hab.* Mexico, Oajaca.

19. *Prosopis trepanda*.

*Male*. Length 3 lines.—Black, with yellow markings; the head and thorax opaque, the abdomen shining. The face on each side of the clypeus, and a line running up nearly to the summit of the clypeus, and a line down the middle of the clypeus yellow; the flagellum fulvous beneath. Thorax coarsely punctured; the collar, tubercles, a spot on the tegulae in front, the scutellum and a spot at each of its anterior angles, the anterior tibiae in front, and the intermediate and posterior pair at their base yellow; the apical joints of the tarsi ferruginous; wings subhyaline and iridescent. Abdomen impunctate; the base rounded, thence gradually narrowing to a point at the apex; an elongated patch of white pubescence on the basal segment laterally, a little before the apical margin, and a line on the apical margin of the second segment laterally.

*Hab.* Mexico, Oajaca.

PL. II. *The first recurrent nerve entering the second submarginal cell.* (Sp. 20-23.)

20. *Prosopis lateralis*.

*Male*. Length 3 lines.—Tilo-coloured red, with the head and metathorax black. The clypeus, labrum, and mandibles red; the antennae also red; a narrow white line at the inner orbits of the eyes. The sternum black; the coxae, trochanters, and femora blackish, with their articulations reddish; the legs otherwise red; wings hyaline and iridescent. Abdomen very convex and subobovate.

*Hab.* Western Australia, Champion Bay.

21. *Prosopis proxima*.

*Female*. Length  $2\frac{1}{2}$  lines.—Black, with the mesothorax above and the two basal segments of the abdomen red. The antennæ, clypeus, labrum, and mandibles red; a narrow white line on each side of the face, close to the eyes, white, the line not running higher than the antennæ; the anterior and intermediate tibiae and tarsi red, the latter tibiae fuscous above; the articulations of the posterior legs reddish; wings hyaline and iridescent. Abdomen shining.

*Hab.* Western Australia, Champion Bay.

This species resembles *P. lateritia*, but, independent of the difference in size, the colouring of the abdomen must indicate more than a variety.

22. *Prosopis albomaculata*.

*Female*. Length  $2\frac{1}{2}$  lines.—Black, with white markings. The face with a large angulated white macula on each side, that extends a little above the antennæ; the anterior margin of the clypeus, the labrum, and tips of the mandibles ferruginous; the mandibles white; the antennæ fulvous beneath. Thorax finely and closely punctured; an interrupted line on the collar, the tubercles, tegulae, anterior tibiae, and the base of the intermediate and posterior pairs white; the tarsi pale rufo-testaceous; the metathorax rounded; the wings hyaline and iridescent. Abdomen with a rufo-testaceous spot at its extreme base, and the apical margins of the segments narrowly testaceous.

*Hab.* Swan River.

23. *Prosopis varicolor*.

*Female*. Length 4 lines.—Varied in colour, with shades of blue, green, and purple. A white stripe at the inner orbits of the eyes, not reaching their summit; the head and thorax closely punctured; between the antennæ a minute white spot; the margin of the prothorax bordered with white; the enclosed space at the base of the metathorax smooth, shining green; wings hyaline, with dark nervures; the claw-joint of the tarsi pale ferruginous. Abdomen with very fine shallow punctures, bright and shining, with rich shades of purple-green and blue above; beneath bright green.

*Hab.* Queensland, Port Bowen.

111. *Both the recurrent nervures entering the second submarginal cell.* (Sp. 24-28.)

#### 24. *Prosopis penetrata*.

*Male.* Length 6 lines.—Black, shining, and with the apical segments of the abdomen thinly covered with hoary pubescence. Head white anteriorly; a white longitudinal stripe on the clypeus, and a white line above it between the antennae, white; the antennae inserted in a cavity on each side of the face, and ferruginous beneath. Thorax with an interrupted line on the collar, the tubercles, a triangular spot on the scutellum, and a minute one at its anterior or posterior angles white; sometimes a minute white spot on the postscutellum; the mesothorax evenly punctured; the tarsi with a grey pubescence, and the claw-joint ferruginous; the wings hyaline and iridescent; the metathorax truncate, with the enclosed area at its base smooth and shining. Abdomen very finely punctured at the base, more strongly so towards the apex.

*Hab.* Australia.

#### 25. *Prosopis torrida*.

*Male.* Length 4 lines.—Black, with the head, mesothorax above, and the abdomen more or less red. Head closely punctured, the clypeus black. Thorax with a narrow fringe of white pubescence on the collar; the tubercles, a spot on the tegulae in front, the hinder margin of the scutellum, and the postscutellum white; the enclosed area at the base of the metathorax longitudinally striated; the mesos hyaline and iridescent. Abdomen closely punctured, and usually more or less black towards the base.

*Hab.* Queensland.

This conspicuous species varies in the markings on the scutellum and postscutellum: sometimes the former has a broad white margin, the latter having only a short white line. Probably a series of specimens would show many variations in these markings.

#### 26. *Prosopis rubricata*.

*Male.* Length 4-4½ lines. Red, with yellow markings: the scutellum, metathorax, pectus, and legs black. Antennae red; the tubercles, and a patch behind but united with them in colour, a large macula on the scutellum, and the postscutellum yellow: the base and tarsi more or less obscurely red; wings hyaline and iridescent, the nervures ferruginous; the mesothorax closely punctured. Abdomen finely punctured; beneath more or less black towards the base.

*Hab.* Swan River.

27. *Prosopis morosa*.

*Female*. Length 5 lines.—Black, with yellow markings. The clypeus with an oblong macula as wide as the clypeus above, and tapering to an obtuse point near to the anterior margin; the flagellum fulvous beneath. Thorax closely punctured; the tubercles, scutellum, and postscutellum yellow; the enclosed space at the base of the metathorax smooth. Abdomen closely and finely punctured; the apical margins of the segments very narrowly rufopiceous.

*Hab.* Australia.

28. *Prosopis simillima*.

*Female*. Length 4 lines.—Black, with yellow markings. The head closely punctured; the face on each side of the clypeus yellow; the flagellum of the antennae fulvous beneath. Thorax subopaque, closely and finely punctured; the tubercles, scutellum, and postscutellum yellow; wings hyaline and iridescent; the metathorax truncate, the enclosed space at its base rugose. Abdomen shining, very closely and finely punctured.

*Hab.* Moreton Bay.

This species is from the same locality as *P. confusa*, Smith, and, excepting in the colour of the abdomen, very closely resembles it; but the head of *P. simillima* is much narrower anteriorly, the insect is smaller, and the thorax much more finely punctured.

## SPHECODES, Latr.

1. *Sphcodes volatilis*.

*Male*. Length  $3\frac{1}{2}$  lines.—Black, the abdomen shining. Head very closely punctured, opaque; the face densely covered with silvery-white pubescence, also a thin pale pubescence on the vertex and cheeks; tips of the mandibles ferruginous; antennae submoniliform. Thorax strongly and closely punctured above, the metathorax coarsely rugose at the base; wings hyaline and iridescent, the nervures pale rufotestaceous; the apical joints of the tarsi ferruginous. Abdomen very finely punctured; the apical margin of the first segment bright rufopiceous.

*Hab.* Trans-Baikal.

2. *Sphcodes rufiventris*.

*Female*. Length  $4\frac{1}{2}$  lines.—Head and thorax black, wings fuscous, abdomen red. The head closely punctured; the face before the antennae densely covered with white pubescence; the clypeus

very punctured, the mandibles ferruginous. Thorax strongly punctured; the metathorax truncate and rugose at the base; wings fuscous, with a violet iridescence; legs and abdomen ferruginous, latter shining and finely punctured, the apical margins of the tarsi narrowly impunctate.

*Hab.* Natal.

### 3. *Sphecodes albifrons*.

*Male*. Length 5 lines.—Head and thorax black; the face below the mouth densely covered with short white downy pubescence; the antennae ferruginous. The antennae submoniliform; the head and thorax very strongly punctured; the metathorax truncate and shining at the base; wings fuscous, palest at their base; the legs with a glittering hoary pile; the apical joints of the tarsi ferruginous. Abdomen ferruginous, shining, and finely punctured.

*Hab.* Bombay district.

### 4. *Sphecodes montanus*.

*Male*. Length  $3\frac{1}{2}$  lines.—Head and thorax black; abdomen red, with the apex black. Head transverse, very closely punctured; antennae obscurely fulvous towards their apex. Thorax strongly punctured, the punctures confluent on the sides and beneath; the metathorax truncate, the enclosed space at its base longitudinally rugose; wings subhyaline and iridescent. Abdomen with the three basal segments red, the apical margin of the third, and the following segments entirely, black; base of the abdomen smooth and shining, impunctate; the second and third segments with a few fine punctures at their base.

*Female*. The size of the female.—Head wider than the thorax, the face with short white pubescence; the antennae submoniliform, rufopiceous beneath. The thorax above with strong distant punctures; on the sides, beneath, and on the metathorax the punctures are confluent; wings as in the female; legs obscurely rufopiceous; the metathorax truncate, the truncation coarsely rugose. Abdomen with the three basal segments red, shining, and with fine distant punctures.

*Hab.* Northern India, Masuri, at an elevation of 7000 feet.

### 5. *Sphecodes iridipennis*.

*Female*. Length  $2\frac{1}{2}$  lines.—Head and thorax black; the first, second, and the base of the third segment of the abdomen red; the other segments black. Head subglobose, shining, and very finely punctured.

tured; the antennae rufo-piceous. The mesot. orax shining, a with fine distant punctures, the sides closely and strongly punctured; the metathorax rugose, the enclosed space at its base with longitudinal grooves; the wings clear hyaline and splendidly iridescent; the nervures and tegulae rufo-testaceous. Abdomen impunctate.

*Hab.* Northern India.

#### 6. *Sphecodes pilosulus*.

*Female.* Length  $4\frac{1}{2}$  lines.—Head and thorax black; abdomen red with the extreme base and apex black; a fine hoary pile on the segments beyond the basal one. Head opaque, very closely and finely punctured; the face and cheeks with short white pubescence. Thorax closely punctured, clothed on the sides and beneath with white pubescence; the enclosed space at the base of the metathorax longitudinally grooved; wings subhyaline and iridescent. Abdomen shining, impunctate at the base and very delicately beyond; a black macula at the extreme base and a second in the middle of the segment; beneath black, with the apical margins of the segments red.

*Male.* Closely resembles the female, but has the abdomen more elongate; the basal segment has three black maculae on the first segment, probably sometimes forming a transverse band, leaving the extreme base red; the extreme apex of the abdomen is also red; beneath red, with the base and apex black.

*Hab.* Mexico, Oajaca.

#### 7. *Sphecodes crassicornis*.

*Male.* Length  $2\frac{1}{2}$  lines.—Head, thorax, and the base and apex of the abdomen black, the intermediate portion red. Head transverse, rather wider than the thorax, closely punctured; the face covered with white pubescence; the antennae incrassate, obscurely rufo-piceous beneath, and submoniliform. Thorax strongly punctured, the metathorax rugose, the sides and beneath covered with hoary pubescence, the legs with hoary pile; the apical joints of the tarsi rufo-testaceous; wings hyaline and iridescent, the nervures and tegulae rufo-testaceous. Abdomen closely punctured, the basal segment most strongly so.

*Hab.* Bombay district.

#### 8. *Sphecodes sodalis*.

*Male.* Length  $2\frac{1}{2}$  lines.—Head, thorax, and the base and apex of the abdomen black, the apex of the first segment, the second and

and the base of the fourth red. The head closely and strongly punctured; the face with white pubescence; the antennæ subform and rufo-piceous beneath. Thorax very strongly punctured and having a thin, short, hoary pubescence at the sides; wings green and iridescent, the nervures ferruginous, the tegulae pale testaceous; the legs with a hoary pile, the apical joints of the male ferruginous. Abdomen closely and finely punctured.

Calcutta.

## TEMNOSOMA, Smith.

### 1. *Temnosoma smaragdinum*.

Length  $3\frac{1}{2}$ -4 lines.—Green, with tints of blue; coarsely punctured. Head quadrangular; the antennæ black, the anterior portion of the clypeus truncate. The disk of the thorax usually with more or less of a brassy tint; the metathorax at the base with semicircular space longitudinally striated, the striae coarse; and the striated space is a small smooth shining one; this has sometimes a few transverse fine striae, these are more or less obsolete in different examples; the other parts of the metathorax closely punctured; wings subhyaline and iridescent, the nervures black, the tegulae green and punctured; legs blue, usually more or less tinted with green. Abdomen with the first and second segments constricted; the apical margins of the segments narrowly smooth, and shining; beneath green, and more finely punctured than above.

Hab., South Mexico.

### 2. *Temnosoma æruginosum*.

Length  $4\frac{1}{2}$  lines.—Head and thorax green, with shades of blue; abdomen blue, with tints of green in certain lights. Head strongly punctured; the vertex with blue tints; the antennæ black. Thorax strongly punctured, the punctures confluent at the sides of the mesothorax above, which has a central strongly impressed longitudinal line; at the base of the metathorax are a few broad striae that radiate laterally, the striated portion enclosed by a smooth shining space, beyond which the metathorax is strongly punctured; wings subhyaline, clear at their base, the tegulae green and strongly punctured, the nervures black; legs blue, the tarsi closely covered with short whitish pubescence. Abdomen oblong, strongly punctured, the margins of the two basal segments constricted; the fourth and fifth segments with a thin pale pubescence, the sixth with fuscous pubescence; beneath bright green, and more finely punctured than above.

Hab., Ego, on the Amazons.



This species is distinguished from the typical one, *T. metallicum* by the different sculpturing of the metathorax.

### 3. *Temnosoma levigatum*.

*Female*. Length 3 lines.—Head and thorax green, strongly punctured, with shades of blue on the vertex; abdomen blue-green, smooth, shining, and impunctate. Head subquadrate, with the antenna black. The metathorax with a few strong divergent striae, which are enclosed by a smooth impunctate shining space, beyond which it is punctured; wings hyaline and iridescent, slightly clouded towards their apical margins, the nervures black, the tegulae impunctate, smooth, and shining green; the legs green. Abdomen, the two basal segments with their margins slightly constricted.

*Hab.* St. Paulo, on the Amazons.

## HALICTUS, Latr.

### 1. *Halictus senescens*.

*Female*. Length  $3\frac{1}{2}$  lines.—Black, with hoary pubescence. The head pubescent, most dense on the face and cheeks; the flagellum fulvous beneath. Thorax sparingly pubescent on the disk, which is finely punctured; the postscutellum thickly covered with a downy white pubescence, on the sides and beneath thinly pubescent; the legs rufo-piceous and pubescent, very bright and glittering on the tarsi; wings hyaline and iridescent, the nervures and tegulae rufo-testaceous. Abdomen ovate, the base pubescent; at the basal margin of the second and third segments there is a narrow fascia of fine short pubescence, and a broader fascia on the apical margins of the third and fourth; on the apical segment the pubescence is pale fulvous; beneath, the segments are fringed with long pubescence.

*Hab.* Bombay district.

### 2. *Halictus vernalis*.

*Female*. Length  $2\frac{1}{2}$  lines.—Bright metallic green. The head very closely and finely punctured, somewhat rounded, with the clypeus slightly produced, its apical portion shining, of a purple colour, and with a few strong punctures; the flagellum fulvous beneath; the sides of the face with short pale pubescence. Thorax shining, finely punctured; the metathorax finely rugulose at the base, and with a smooth shining space beyond; wings hyaline and iridescent, the nervures and tegulae pale testaceous; the legs pale ferruginous.

feet darkest. Abdomen ovate, the apical margins of the segments depressed, and with fasciæ of pale fulvous pubescence.

Ceylon.

### 3. *Halictus timidus*.

*♂*. Length  $2\frac{1}{2}$  lines.—Black, with the base of the abdomen testaceous. Head orbiculate, the face covered with short white pubescence; the mandibles ferruginous; the antennae testaceous. Thorax thinly pubescent above, on the sides, beneath, and on the legs cinereous, and very bright and glittering on the head and tarsi, the legs being pale ferruginous; wings hyaline and iridescent, the nervures and tegulae rufo-testaceous, the post-scutum with white pubescence. Abdomen with the three basal segments rufo-testaceous, the following segments obscure rufo-testaceous; the apical margins of the third, fourth, and fifth segments pale testaceous and fringed with pale pubescence, as are the margins of the ventral segments.

Ceylon.

### 4. *Halictus proximatus*.

*♂*. Length 4 lines.—Black; head and thorax subopaque, abdomen shining. Head rotundate, very closely and finely punctured, the clypeus with a few strong punctures. The thorax closely punctured, the pubescence cinereous; that on the tibiae and tarsi slightly fulvous, very bright; the posterior femora with a dense fimbria of white pubescence; the wings hyaline and iridescent, the nervures and stigma fusco-ferruginous; the enclosed space at the base of the metathorax rugose. Abdomen very bright, the puncturing very fine, scarcely perceptible on the basal segment; on the basal margin of the second and third segments laterally there is a little white tomentum; the apical segment with griseous pubescence, that on the margins of the anal rima faintly fulvous.

*Hab.* Hakodaté, Japan.

This species is extremely like *Halictus leucozonius* of Europe: it differs from it in having the head orbiculate: in the European insect the clypeus is produced.

### 5. *Halictus familiaris*.

*♂*. Length  $3\frac{1}{2}$  lines.—Black, the head and thorax closely and finely punctured, slightly shining; abdomen ovate, very smooth and shining. The clypeus produced and shining, finely punctured, the apex sparingly so; the flagellum of the antennae obscurely fulvous beneath. The pubescence on the sides of the thorax, beneath, and on the legs very pale fulvous, brightest on the tibiae and tarsi; the wings hyaline and iridescent, the nervures pale tes-

taceous; the enclosed space at the base of the metathorax rugose. Abdomen with a narrow pubescent fascia at the basal margins of the second and third segments, and a slight one on the apical margins of the two following segments; the anal rima margin with pale fulvous pubescence.

*Hab.* Hakodaté.

This species closely resembles *H. albipes* of Europe.

#### 6. *Halictus albo-zonatus*.

*Female.* Length  $3\frac{1}{2}$  lines.—Black; head and thorax very finely punctured; abdomen smooth and shining. The clypeus slightly produced, shining, and strongly punctured; the face with a thin griseous pubescence; the flagellum of the antennæ fulvous beneath. Thorax shining; the postscutellum covered with white tomentum; the metathorax with coarse striae at the base, the rest smooth and shining; the legs rufo-testaceous, their pubescence white, and the apical joints of the tarsi pale ferruginous; wings hyaline and iridescent, the nervures ferruginous. Abdomen with the basal margins of the segments with snow-white pubescent fasciae.

*Hab.* Punjab.

#### 7. *Halictus torridus*.

*Female.* Length 6 lines.—Black, with the basal and apical margins of the first and second segments of the abdomen ferruginous; the apical margins of the following segments pale testaceous. Head oblong, the clypeus much produced, shining, and strongly punctured, the apex usually rufo-piceous; the sides of the face with short pale fulvous pubescence; the flagellum bright fulvous towards the apex beneath. Thorax with fulvous pubescence at the sides and beneath, also on the legs, which are rufo-piceous; wings fulvo-hyaline, their apical margins fuscous, the nervures ferruginous. Abdomen with a thin pale pubescence, that on the apical segment black.

*Hab.* Natal.

#### 8. *Halictus niloticus*.

*Female.* Length 3 lines.—Bright green. The head wider than the thorax, the vertex wide, rounded laterally, and emarginate behind; the antennæ, margin of the clypeus, and the mandibles yellow, the latter ferruginous at their apex; the flagellum pale fulvous beneath. The femora rufo-piceous, the tibiae and tarsi pale yellow, with a fuscous stain on the former beneath; wings hyaline and iridescent, the nervures and tegulae yellow-testaceous. Abdomen:

the margins of the first and second segments constricted; the 2 margins of the segments with pale fulvous fascia.

5. White Nile.

#### 9. *Halictus albo-fasciatus*.

Length 5 lines.—Black, pubescent; the first and three following abdominal segments with their apical margins white, not except. Head retundate, the face thickly covered with pale pubescence, that on the cheeks nearly white. The thorax clothed above with fulvous pubescence, on the sides and beneath it is paler; the legs rufo-piceous, the tarsi and posterior tibiae clothed with short glittering pubescence; wings subhyaline, nervures and tegulae rufo-testaceous. Abdomen smooth, slightly convex, and with a thin scattered pale pubescence, that on the 1 segment black.

6. South Africa, Burgheersdorp.

#### 10. *Halictus diversus*.

Length  $3\frac{1}{2}$  lines.—Black. The face and cheeks with thin cinereous pubescence; the clypeus produced and strongly punctured, the scutum obscurely fulvous beneath. The mesothorax and scutellum closely punctured; the postscutellum with white tomentum, also a little white tomentum at the insertion of the posterior wing; the wings subhyaline and iridescent, the tegulae and nervures dark rufo-piceous; the legs also dark rufo-piceous, the tarsi ferruginous. Abdomen smooth and shining; a band of white tomentum at the basal margins of the second and three following segments; the apical segment with sooty black pubescence; beneath the segments fringed with pale pubescence.

7. Port Natal.

#### 11. *Halictus communis*.

Length 4 lines.—Black, with the legs and abdomen rufous. Head rotundate; the clypeus very slightly produced; the sides of the face with a little hoary pubescence; the flagellum oblong, fulvous beneath, closely and finely punctured. The mesothorax, scutellum, and postscutellum not so closely punctured as head; the metathorax truncate, its base longitudinally notched, the margin of the truncation smooth and shining; the wings subhyaline and iridescent, the nervures and tegulae rufo-testaceous. Abdomen oblong-ovate, shining, and finely punctured, the base impunctate; the apical margins of the three basal

segments depressed, rufo-testaceous, and with white pubescent fasciae, usually much interrupted, that on the fourth usually entire; the anal rima fringed with fulvous pubescence.

*Hab.* South Africa.

#### 12. *Halictus vitripennis*.

*Female.* Length  $2\frac{1}{2}$  lines.—Head and thorax green, abdomen ferruginous. The head very finely and closely punctured; the flagellum of the antennae bright fulvous beneath; mandibles pale ferruginous, with their tips black. Thorax shining above, and with very delicate puncturing; legs pale ferruginous; wings colourless and splendidly iridescent. Abdomen ferruginous, with the extreme base black.

*Var.* The thorax rugose above, probably the result of imperfect development.

*Hab.* Western Australia, Champion Bay.

#### 13. *Halictus lanuginosus*.

*Female.* Length 4 lines.—Black, and covered with a downy cinereous pubescence, which is thinnest on the disk of the thorax and on the abdomen. The head and thorax closely punctured; the anterior margin of the clypeus white. The base of the metathorax finely rugulose; the legs more or less obscurely rufo-piceous; wings hyaline and iridescent; the nervures rufo-testaceous; the tarsi, sometimes only the apical joints, ferruginous. At the basal margin of the second segment of the abdomen, laterally, there is sometimes a little white tomentum.

*Male.* Length  $3\frac{1}{2}$  lines.—Very like the female, the abdomen a little more elongate, thinly covered with pubescence, as in the other sex, the head a little more elongate, and the apex of the clypeus white.

*Hab.* Australia.

#### 14. *Halictus conspicuus*.

*Female.* Length 4 lines.—Black, shining, and with six white maculae on the abdomen. Head closely punctured, rotundate, the clypeus slightly produced, with its anterior margin broadly truncate; the flagellum of the antennae fulvous beneath and rufo-piceous above. Thorax strongly punctured; wings fulvo-hyaline, the nervures and tegulae rufo-testaceous; legs rufo-ferruginous, the femora darkest. Abdomen very finely and closely punctured; the basal margins of the second, third, and fourth segments, laterally, there is a triangular patch of snow-white pubescence.

*Hab.* Australia.

15. *Halictus oblitus*.

*♂*. Length  $3\frac{1}{2}$  lines.—Black, shining, and punctured. The head very closely punctured; the face with thin pale ochraceous space; the clypeus very slightly produced, with strong punctures and truncate anteriorly; the mandibles rufo-piceous at their base. The flagellum of the antennae obscurely fulvous beneath. The thorax closely punctured; the post-scutellum with fine pale tomentum; the metathorax truncate, its base finely rugulose, the margin of the truncation narrowly smooth and shining; wings hyaline, the nervures black; the apical joints of the tarsi rufo-testaceous. The abdomen ovate, very finely punctured; at the base of the second and third segments, laterally, there is a little whitish tomentum.

*♂*. Swan River.

16. *Halictus convexus*.

*♂*. Length 3 lines.—Black, very finely and closely punctured; the head shining and delicately punctured, ovate, and very convex. The mandibles rotundate; the clypeus truncate, slightly produced, shining, with a few strong punctures; the flagellum obscurely fulvous beneath. Thorax slightly shining; wings hyaline and iridescent, the nervures testaceous; metathorax truncate, finely rugulose at base. Abdomen with a thin cinereous pubescence, shining at base; at the basal margins of the second and third segments, laterally, a little white tomentum; on the basal margin of fourth segment a continuous band of tomentum.

*♂*. Victoria.

17. *Halictus urbanus*.

*♂*. Length  $2\frac{1}{2}$  lines.—Head and thorax green, abdomen cinish black. Head dark olive-green, with a fine longitudinal line; the mandibles ferruginous at their apex; the flagellum fulvous beneath. Thorax of a much brighter green than the head, shining, of a fine coriaceous texture; the metathorax rugose at base; wings hyaline and splendidly iridescent, the nervures testaceous; legs rufo-piceous, their pubescence cinereous. Abdomen shining and impunctate, the margins of the segments rufo-piceous; beneath, the segments have a long white pubescent anal fringe.

*♂*. Champion Bay.

18. *Halictus vividus*.

*♂*. Length 2 lines.—Green, with pale ferruginous tibiae and the posterior tibiae more or less fuscous beneath. Head very closely punctured; mandibles ferruginous; the fla-

gellum bright fulvous beneath. Thorax very finely punctured and shining; the scutellum impunctate and highly polished; the metathorax very finely rugulose at the base; wings clear hyaline and iridescent, the nervures and tegulae pale rufo-testaceous. Abdomen shining, very delicately punctured, with the apical margins of the segments impunctate. A flocus of white pubescence on the posterior femora beneath.

*Male*. Rather smaller than the female. The head and thorax green; the abdomen dark reddish brown, darkest towards the apex; the clypeus and mandibles white, the flagellum of the antennae fulvous, the head delicately punctured. The thorax highly polished above; wings as in the female; legs pale rufo-testaceous. Abdomen smooth and shining.

*Hab.* Swan River.

#### 19. *Haliectus inclinans*.

*Female*. Length  $2\frac{1}{2}$  lines.—Black, with the mesothorax green. The face and cheeks with thin hoary pubescence; the anterior margin of the clypeus and the mandibles rufo-piceous; the flagellum fulvous beneath. The mesothorax very finely and closely punctured; the base of the metathorax finely rugulose; the sides of the thorax, beneath, and the legs with a fine cinereous pubescence; the legs ferruginous; wings hyaline and iridescent, the nervures and tegulae pale rufo-testaceous. Abdomen with a thin cinereous pile, with cinereous hairs towards the apex; the margins of the segments rufo-piceous; beneath, the segments fringed with cinereous pubescence.

*Hab.* Champion Bay.

#### 20. *Haliectus humilis*.

*Female*. Length 2 lines.—Black, with the mesothorax dark shining green. Head rotundate, very finely and very closely punctured; mandibles ferruginous; the flagellum obscurely fulvous beneath towards the apex. The mesothorax with very fine distant punctures; the metathorax finely rugulose at the base, the margin of the truncation smooth and shining, the sides with hoary pubescence; the anterior legs, with the knees and apical joints of the tarsi, rufo-testaceous; wings hyaline and iridescent. Abdomen smooth, shining, and impunctate; the margins of the ventral segments fringed with long white pubescence.

*Hab.* Champion Bay.

#### 21. *Haliectus punctatus*.

*Female*. Length  $2\frac{3}{4}$  lines.—Head black, the metathorax green and coarsely punctured; abdomen ferruginous, with black markings

with a longitudinal striation above the antennæ; the clypeus set, and with a few strong punctures; mandibles rufo-piceous, their tips black; the flagellum of the antennæ fulvous beneath, black at the sides and beneath; wings hyaline and iridescent; the nervures and tegulæ rufo-testaceous; legs pale ferruginous. Abdomen dark rufo-piceous in the middle, the sides bright ferruginous, smooth, and shining; the apical segment pale ferruginous and with pale pubescence.

6. Champion Bay.

## 22. *Halictus agilis*.

Length  $3\frac{1}{2}$ –4 lines.—Brassy green. The head very finely and closely punctured; the face with pale pubescence, that on the sides white; the head as wide as the thorax and rounded, with the clypeus produced moderately, its anterior margin narrowly convex; the flagellum, except one or two of the apical joints, fulvous beneath. The mesothorax and scutellum finely punctured; the base of the metathorax with irregular striation; wings clear hyaline, the nervures and tegulæ pale rufo-testaceous; all the tibiae and tibiae, as well as the anterior and intermediate femora, pale ferruginous; the coxæ, trochanters, and posterior femora dark rufo-piceous, with an aneous tinge. Abdomen ovate, shining and finely punctured, the basal margin of the second segment and the apical margin of the following with pale pubescent fasciæ.

6. Mexico, Oajaca.

## 23. *Halictus exiguus*.

Length 2 lines.—Head and thorax dark green; abdomen black, with the margins of the segments rufo-piceous. Head very large, shining and finely punctured, rounded, with the mandibles ferruginous and the flagellum fulvous beneath. The mesothorax shining and finely punctured; the base of the metathorax shining and shining, with a few faint, short striae at the extreme ends; wings hyaline and iridescent, the tegulæ and nervures pale ferruginous; the anterior tibiae and all the tarsi rufo-testaceous, the latter pale fulvous pubescence. Abdomen shining, and very closely punctured beyond the basal segment.

6. Mexico.

## 24. *Halictus vagans*.

Length 3 lines.—Shining brassy green, the abdomen oblong so beyond the basal segment. The head closely and finely punctured, rounded, with the clypeus slightly produced and of a dark colour, the face thickly covered with short pale ochraceous



pubescence; the mandibles ferruginous; the flagellum of the antennae fulvous beneath. Thorax closely punctured; the metathorax finely rugulose at the base, the margin of the truncation smooth and shining; wings hyaline, the tegulae and nervures pale rufo-testaceous; legs rufo-piceous, with the tarsi rufo-testaceous. Abdomen with a short pale pubescence, the apical margins of the segments pale testaceous.

*Hab.* Mexico, Oajaca.

This species closely resembles *H. tumbulorum* of Europe.

#### 25. *Halictus politus*.

*Female.* Length 41 lines.—Black; head and thorax opaque, abdomen shining. Head very closely punctured and thinly covered with heavy pubescence; tips of the mandibles rufo-piceous. The mesothorax and scutellum very closely punctured; the postscutellum and sides of the metathorax with pale ochraceous pubescence; the base of the metathorax irregularly longitudinally striated and posteriorly truncate; wings pale fulvo-hyaline, the nervures pale rufo-testaceous; the legs with dark fuscous pubescence. Abdomen obscure reddish brown, with a band of pale tomentum on the basal margins of the second, third, and fourth segments.

*Male.* Has a close resemblance to the female; the apex of the clypeus yellow, the head and thorax opaque, the wings with a fuscous cloud at their apex; the abdomen banded as in the female.

*Hab.* Mexico, Oajaca.

#### 26. *Halictus desertus*.

*Female.* Length 37 lines.—Black; head and thorax opaque, abdomen shining. Head rotundate, the clypeus very slightly projected; very closely and finely punctured; the face and cheeks with thin heavy pubescence. Thorax closely and finely punctured having thin heavy pubescence; the base of the metathorax very finely rugulose; wings subhyaline, the nervures testaceous, the tegulae shining black; the tibiae and tarsi with pale fulvous pubescence. Abdomen shining and very finely and very closely punctured; the basal margins of the second, third, and fourth segment with bands of whitish tomentum.

*Male.* About the same length as the female, but more slender; the head opaque; the apical half of the clypeus white, smooth, and shining. Thorax closely punctured, slightly shining; the metathorax with irregular fine striae; wings hyaline and iridescent slightly clouded at their apical margins. Abdomen oblong, and banded as in the female.

*Hab.* Mexico, Oajaca.

27. *Halictus providens*.

*♂*. Length 3 lines.—Black, with the abdomen towards the base very pubescent. Head obovate, the face very finely punctate, the vertex sparingly so and shining, the face with a thin pale pubescence. The mesothorax smooth and shining, sparingly punctate, and with a longitudinal central impressed line in front extending to the disk; the postscutellum with pale downy tomentum; the metathorax truncate, the truncation smooth and shining; the base of the metathorax with radiating striae; the wings hyaline and iridescent, the nervures and tegulae pale testaceous; the legs with whitish pubescence, the apical joints of the tarsi black. Abdomen impunctate, the base very smooth and shining; the sides of the second, and the third, fourth, and following segments covered entirely with thin pale pubescence, that at the sides of the anal rimae pale fulvous; beneath, the segments are covered with long pale pubescences.

*Loc.* Guatemala.

28. *Halictus placidus*.

*♂*. Length 4½ lines.—Head and thorax blue, abdomen ferruginous. Head subopaque, the clypeus slightly produced, truncate, with a few large punctures; the flagellum fulvous beneath; the face thinly covered with pale fulvous pubescence. Thorax shining; the metathorax truncate, its base smooth and shining; wings hyaline and iridescent, the nervures pale testaceous; the legs black, the apical joints of the tarsi ferruginous; the tarsi with whitish fulvous pubescence within. Abdomen shining, its extreme end black.

*Loc.* Chili.

## CACOSOMA, Smith.

Head about the same width as the thorax; eyes subreniform, the ocelli in a triangle on the vertex; the scape of the antennae two thirds of the length of the flagellum, which is subclavate; tongue short, not longer than the paraglossae; the labial palpi 4-jointed, the first joint subclavate and as long as the two following united, the second and third joints short, stout, and clavate, the apical joint narrower and filiform; the maxillary palpi 6-jointed, the basal joints short, stout, and clavate, the fourth and fifth joints small and slightly thickened at the apex, the apical joint about one length as the fifth joint, and slightly attenuated towards the apex, which is blunt. The anterior wings with one marginal and one submarginal cells; the first submarginal cell a little longer than the second and third united, the second narrow and very gradually narrowed towards the marginal; the third twice the width

of the second, and much narrower towards the marginal. *Adtomæ* petiolate in both sexes, in the males clavate.

Of this genus three species are at present known, but the female of the Mexican one only is described; the form of the palpi separate them from the genera previously established; the maxillary palpi are remarkable in having three stout joints and three slender ones. In the venation of the wings they agree with many other *Halicti* but the clavate form of the abdomen at once distinguishes them.

#### 1. *Cacosoma discolor*.

*Female*. Length 4 lines.—Black, with tints of green on the thorax, and with the basal segment of the abdomen rufo-piceous. Head with a thin hoary pile on the face; opaque, with the clypeus shining and having a few scattered punctures; the apex of the flagellum of the antennæ fulvous. Thorax opaque, with the collar produced laterally into an acute angular projection, which is bright green; the posterior margin of the mesothorax narrowly, and the base of the metathorax bright metallic green, the latter with fine divergent stria; the wings hyaline, iridescent, and with the anterior margin of the fore wings bordered with fuscous; legs rufo-piceous, their pubescence pale and glittering. Abdomen opaque and subpetiolate; the basal segment with a black band in the middle, and the posterior margin narrowly black; the basal margin of the third segment narrowly green; the margins of the segments beneath fringed with pale pubescence.

*Male*. Length 4 lines.—More slender than the female. The sides of the face and the clypeus green; antennæ fulvous, slightly fuscous above. Thorax, legs, and wings as in the female, the fuscous border of the latter commencing in the marginal cell. Abdomen with the two basal segments rufo-testaceous; the basal margin of the third slightly green.

*Hab.* Mexico, Oajaca.

#### 2. *Cacosoma abdominale*.

*Male*. Length  $4\frac{1}{2}$  lines.—Head and thorax brassy green, abdomen ferruginous. The face with pale fulvous pubescence; the clypeus produced; the flagellum of the antennæ fulvous beneath, above fuscous, the joints subarcuate. The mesothorax of a brassy green, the metathorax dark green, and rugose at the base; the pubescence pale fulvous; wings hyaline and iridescent, the nervures pale ferruginous; the tips of the femora, the tibia, and tarsi pale ferruginous. Abdomen smooth, shining, and ferruginous.

*Hab.* Chili.

#### 3. *Cacosoma agile*.

*Male*. Length  $4\frac{1}{2}$  lines.—Head and thorax green; abdomen pitch-

with the base rufo-piceous. Head very finely and very punctured; the vertex dark olive-green, the clypeus produced, shining, and with strong punctures; the antennae beneath, fuscous above. The mesothorax closely punctured, the metathorax with a series of short deep striae at the base, strongly punctured beyond, and with a deeply impressed longitudinal line; wings subhyaline; legs rufo-piceous, the femora and tibiae tinged with green. Abdomen tinged with green, the two basal segments, the base of the first rufo-piceous; obclavate.

Brazil.

#### 4. *Cacosoma marginatum*.

Length 5 lines.—Head and thorax olive-green; abdomen with pale marginal fascia, and having a sericeous gloss. Clypeus produced, the front with pale fulvous pubescence; the labellae pale testaceous; antennae a little longer than the thorax, fuscous, slightly fuscous above, the joints subarcuate. Thorax green above; the basal margin of the postscutellum with a narrow band of pale tomentum; wings pale fulvo-hyaline, the nervures and veins pale ferruginous; the tips of the femora, the tibiae, and the tarsi pale ferruginous. Abdomen clavate, the apical margins of the segments bordered with shining whitish pubescence, the basal margin of this border shining golden.

Chili.

#### 5. *Cacosoma jucundum*.

Length 3-3½ lines.—Head, thorax, and base of the abdomen more or less bright green, with brassy tints. The head and thorax finely close punctured; the clypeus produced, and with stronger punctures; the antennae obscurely rufo-piceous. The base of the thorax with rugulose striae; wings subhyaline and iridescent, partly clouded at their apical margins; legs rufo-piceous, the femora and tibiae tinted with green, the tarsi pale rufo-testaceous. Abdomen black, shining, and clavate; the base of the three basal segments more or less green.

St. Paulo, on the Amazons.

### AUGOCHLORA, Smith.

#### 1. *Augochlora acidalia*.

Length 4½ lines.—Head and thorax blue-green, sometimes opaque; abdomen bright coppery red, varying in some examples to brassy green. The head above the antennae very closely

punctured, more strongly so below their insertion, the clypeus produced and coarsely punctured, and fringed with fulvous pubescence; the face thinly sprinkled with fulvous; the flagellum fulvous beneath. The mesothorax with strong confluent punctures, the scutellum and metathorax with finer punctures; at the base of the latter there is a small finely rugulose space, surrounded by a smooth shining margin; wings fusco-hyaline, the nervures dark fuscous; legs of different shades of green, and with obscure fulvous pubescence. Abdomen with fine shallow punctures.

*Hab.* Uruguay.

The colouring of this species is the same as that of *A. igaita*, described in the 'Journal of Entomology'; but the insect is larger, and the abdomen, instead of being rather strongly punctured, is very finely so.

## 2. *Augochlora berenice*.

*Female.* Length 4 lines.—Green, with tints of blue in different lights. Head very closely punctured, most strongly so below the insertion of the antennae; the clypeus with strong punctures and purple at its apex; the flagellum fulvous beneath. The mesothorax with confluent punctures; the metathorax with an enclosed space at its base longitudinally rugulose, truncate, with the sides closely punctured; wings hyaline, the nervures and tegulae rufopiceous; legs green, the tarsi rufopiceous, with pale pubescence. Abdomen pubescent, shining, with fine shallow punctures; the apical margins of the second and following segments with a thin fringe of white pubescence.

*Hab.* Uruguay.

## 3. *Augochlora callisto*.

*Male.* Length 4 lines.—Blue, with tints of green in certain lights. Head very closely punctured, the clypeus coarsely so; the flagellum of the antennae fulvous towards the apex beneath. Thorax more strongly punctured than the head, the scutellum with larger deep punctures; the base of the metathorax longitudinally finely rugulose, a smooth shining area surrounding the striated one; the apex truncate; wings hyaline, the nervures and stigma testaceous; legs blue, with green tints and covered with pale pubescence; the apical joints of the tarsi ferruginous. Abdomen finely punctured not very closely so, and with a thin pale pubescence; the basal margins of the second and third segments with narrow fasciae of pale fulvous pubescence.

*Hab.* Monte Video.

#### 4. *Augochlora acis*.

Length  $3\frac{1}{2}$  lines.—Bright green. Head with very close or less confluent punctures; the clypeus with strong punctures and usually more or less purple at the apex, the apical margin fringed with glittering white hairs; the flagellum obscurely punctured beneath. Thorax punctured in the same manner as the abdomen; the enclosed space at the base of the metathorax irregularly punctured; the truncation coarsely punctured; wings hyaline, the veins and stigma pale testaceous; the tegulae sometimes green, occasionally more or less obscure rufotestaceous; legs green or sometimes blue. Abdomen shining, with fine shallow punctures, thinly covered with pale pubescence, the second and third segments with a narrow band of pale pubescence at their basal margin, the following segments with a fringe of pale pubescence on apical margins.

Uruguay and Monte Video.

This is a species that varies in colouring from blue to bright green; the blue variety has the apical margins of the abdomen green; the bands at the basal margins of the second and third segments are frequently obliterated.

#### 5. *Augochlora atropos*.

Length 4 lines.—Head, thorax, and base of the abdomen more or less of a purple tint, the rest of the abdomen brassy green. The head with rather fine confluent punctures; the clypeus broad, very convex, shining, and with a few large deep punctures, apical margin fringed with pale fulvous hairs. Thorax closely punctured, the disk less closely so; the enclosed space at the base of the metathorax with short longitudinal striae, surrounded by a shining space; the truncation smooth and shining and with a deep central depression; wings subhyaline; legs black, with pale pubescence; the posterior femora fringed with white pubescence beneath. Abdomen closely punctured at the base, with few punctures towards the apex, and thinly covered with pale pubescence.

Brazil, St. Paulo.

#### 6. *Augochlora deidamia*.

Length 4 lines.—Green, the head, thorax, and legs brassy; metathorax coppery red. The head closely and finely punctured, the clypeus slightly produced, convex, and with a few strong punctures. Thorax shining above, punctured, the punctures fine and distant on the disk and also on the scutellum; at the base of the metathorax, which is truncate, there are a few short striae enclosed by a shining smooth ridge; wings hyaline and iridescent.

the tegulae posteriorly and the nervures rufo-piceous; the legs green, their pubescence pale, the apical joints of the tarsi pale ferruginous; the posterior femora fringed with white pubescence beneath. Abdomen shining, evenly and finely punctured at the base, but with shallow punctures beyond the second segment; beneath, the segments are fringed with pale fulvous pubescence.

*Hab.* Brazil, St. Paulo.

#### 7. *Augochlora feronia*.

*Female.* Length  $3\frac{1}{2}$  lines.—Head and thorax green, legs black, abdomen obscurely green. Head and thorax with fine confluent punctures; the clypeus produced, and with a few strong punctures fringed at the apex with a few fulvous hairs. The metathorax with the enclosed space at its base with short radiating striae beyond very finely and very closely punctured; wings subhyaline with dark nervures, and faintly clouded at their apex; the coxae beneath tinted with green; the legs with black pubescence. Abdomen black at the base, and with tints of green in different lights; the third and fourth segments green, with their apical margins more or less black, the apex black; beneath black, with the margins of the segments rufo-piceous.

*Hab.* Brazil, Constança.

#### 8. *Augochlora calypso*.

*Female.* Length 4½ lines.—Bright green, the segments of the abdomen with a narrow pale fulvous marginal fringe. The face with very fine confluent punctures above the antennae, below their insertion the puncturing is stronger; the clypeus slightly produced with strong punctures, its apex usually dark purple; antennae rufo-piceous; the mandibles ferruginous in the middle. Thorax closely punctured; the metathorax truncate, the truncation very bright and shining, and having a few fine shallow punctures; the base of the metathorax with short radiating striae enclosed by a sharp shining ridge; wings fulvo-hyaline, the nervures and tegulae rufo-testaceous; the legs with pale fulvous pubescence; the tarsi rufo-testaceous. Abdomen shining, with very fine punctures on the basal segment; the first and second segments with a narrow pale fulvous marginal fringe, on the following segments the fringe is paler and less even.

*Hab.* Santarem.

#### 9. *Augochlora chryseis*.

*Female.* Length  $3\frac{1}{2}$  lines.—Head and thorax blue, abdomen olive green. Head rotundate, very finely punctured, the clypeus slightly produced and coarsely punctured at the apex, which is black.

is not so finely punctured as the head; the metathorax truncate at base with longitudinal striae enclosed by a sharp elevated ridge; wings hyaline and iridescent, the nervures dark ferruginous, the tegulae shining black; the legs with a glittering pale pubescence on the posterior tibiae outside it is fuscous. Abdomen oblong-ovate, shining, and impunctate; covered thinly towards the apex with short pubescence; beneath, the margins of the segments with one of whitish pubescence.

Guatemala.

#### 10. *Augochlora festiva*.

Length  $3\frac{1}{2}$  lines.—Head and thorax bright green; abdomen ferruginous, with the apex green, and the margins of the segments at the apex blackish. The clypeus slightly produced, convex, the apex yellow; the mandibles and scape of the antennae short. Thorax impunctate, truncate posteriorly; the truncation deeply impressed in the centre; the sides of the metathorax with a downy pubescence; wings clear hyaline and iridescent, the apices testaceous; the legs pale yellow-ferruginous. Abdomen ovate; the margins of the segments with fuscous bands.

Santarem.

#### 11. *Augochlora læta*.

Length 3 lines.—Shining green. Head very closely and finely punctured; the clypeus slightly produced, convex, and having a scattered punctures; mandibles and antennae rufo-piceous. Mesothorax closely but not so finely punctured as the head; the base of the metathorax the space enclosed by a sharp ridge longitudinally striated; wings hyaline and iridescent, the tegulae nervures pale testaceous; the legs pale ferruginous. Abdomen ovate, punctured, and with a thin pale pubescence; beneath rufo-testaceous.

Amazons, Ega.

#### 12. *Augochlora alcyone*.

Length  $3\frac{1}{2}$  lines.—Green, with tints of blue on the abdomen. The head finely shagreened, rotundate; the clypeus slightly produced and strongly punctured; the flagellum fulvous beneath. The base of the metathorax with radiating striae, surrounded by a sharp ridge; wings hyaline and iridescent, faintly clouded at their apices; legs blue-green; the apical joints of the tarsi rufo-testaceous, with a pubescence whitish. Abdomen oblong-ovate, slightly pilose; the sides, the apex with fuscous pubescence; beneath blue with tints.

St. Domingo.



13. *Angochlora nana*.

*Female*. Length  $1\frac{1}{2}$  lines.—Head and thorax brassy green, abdomen pale ferruginous. Head rotundate, very finely and closely punctured; the mandibles, apical margin of the clypeus, and the antennae pale ferruginous, the latter slightly fuscous above. Thorax very finely punctured; the base of the metathorax finely rugulose surrounded by a smooth shining space; wings clear hyaline and splendidly iridescent, nervures and tegulae pale rufo-testaceous; legs the colour of the abdomen, which is smooth, shining, and impunctate.

*Hab.* Santarem.

14. *Angochlora thalia*.

*Female*. Length  $3-3\frac{1}{2}$  lines.—Brassy green, with, usually, coppery tints on the thorax and abdomen. Head minutely and very closely punctured; the clypeus strongly so, its anterior margin black; the mandibles ferruginous; the flagellum of the antennae fulvous beneath. Thorax finely punctured; the base of the metathorax with radiating striae, the sides with white pubescence; wings fulvous hyaline, the nervures dark fuscous, the tegulae rufo-piceous; the tibiae and tarsi ferruginous, more or less fuscous above; the femora and coxae obscure rufo-piceous. Abdomen very bright and shining at the base, more or less covered with fine hoary pilosity; beneath blackish.

*Male*. Smaller than the female, but of the same colour; the clypeus more produced, and its anterior margin narrowly yellowish; the antennae longer and stouter; the legs, except the coxae, pale ferruginous; the abdomen narrower than in the female, but pubescent and similarly coloured.

*Hab.* St. Paulo and Villa Nova.

15. *Angochlora briseis*.

*Female*. Length  $3\frac{1}{2}$  lines.—Head green, thorax and abdomen obscurely purple. Head shining brassy green, finely and closely punctured, the clypeus with a few strong punctures; mandibles ferruginous; flagellum of the antennae fulvous beneath. The thorax coarsely punctured above, of a bright purple colour, with an abbreviated impressed line over each tegula; the metathorax smooth and shining; wings hyaline and iridescent, and faintly clouded at their apex; legs rufo-piceous. The abdomen subclavate, the basal segment rather strongly punctured; the basal half of the second more finely so, the following segments shining and impunctate.

*Hab.* Amazonas, St. Paulo.

16. *Angiochlora aspasia*.

*♂*. Length 3 lines.—Head and thorax black, and densely covered with short fulvous pubescence; abdomen ferruginous, the lobes ferruginous at their apex; the flagellum of the antennae nearly fulvous beneath. Thorax punctured beneath, not pubescent; the legs rufo-piceous, with thin pale fulvous pubescence, but fulvous on the tarsi within; wings fulvo-hyaline, the nervi and tegulae pale rufo-testaceous; a space at the base of the metathorax, enclosed by a sharp ridge, longitudinally striated, brown with short fulvous pubescence towards the apex; the lateral margins of the third and following segments more or less hoary.

*♀*. Mexico.

17. *Angiochlora hebescons*.

*♂*. Length 5 lines.—The face coppery; the vertex and disk of the thorax obscure olive-green; the scutellum and postscutellum bright green; the abdomen dark olive-green, in some examples inclining to blue. The head with pale pubescence, longest and most dense on the cheeks; the clypeus fringed with bright pale fulvous hairs. The thorax closely punctured, the metathorax truncate, smooth, shining, and impunctate; the wings hyaline, with the anterior margin of the front wings clouded with fuscous; legs black and with black pubescence; the apical joints of the tarsi rufo-piceous; the femora fringed beneath with pale pubescence. Abdomen convex and ovate; the basal segment punctured and covered thinly with short glittering pale hairs.

*♀*. Closely resembles the female, and is similarly coloured, but the abdomen more elongate and the two basal segments punctured; the legs are tinted with green, and have the tarsi pale ochraceous and thickly covered with short white pubescence; the dorsal pubescence of the legs is hoary.

*Loc.* Amazons, Ega, St. Paulo, and Para.

18. *Angiochlora aurora*.

*♂*. Length 4 lines.—Head blue-green; abdomen brassy, and with a dense short fulvous pubescence beyond the basal segment, which is shining and finely punctured. Head with confluent punctures; antennae black. The mesothorax coarsely punctured in the middle, the punctures confluent, more finely punctured beyond the middle of the wings, as is also the scutellum; the base of the metathorax irregularly longitudinally striated; wings hyaline, the lobes clouded at their apex; legs black, with dark fuscous pubescence, but on the posterior pair paler beneath. Abdomen finely punctured.

*♀*. Mexico.

**MEGALOPTA, Smith.****1. *Megalopta purpurata*.**

*Male*. Length 6 lines.—Purple, brightest on the abdomen, and covered with thin short pale pubescence, which is most dense on the thorax beneath and on the sides of the metathorax. Head closely and finely punctured; the clypeus shining and with scattered punctures; the mandibles rufo-piceous; the flagellum of the antenna obscurely fulvous beneath. Thorax with minute shallow punctures above; wings fulvo-hyaline, the nervures rufo-testaceous; the metathorax smooth and shining; the legs rufo-piceous, with the tarsi pale rufo-testaceous. Abdomen oblong-ovate, delicately punctured at the base, beneath rufo-piceous.

*Hab.* Amazonas, Ega.

**2. *Megalopta nigro-femorata*.**

*Female*. Length 4½ lines.—Pale ferruginous, with the head, mesothorax above, and the pectus more or less brassy green. The anterior margin of the clypeus, the labrum, and mandibles pale ferruginous, the latter black at their tips; the antennae ferruginous. The wings fulvo-hyaline, the nervures and tegulae pale ferruginous; the legs ferruginous, with the apex of the intermediate tibiae, the posterior tibiae, and the basal joint of the intermediate and posterior tarsi black, and with black pubescence. Abdomen subglobose, the apical margins of the second, third, and the following segments slightly rufo-fuscous.

*Hab.* Ega.

**3. *Megalopta pilosa*.**

*Female*. Length 4 lines.—Brassy green, and covered with short fulvous pubescence. The clypeus naked, shining, and strongly punctured; the labrum pale ferruginous; the mandibles ferruginous, with their tips rufo-piceous; the scape and one or two of the basal joints of the flagellum pale ferruginous, the rest of the joints black. The base of the metathorax with longitudinal striae; the wings hyaline, the nervures and stigma pale testaceous; a fuscous cloud in the marginal cell, passing beyond to the apex of the wing; legs pale ferruginous, with fulvous pubescence. The basal segment of the abdomen strongly punctured.

*Hab.* St. Paulo, Amazonas.

**4. *Megalopta vivax*.**

*Female*. Length 3½ lines.—Head and thorax blue-green, the vertex and disk of the thorax obscurely so; abdomen brownish black, the

green. The head with fine confluent punctures; the clypeus blackish, and with strong punctures; the mandibles with great half rufo-piceous; the flagellum fulvous beneath. Thorax strongly punctured, with the disk shining and with distant punctures; the metathorax smooth and shining, with a transverse emarginate process at its base, with strong short radiating striae; wings green, iridescent, and slightly clouded at their apex, the nervures fuscous, the tegulae rufo-testaceous; legs obscurely rufo-piceous with fulvous pubescence. Abdomen ovate, finely and sparingly punctured; the apical margins of the two basal segments with a black fringe of fulvous pubescence, on the following segments the fringe is paler and not so even.

St. Paulo, Brazil, Para.

### 5. *Megalopta cuprifrons*.

Length 4 lines.—Head and thorax green, the face of a very brilliancy; the mesothorax above obscure; the scutellum post-scutellum bright green; abdomen obscure dark olive and green. The head and thorax above with fine confluent punctures; the clypeus very bright and with strong punctures; the antennae black; the wings hyaline, with a dark fuscous stain on the anterior margin of the front wings; legs black, but obscurely rufo-piceous beneath, their pubescence black. The basal segment of the abdomen strongly punctured, the following segments with short pubescence, pale, and changeable in different lights.

Coloured as the female, but of a more slender form; the legs obscure, the abdomen elongate-ovate, with the two basal segments strongly punctured.

St. Paulo, Amazons.

### 6. *Megalopta ornata*.

Length 5 lines.—Green; the head and thorax strongly punctured, the punctures confluent; abdomen dark green, with blue in certain lights. Head with the hinder margin of the vertex acute; the clypeus convex and of a bright coppery red; the face on each side golden yellow; the antennae black; head blackish green. Thorax with the collar produced laterally into a rugulated thin curved process; the disk of the mesothorax at the base of the metathorax concave, smooth, and shining, bearing a few shallow longitudinal striae; wings hyaline, their margins with a fuscous cloud; the nervures fuscous, the tegulae black, smooth, and shining; legs black, with tints of green above, their pubescence fuscous above; the flocous on the abdomen beneath pale fulvous, as well as that on the tibiae; on the first joint of the tarsi beneath it is bright fulvous. Abdomen smooth and shining, the basal segment punctured late-

rally, finely and sparingly at the basal margin in the middle; the apical segment with fuscous pubescence; beneath green and punctured, the margins of the segments fringed with pale pubescence.

*Hab.* St. Paulo, Amazons.

### ANDRENA, Fabr.

#### 1. *Andrena torrida*.

*Female.* Length  $5\frac{1}{2}$  lines.—Head and thorax black, abdomen ferruginous. Head very closely punctured; the face and cheeks with short white pubescence; the apical joint of the antennæ fulvous beneath. Thorax shining above, with strong rather distant punctures; the metathorax smooth; the pubescence above pale and yellowish, that beneath and on the legs white; the legs rufopiceous; the wings fusco-hyaline, with the base hyaline. Abdomen shining and impunctate, the extreme base and apex blackish.

*Male.* The same length as the female; similarly coloured, but having the face densely covered with gold-coloured pubescence, and with more black at the base and apex of the abdomen, which has the margins of the segments depressed.

*Hab.* Bombay Presidency.

#### 2. *Andrena mollis*.

*Female.* Length 4 lines.—Head and thorax shining black; abdomen pale ferruginous, with black spots and fasciæ. The head and thorax above very closely and finely punctured; the face thinly covered with pale fulvous pubescence; mandibles ferruginous, their base and apex dark rufopiceous; the flagellum of the antennæ fulvous beneath, two or three of the apical joints entirely so. The pubescence on the thorax pale fulvous; the postscutellum covered with pale tomentum; wings subhyaline and iridescent, their apical margins faintly clouded; legs ferruginous. Abdomen with a fuscous macula a little beyond the middle of the first and second segments laterally; a fuscous band across the third segment, the following segments black; beneath, the segments are fringed with long pale hair.

*Hab.* Bombay.

There is only a single specimen of this species in the Collection, but it is probable that the dark markings on the abdomen vary in different individuals.

#### 3. *Andrena communis*.

*Female.* Length 4 lines.—Head closely and finely punctured; the clypeus shining and with strong punctures; tips of the mandibles

picuous; the flagellum obscurely fulvous beneath. Thorax finely punctured, with pale fulvous pubescence above and with white beneath; wings hyaline and iridescent, the nervures fuscous; the scopa on the posterior tibiae pale fulvous. Abdomen black, with the apical margin of the first segment, the apical segment, and the sides of the third more or less ferruginous; the apical margins of the second, third, and fourth segments fringed with white pubescence, the sixth segment with white pubescence.

North India, Masuri; taken at an elevation of 7000 feet.

This species closely resembles some of the varieties of the European *A. scitula*.

#### 4. *Andrena vitiosa*.

Length 4½ lines.—Black. Head twice the width of the thorax, submarginate behind; the clypeus yellow; the face and vertex finely punctured, the former with a thin pale fulvous pubescence; cheeks smooth and shining. Thorax thinly covered above with fulvous pubescence, that on the metathorax thin and hoary; collar produced laterally into an elevated tubercle; wings hyaline, the tegulae testaceous, the nervures ferruginous; the subo-picuous, the tarsi palest. Abdomen smooth, shining, and finely punctured; the apical margins of the segments obscurely rufescent.

North China.

#### 5. *Andrena dentata*.

Length 5 lines.—Black; the abdomen with the apical margin of the first, second, and third segments rufescent. Head large, wider than the thorax, the vertex narrowed behind; the face with hoary pubescence; the mandibles forcipate; their tips rufescent and armed at their base with a long tooth; the joints of the flagellum subarcuate; the head long white pubescence beneath. Thorax with long thin fulvous pubescence on the disk; on the sides, beneath, and on the vertex it is white; the tarsi pale ferruginous; wings pale fulvous, the nervures ferruginous. Abdomen oblong, smooth, and with the apical segment with white pubescence.

Japan, Yokohama.

#### 6. *Andrena fastuosa*.

Length 6½ lines.—Black, the apical margin of the first, second segment of the abdomen entirely, ferruginous. The face on the face and cheeks whitish, that on the vertex pale; a line of white tomentum at the inner margin of the eyes;

the head closely punctured, the clypeus strongly so. Thorax with the disk not very closely punctured, with pale fulvous pubescence above; beneath it is whitish; the wings fulvo-hyaline, their apex clouded; the nervures ferruginous; the tarsi and posterior tibiae ferruginous and with fulvous pubescence; the floccus at the base of the posterior femora beneath white. Abdomen closely and finely punctured; the apical margins of the segments testaceous, the second and following ones with short pale pubescence, that on the apical bright fulvous.

*Hab.* Mexico, Orizaba.

#### 7. *Andrena discreta*.

*Female.* Length 6 lines.—Head and thorax black; abdomen ferruginous, with the base black. Head very closely punctured; the face and cheeks with fulvous pubescence; tips of the mandibles ferruginous. Thorax finely and closely punctured, and clothed with fulvous pubescence; wings fulvo-hyaline, the nervures and stigma ferruginous, faintly clouded at their apex; legs rufo-piceous; the tarsi and posterior tibiae ferruginous, their pubescence fulvous; the floccus at the base of the posterior femora pale fulvous. The abdomen with short fulvous pubescence; the apical margins of all segments pale rufo-testaceous and fringed with fulvous pubescence; the fourth and fifth segments more or less fuscous at the base.

*Hab.* Mexico, Oajaca.

#### 8. *Andrena sodalis*.

*Female.* Length 5 lines.—Black, the general pubescence above fulvous; abdomen smooth, shining, and impunctate. The face with pale pubescence; the clypeus shining, and having deep scattered punctures; a deep channel along the inner margins of the eyes, and the sides of the face. Thorax with thin fulvous pubescence above; beneath it is paler; wings fulvo-hyaline, the nervures, tegulae, and stigma rufo-testaceous; the apical joints of the tarsi, the posterior tibiae, and basal half of the first joint of the tarsi pale ferruginous; the scopa on the posterior tibiae bright pale fulvous. Abdomen oblong-ovate; the apical margins of the second and third segments fringed laterally, and the fourth entirely, with pale fulvous pubescence, that on the apical segment is fuscous.

*Hab.* Mexico, Oajaca.

#### 9. *Andrena simulata*.

*Female.* Length 5 lines.—Black; thorax and abdomen smooth and shining, the former with fulvous pubescence above. Head open; the clypeus shining, with strong punctures, and a longitudinal smooth impunctate line in the middle; the face with a thin pale pubes-

and a deep channel on each side at the margin of the eyes. Head very finely punctured; wings fulvo-hyaline, the nervures, veins, and tegulae rufo-testaceous; legs obscure rufo-piceous beneath, their pubescence fuscous above. Abdomen oblong-ovate; apical margins of the second and third segments more or less rufo-piceous; the third and fourth segments laterally, and the fifth apically, fringed with pale fulvous pubescence, the apical segment with fulvous pubescence; beneath rufo-piceous.

*Loc.* Mexico, Orizaba.

This species resembles *A. sodalis*, but is distinguished from it by the fulvous scopa on the posterior tibiae.

#### 10. *Andrena agilis*.

*Length* 4 lines.—Coal-black, the head and thorax opaque, abdomen smooth and shining. The clypeus yellowish white, on each side of it, on the face, there is some black pubescence; at the base of the antennae a little pale pubescence, the same on the cheeks; the antennae as long as the thorax. The thorax with a long hoary pubescence; wings hyaline and iridescent, the veins testaceous. Abdomen lanceolate, much attenuated at the apex, on the apical margins of the second, third, and fourth segments laterally a narrow fringe of white pubescence; the two apical segments testaceous and with white pubescence.

*Loc.* Mexico, Oajaca.

#### 11. *Andrena modesta*.

*Length* 3 lines.—Head and thorax black; abdomen ferruginous, with the base black. Head closely punctured, the clypeus finely so; the flagellum of the antennae fulvous beneath; tips of mandibles rufo-piceous. Thorax finely punctured above; wings hyaline and iridescent, slightly fuscous towards the apex, the nervures and stigma dark fuscous; the basal joint of the posterior wing with white pubescence within. Abdomen with the first segment black and its apical margin ferruginous; the three following segments ferruginous, the rest black; the red segments have a small fuscous or black macula; beneath black, with the apical margins of the segments ferruginous.

*Loc.* Mexico, Oajaca.

#### 12. *Andrena commoda*.

*Length* 6 lines.—Black; the abdomen ovate and shining, the legs as well as the posterior legs, with bright fulvous pubescence. The face with pale pubescence; the clypeus shining and rather strongly punctured; the flagellum, except the basal



joint, obscurely fulvous beneath. The thorax with hoary pubescence, that on the disk is thin, but at the sides of the metathorax it is long and dense; wings fulvo-hyaline, the nervures and stigma ferruginous, the tegulae rufo-piceous; all the tarsi and the intermediate and posterior tibiae with fulvous pubescence; the floccae on the posterior femora beneath white; the tarsi and posterior tibiae ferruginous. Abdomen oblong-ovate and finely punctured.

*Hab.* Canada.

#### 13. *Andrena flavo-clypeata*.

*Male.* Length  $3\frac{1}{2}$  inches.—Black, with the clypeus yellow and having two minute black spots. The head deeply emarginate posteriorly; the antennae nearly as long as the thorax, with the flagellum pale fulvous beneath. The pubescence of the thorax pale, that on the disk slightly fulvous; wings hyaline and iridescent; the nervures and stigma pale rufo-testaceous, the tegulae pale testaceous; the apical joints of the tarsi rufo-testaceous. Abdomen lanceolate, the apex pale testaceous and with white pubescence.

*Hab.* Canada.

#### 14. *Andrena miranda*.

*Female.* Length  $4\frac{1}{2}$  lines.—Black; the pubescence on the thorax above pale fulvous, but sparing, that at the apex of the abdomen and on the posterior legs fulvous. Head closely punctured, the clypeus strongly so; the sides of the face with pale pubescence. The mesothorax strongly punctured, the scutellum and metathorax coarsely so, the sides of the latter thickly fringed with pale pubescence; the wings hyaline, iridescent, and slightly clouded at their apex, the nervures and stigma ferruginous, the tegulae rufo-piceous; the legs dark rufo-piceous, the tibiae of the posterior legs and all the tarsi ferruginous. Abdomen ovate and closely punctured; on the apical margins of the second, third, and fourth segments there is a narrow fascia of white pubescence, the second usually, and at the third occasionally, interrupted; the two apical segments with fulvous pubescence.

*Male.* Length  $3\frac{1}{2}$  lines.—Resembles the female in having pale fulvous pubescence on the thorax, in having the tarsi and posterior tibiae pale ferruginous, and in having the apex of the abdomen with fulvous pubescence; the face clothed with fulvous pubescence; wings as in the female; abdomen shining and impunctate.

*Hab.* Canada.

#### 15. *Andrena mæsta*.

*Female.* Length  $5-5\frac{1}{2}$  lines. Black, with hoary pubescence. The face and cheeks with white pubescence. The thorax thin

hood on the disk with pale yellowish-white pubescence, on the thorax, sides, and beneath it is hoary; the floccus at the base of the posterior femora beneath dense, curled, and white; the ground on the tibia white; the inside of the basal joint of the tarsi testaceous; wings hyaline and iridescent, the nervures and stigma testaceous. Abdomen ovate, subacuminate at the apex, thinly covered above with hoary pubescence; the apical margins of the segments beneath fringed with the same.

Length 4 lines.—The pubescence hoary, that on the face and cheeks long and white; the head above subquadrate; the antenna nearly as long as the thorax; wings as in the female; the slender, with the apical joints of the tarsi testaceous. Abdomen shining, with a thinly scattered hoary pubescence.

*Idaho, Canada.*

Both the sexes described are in the best possible condition.

#### 16. *Andrena errans*.

*♂*. Length 6–6½ lines.—Shining jet-black, the thorax with testaceous pubescence above. The head with black pubescence, the face and vertex it is slightly ochraceous, on the metathorax, thorax beneath, on the sides, and on the legs it is black; wings hyaline, the nervures fusco-ferruginous. Abdomen very black and shining, impunctate, the pubescence on the apex obscurely testaceous.

Smaller than the female, but closely resembling it; the pubescence is similar, that on the clypeus is brownish; the wings more clear, being hyaline towards the base, and the nervures testaceous.

*Idaho, Vancouver's Island.* Collected by Dr. Lyall.

This species resembles *A. vicina* of N. America, but that insect has more pubescence on the face.

#### 17. *Andrena cærulea*.

*♂*. Length 4–4½ lines.—Blue, the abdomen shining and somewhat having a green tint in certain lights. The pubescence on the legs brownish, as well as that on the cheeks. On the thorax the pubescence is ochraceous, on the metathorax it is sooty testaceous as also that on the legs; the floccus on the posterior femora beneath pale; wings hyaline, iridescent, and slightly clouded at the apex. Abdomen impunctate, with obscurely fulvous pubescence at the apex.

*Idaho, Vancouver's Island.* Collected by Dr. Lyall.

#### 18. *Andrena subtilis*.

*♂*. Length 5 lines.—Head and thorax black, the abdomen

smooth, shining, and nigro-aneous. The face with pale fulvo-ochraceous pubescence, that on the clypeus whitish. The thorax with fulvo-ochraceous pubescence above, paler on the sides of the metathorax; that on the legs beneath, and also the floccus at the base of the posterior tibiae beneath, nearly white; the scopa on the posterior tibiae, as well as the pubescence on the tarsi, pale fulvous; wings hyaline, clouded and iridescent on their apical margins, the nervures rufo-testaceous. Abdomen impunctate; the apical margins of the second and following segments slightly depressed; the pubescence at the apex fulvous.

*Hab.* Vancouver's Island. Collected by Dr. Lyall.

#### 19. *Andrena candida*.

*Female.* Length  $3\frac{1}{2}$  lines.—Nigro-aneous; abdomen smooth and shining; the apical margins of the second, third, and fourth segments with white interrupted pubescent fasciae. Head with a deep longitudinal channel on each side of the face along the margin of the eyes, lined with a fulvous pile; the clypeus shining, punctured and truncate, with the lateral angles acute. Thorax with thin hoary pubescence; the floccus on the posterior femora beneath white; the scopa on the tibiae pale fulvous above; the apical joint of the tarsi rufo-testaceous. Abdomen ovate, the apical finibus rufo-fuscous.

*Hab.* Vancouver's Island. Collected by Dr. Lyall.

#### 20. *Andrena auricoma*.

*Male.* Length  $4\frac{1}{2}$  lines.—Black, the entire pubescence golden yellow. The face with long dense pubescence. The thorax very finely and closely punctured above; the wings fulvo-hyaline, slightly clouded at their apex, the nervures pale rufo-testaceous; legs rufo-piceous, the tarsi pale ferruginous. Abdomen lanceolate, all the segments fringed with golden-coloured pubescence.

*Hab.* Vancouver's Island. Captured by Dr. Lyall.

#### 21. *Andrena arrogans*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black, the base of the abdomen more or less red. The face and cheeks clothed with white pubescence. Thorax clothed with white pubescence above, beneath it faintly tinged with yellow; on the metathorax the pubescence long and dense; wings pale fulvo-hyaline, the nervures obscure fusco-ferruginous, the tegulae rufo-piceous; the scopa on the posterior tibiae fulvous; the pubescence on the anterior and intermediate tarsi beneath, and that on the posterior pair entirely, brief fulvous. Abdomen very finely punctured; the three basal segments ferruginous, and with a transverse black macula at the base.

occupying about one third of the width of the segments; the apical segments with black pubescence: the base of the abdomen with a little white pubescence.

Burgheersdorp, South Africa.

The insect described had evidently been some time exposed to the sun when it was captured; therefore the white pubescence would probably be somewhat whitish in recent specimens.

## 22. *Andrena fausta*.

*Andrena fausta*. Length 4 lines.—Head and thorax black, abdomen ferruginous. Head and thorax above closely punctured; the face and cheeks with a little white pubescence, on the thorax it is whitish tapering; the wings fusco-hyaline, and iridescent towards the apex; the pubescence on the legs pale and of a glittering brightness; the claw-joint of the tarsi ferruginous. Abdomen with the apical segment closely punctured and black at the base; beneath the segments are thinly fringed with pale fulvous pubescence.

*Hab.* Natal.

## 23. *Andrena neglecta*.

*Andrena neglecta*. Length  $4\frac{1}{2}$  lines.—Black, with hoary pubescence: the apical margins of the segments of the abdomen testaceous, and thinly covered with white pubescence. The face with short pale pubescence, that on the vertex fuscous. The thorax closely punctured, the pubescence short and thin above; the wings subhyaline, faintly scaled and iridescent at their apical margins, the nervures testaceous, the stigma and costal nervure black; legs obscurely rufous; the scopa on the posterior tibiae pale fulvous. Abdomen shining, the apex with rufo-fuscous pubescence.

*Hab.* Natal.

## CTENOPECTRA, Smith.

### 1. *Ctenoplectra apicalis*.

*Ctenoplectra apicalis*. Length  $6\frac{1}{2}$  lines.—Head and thorax black, abdomen blue. Head closely punctured, semipaque: the face and cheeks with a short white downy pile; the clypeus with a longitudinal central shining carina; antennae rufo-piceous. Thorax wider than the head, conduplicate, shining above, and finely punctured, the sides with fuscescent pubescence; wings fulvo-hyaline, the nervures black; legs black rufo-piceous, palest beneath; the tarsi and posterior tibiae fringed with black pubescence. Abdomen bright shining steel-blue, finely punctured, the apical margins of the segments impunctured, on the two basal segments most broadly so; the apical segment transverse, wider than the sixth, produced laterally into a

blunt curved tooth, widest in the middle, with the margin rounded beneath obscurely rufo-piceous, the basal segment raised and having a central longitudinal keel.

*Hab.* Burmah.

## 2. *Ctenoplectra terminalis*.

*Female.* Length 4 lines.—Head and thorax black; abdomen metallic blue, the apex ferruginous, and clothed with fulvous pubescence. The face and cheeks with whitish pubescence; the antennae ferruginous, the flagellum fuscous above; the head strongly punctured, the clypeus and labrum coarsely so. Thorax globose, closely and finely punctured above; the sides of the metathorax with whitish pubescence; wings hyaline, with dark-brown nervures; legs obscurely rufo-piceous, their pubescence black; the posterior tibiae and basal joint of the tarsi with a thick scopa of black pubescence. Abdomen smooth and shining; the first segment with a few scattered punctures at the base; the second segment with a transversely waved row of punctures in the middle; the two following segments punctured at their base, the fifth entirely punctured and fringed with fulvous pubescence; beneath, the fourth and following segments fringed with fulvous pubescence.

*Hab.* Natal.

## MEGACILISSA, Smith.

### 1. *Megacilissa vestita*.

*Male.* Length  $6\frac{1}{2}$  lines.—Black and densely pubescent. The face and cheeks have a yellowish-white pubescence, that on the vertex is fuscous. The thorax clothed with short, dense, fulvous pubescence; the abdomen covered with the same above; on the metathorax the pubescence is longer and paler; on the entire body beneath the pubescence is white, faintly tinged with yellow; on the sides of the abdomen above the apical margins of the segments are fringed with white, only visible when viewed sideways; the tibiae and tarsi ferruginous; wings hyaline, the nervures black.

*Hab.* Peru.

### 2. *Megacilissa tenuimarginata*.

*Male.* Length  $8\frac{1}{2}$  lines.—Black; the face, thorax above, and the first segment of the abdomen densely clothed with rich fulvous pubescence; the clypeus and scape of the antennae yellow. The pubescence on the sides of the thorax, beneath, and on the legs fulvous, but paler than that on the disk; the legs ferruginous, the posterior pair dark rufo-piceous and with fuscous pubescence on the side, that on the tarsi within bright ferruginous; wings ful-

the nervures ferruginous, the tegulae pale rufo-testaceous, the third and fourth segments narrowly testaceous and with a narrow fulvous fringe; those of the fifth and sixth segments fringed with long black pubescence, the apical segment with fulvous.

6. Mexico, Orizaba.

This insect is very like the male of *M. eximia*, but differs from it in the colour and pubescence of the posterior legs, and also in the pale margins of the segments of the abdomen.

### 3. *Megacilissa clypeata*.

Length  $7\frac{1}{2}$  lines.—Black, with fulvous pubescence, which is on the head, thorax, and first segment of the abdomen, rich and paler on the body beneath. The clypeus yellow; the first segment of the antennae, the flagellum beneath, and the apical joint of the legs ferruginous, the posterior tibiae darkest, and the femora with fulvous pubescence outside; wings hyaline, the nervures ferruginous, the tegulae pale rufo-testaceous. Abdomen having the third, fourth, and fifth segments with their apical margins pale testaceous, widely so in the middle, then narrowly, and again only so laterally; beneath rufo-testaceous.

6. Mexico, Oajaca.

### 4. *Megacilissa generosa*.

Length 8 lines.—Head and thorax black; abdomen dark green, with the legs black. The clypeus and labrum yellow, the first segment of the antennae, the flagellum beneath, and the first segment of the legs covered with fulvous pubescence. The thorax with fulvous pubescence, becoming dark rufo-fuscous between the wings, and more so on the metathorax; wings fulvo-hyaline, with the nervures ferruginous, the costal nervure black; the legs black and the femora with black pubescence, the tarsi ferruginous; the pubescence on the femora beneath pale fulvous. Abdomen with fulvous pubescence on the basal segment, and also on the two apical ones; on the intermediate ones it is very short, thin, and black; beneath, the sides are fringed with long fulvous pubescence.

6. Venezuela.

## APIDÆ, Leach.

## SYSTROPHA, Illig.

1. *Systropha difformis*.

*Male*. Length 5 lines.—Black and shining. The head much narrower than the thorax, the pubescence on each thin and cinereous; the three apical joints of the antennæ convolute, rufo-testaceous, and forming an equilateral triangle; the head closely punctured, and having an impressed line from the anterior ocellus to the antennæ. The mesothorax and scutellum finely punctured; wings subhyaline, the nervures dark fusco-ferruginous; the legs obscure rufo-piceous and with thin cinereous pubescence. Abdomen very finely punctured; the three basal segments with their apical margins constricted; the second segment much produced laterally, forming a prominent tubercle; the third segment also produced laterally, but less prominently so; the second segment has beneath a prominent tubercle, which is wedge-shaped, being narrowed behind, its apex being obliquely concave; the pubescence on the abdomen sparing and cinereous, that towards the apex above more dense and intermixed with fuscous.

*Hab*. Burmah.

## OSMIA, Latr.

1. *Osmia ephippiata*.

*Female*. Length 5 lines.—Black, the abdomen shining; head closely punctured; the face and cheeks with black pubescence; on the posterior margin of the vertex and on the thorax above it is ochraceous, on the sides, beneath, and on the legs it is black. Wings fusco-hyaline, the nervures black. Abdomen very finely punctured, the apical margins of the segments impunctate; beneath densely clothed with black pubescence.

*Hab*. Angara River, Siberia.

2. *Osmia rubripes*.

*Female*. Length 4 lines.—Black, the legs ferruginous, the coxae and trochanters black. The head closely punctured, and having thin pale fulvous pubescence, and a more dense patch on each side. The thorax with fulvous pubescence; wings fusco-hyaline. Abdomen

shining and very finely punctured, the basal segment with fulvous pubescence; the lateral apical margins of the third, fourth, and fifth segments with white fasciæ, clothed beneath with fulvous pubescence.

*Hab.* Angara River.

### 3. *Osmia rufitarsis*.

*♂*. Length 6 lines.—Black, the head and thorax with black pubescence and very closely punctured; the tarsi with bright fulvous pubescence, the apical joints ferruginous; wings fulvo-hyaline. Abdomen finely punctured, shining, and clothed with fulvous pubescence; beneath with fulvous pubescence.

*Hab.* Angara River.

## MEGACHILE, Latr.

### 1. *Megachile intricata*.

*♂*. Length  $5\frac{3}{4}$  lines.—Black. The face with pale golden pubescence, on the vertex it is short, thin, and black; the clypeus closely punctured, and with a longitudinal central carina. Thorax above with short sparing black pubescence and a little pale pubescence on the collar; beneath it is pale, also that on the metathorax; the apical joints of the tarsi ferruginous; the basal joint of the posterior pair with fulvous pubescence within; wings subhyaline. Abdomen densely clothed above with short fulvo-ferruginous pubescence, beneath it is pale and glittering.

*♀*. Closely resembles the female, but has the head proportionately wider; the apical segment of the abdomen angulated, and the apex slightly notched; the anterior tarsi simple.

*Hab.* Cape of Good Hope.

There are several species of *Megachile* that are very similar to each other: I am acquainted with three from India, three from Java, and one from Australia; all these have a black head and thorax and a fulvous abdomen. The present species most closely resembles *M. bicolor*; but from that species it differs in being smaller, the colour of the pubescence on the face, and also in that of the abdomen being more ferruginous; the male of *M. bicolor* has the apical segment of the abdomen denticulate.

### 2. *Megachile nasalis*.

*♂*. Length 6 lines.—Black. The face with sooty-black pubescence; the clypeus notched anteriorly and closely punctured. The thorax closely punctured; the sides and beneath with pale fulvo-



ochraceous pubescence; the legs are similarly clothed, that on the tarsi being very bright, the claw-joint rufo-piceous; wings fuscous, pale at their base. Abdomen closely punctured; the basal segment with pale pubescence, that on the two apical ones dark ferruginous; beneath, densely clothed with bright yellow pubescence, that on the two apical segments ferruginous.

*Hab.* Zulu.

### 3. *Megachile cordata*.

*Female.* Length  $3\frac{3}{4}$  lines.—Black. The face with whitish pubescence; from the insertion of the antennae to the vertex it becomes obscurely fulvous. The thorax thinly clothed with pale fulvous pubescence above, beneath it is thin and cinereous, as it is also on the tarsi outside, within it is fulvous; wings hyaline, with their apical margins clouded. Abdomen heart-shaped; the apical margins of the segments with fasciae of fulvous pubescence; beneath clothed with fulvous, the apical segment with dark fusco-ferruginous pubescence.

*Hab.* Natal.

### 4. *Megachile terminata*.

*Female.* Length 7 lines.—Black. The face with bright whitish pubescence; on the anterior portion of the clypeus, and also above the insertion of the antennae, it is fulvous. Thorax above clothed with short fulvo-ochraceous pubescence, beneath it is dense and inclines to cinereous; the apical joints of the tarsi ferruginous and with bright ferruginous pubescence; wings hyaline, with a dark fuscous cloud beyond the enclosed cells. Abdomen with the segments one to four clothed with bright fulvous pubescence, the two apical ones with black; beneath with dense bright fulvous pubescence, the apical segment with black.

*Male.* Length  $6\frac{1}{4}$  lines.—Black. The face with dense silvery-white pubescence, that on the vertex of the head and disk of the thorax fulvous; wings fulvo-hyaline, the nervures and stigma ferruginous; the tibiae and tarsi ferruginous, the anterior pair of the latter dilated and covered with pale fulvous pubescence, nearly white; beneath are two oblong black spots; the anterior coxae armed with a long blunt spine. Abdomen thinly covered with fulvous pubescence; the apical margins of the segments with fulvous fasciae, the apical margin of the terminal segment denticulate.

*Hab.* South Africa, Burghersdorp.

### 5. *Megachile albescens*.

*Female.* Length  $6\frac{1}{4}$  lines.—Black, with the legs and abdomen beneath ferruginous. The face and cheeks densely covered with

very-white pubescence, on the vertex it is thin and short; the mandibles ferruginous, the tips black, their base with short white pubescence; the flagellum of the antennæ, except the basal joint, ferruginous beneath. The mesothorax thinly sprinkled with very short white pubescence; on the metathorax, the sides, and beneath it is longer and more dense; the legs with white pubescence; wings hyaline, their nervures ferruginous. The basal margins of the abdominal segments with white pubescent fasciæ; beneath clothed with dense fulvous pubescence.

*Hab.* The White Nile. Collected by Consul Petherick.

#### 6. *Megachile modesta*.

*Female.* Length  $4\frac{1}{2}$  lines.—Black, with the entire pubescence white, sparing on the vertex and thorax above, and dense on the face and abdomen beneath. The flagellum beneath fulvous; the head and thorax above very closely punctured; wings hyaline, the nervures black, the tegulæ pale testaceous; the apical margins of the segments of the abdomen with narrow white pubescent fasciæ, usually more or less abraded.

*Hab.* White Nile. Collected by Consul Petherick.

#### 7. *Megachile consanguinea*.

*Female.* Length 7 lines.—Black. The face with yellowish-white pubescence; the head and thorax closely punctured; the collar and metathorax with white pubescence; beneath the thorax and on the legs it is black; on the tarsi within it is fulvous; the anterior wings fuscous, with a violet iridescence, the posterior pair hyaline. Abdomen shining, closely and finely punctured, the sides with patches of white pubescence; beneath densely clothed with fulvous pubescence; at the sides and at the apex it is black.

*Hab.* Natal.

This species resembles *M. lateralis*, but has the abdomen shorter and more heart-shaped and clothed with fulvous beneath.

#### 8. *Megachile tuberculata*.

*Female.* Length  $7\frac{1}{2}$  lines.—Black, with the legs rufo-piceous, the abdomen with a band of yellow pubescence at the base. The face with a mixture of pale and fuscous pubescence; the clypeus closely punctured and deeply emarginate at the anterior margin; the mandibles with the anterior half obscurely ferruginous, the teeth black. Thorax closely punctured, the scutellum produced laterally into a shining tubercle; the pubescence on the metathorax, the sides, and beneath pale yellowish white; the legs rufo-piceous; wings hyaline at the base, and fuscous beyond the

marginal cell. Abdomen shining and finely punctured, the base with pale fulvous pubescence; beneath densely clothed with bright fulvous pubescence.

*Hab.* Sierra Leone.

Two of the cells of this species, constructed of the leaves of a shrub, not the cuttings of leaves, were sent with the insects by James Foxcroft.

#### 9. *Megachile calida*.

*Female.* Length 5 lines.—Black, with the apex of the abdomen ferruginous. Head as wide as the thorax, subquadrate, finely punctured; the face with white pubescence; the flagellum of the antennæ, except the first joint, fulvous beneath. The pubescence on the thorax and legs cinereous; the apical joint of the tarsi ferruginous; the wings hyaline, the nervures black. Abdomen oblong and closely punctured; the two basal segments and the basal half of the third black, the following segments ferruginous, with their pubescence fulvous; beneath with glittering white pubescence.

*Male.* Rather smaller, but closely resembling the female. The face with white pubescence; the cheeks black, edged with a white fringe; thorax as in the female. The two basal segments of the abdomen black, the first with a ferruginous band, the second has the apical half ferruginous as well as the rest of the abdomen; the apical segment with the margin entire, and with a slight central depression.

*Hab.* Queensland.

#### 10. *Megachile ferox*.

*Male.* Length 5 lines.—Black, with a patch of ferruginous pubescence on the penultimate segment of the abdomen. The face with white pubescence; the flagellum fulvous beneath, with the apical joint compressed and slightly dilated. The pubescence on the sides of the thorax, beneath, and on the legs white; the anterior tarsi broadly dilated, pale testaceous, and fringed with white pubescence, having two black dots beneath; the anterior coxæ with long stout spines; wings hyaline, with their apex fuscous; the intermediate and posterior tarsi and the apical joints of the anterior pair ferruginous. Abdomen oblong; the basal segment fringed with white pubescence, also a little white pubescence on the apical margins of the two following segments laterally, and probably also on the third occasionally; the margin of the apical segment slightly notched in the middle.

*Hab.* Swan River.

11. *Megachile pictiventris*.

*♂*. Length 6 lines.—Black, the abdomen above with shades of green and violet. The face with white pubescence, that on the vertex black; the clypeus naked and closely punctured, shining, with its anterior margin slightly emarginate; the cheeks with long white pubescence. Thorax above and the scutellum closely punctured; the pubescence on the mesothorax short, sparing, and black, that on the metathorax, on the sides and beneath, white; the legs black above and rufo-piceous beneath; the posterior tibiae with short glittering white pubescence within, that on the basal part of the tarsi fulvous within. The abdomen clothed beneath with bright fulvous pubescence.

*♀*. Richmond River.

12. *Megachile rugosa*.

*♂*. Length 5 lines.—Black, the thorax and basal segment of the abdomen clothed with white pubescence. Head large, rather wider than the thorax; the face with golden-yellow pubescence; the anterior tarsi simple, the coxæ unarmed; the intermediate tarsi fringed behind with white pubescence; wings hyaline and with a slight fuscous cloud at their apical margins, a darker stain at the marginal cell; the nervures black. The abdomen strongly punctured, and with the apical margins of the second and third segments narrowly smooth and shining, the second with a patch of white pubescence laterally; the apical margin of the terminal segment emarginate in the middle.

*♀*. Western Australia.

13. *Megachile oblonga*.

*♂*. Length 4–5 lines.—Black, with a patch of bright fulvous pubescence on the fifth and sixth segments of the abdomen; the head, thorax, and abdomen nearly equal in width. The head oblong, and with a little white pubescence on the sides of the face; the labrum oblong, slightly narrowed at the apex, which is truncated and has a minute tooth in the middle of the truncation; the head and thorax finely and closely punctured; the wings hyaline, with black nervures and a faint cloud at their apex. Abdomen long, finely punctured, the margins of the segments depressed; the feet beneath with white pubescence.

*♀*. Western Australia.

14. *Megachile albobasalis*.

*♂*. Length  $8\frac{1}{2}$  lines.—Black, the abdomen clothed with dark red pubescence and having that on the basal segment white;

wings dark brown, with violet iridescence. The face with black pubescence; the mandibles stout, and with two acute teeth at their apex. The metathorax with white pubescence; the tarsi with ferruginous pubescence beneath; the abdomen is also clothed with the same beneath.

*Hab.* Murray Island, Torres Strait.

#### 15. *Megachile similis*.

*Female.* Length 5 lines.—Black, the pollen-brush beneath bright ferruginous. Head, thorax above, and the scutellum finely and closely punctured; the face with black pubescence; the anterior margin of the clypeus truncate. Wings fusco-hyaline, their apical margins fuscous, the nervures black; the pubescence on the legs beneath as well as on the cheeks inclining to hoary, on the legs above it is black. The abdomen shining and very finely punctured.

*Hab.* Aneiteum, New Hebrides.

This species closely resembles *Megachile pictiventris* from Australia, but the pubescence on the face is of a different colour, and the anterior margin of the clypeus is not emarginate.

#### 16. *Megachile albomarginata*.

*Female.* Length 6-6½ lines.—Black, the thorax with white pubescent spots, and the apical margins of the segments of the abdomen with narrow white pubescent fasciæ. The face with white pubescence on the clypeus and vertex it is black; the cheeks bearded with white pubescence. The prothorax, the sides beneath, the legs beneath, an ovate spot behind the tegulæ, and two spots at the base of the scutellum with white pubescence; wings fusco-hyaline, palest towards their base, the nervures black. The abdomen with bright rufo-fulvous pubescence, except that on the two apical segments, which is black.

*Hab.* New Caledonia.

#### 17. *Megachile scutellata*.

*Female.* Length 5 lines.—Black, shining, and closely punctured, the abdomen most finely so; the scutellum produced into an angle posteriorly, but not very acutely so. The face with white pubescence and with thin fuscous on the vertex; the clypeus naked, the anterior margin truncate; the pubescence on the metathorax, the sides and beneath, pale; on the tarsi it is rufo-fuscous above and bright rufo-fulvous beneath; wings slightly fuscous, with a darker cloud in the marginal cell, the nervures rufo-fuscous. The margins of the segments of the abdomen slightly depressed, having laterally pale marginal fasciæ; towards the apex of the abdomen the fasciæ are only slightly interrupted, in very pale

specimens probably entire; clothed beneath with dense fulvous pubescence, except that on the two apical segments, which is black.  
*Hab.* South-Sea islands.

#### 18. *Megachile diligens*.

*Male.* Length  $4\frac{1}{2}$  lines.—Black; the pubescence on the head and thorax obscure pale fulvous, becoming cinereous on the metathorax and on the face anteriorly; the abdomen with ferruginous pubescent fasciæ. The mandibles with four teeth, the two apical ones acute, the others blunt; the cheeks with long cinereous pubescence; the legs with a little short black pubescence above, on the tarsi beneath it is reddish brown; the claws ferruginous, tipped with black; wings subhyaline, the nervures black. Abdomen cordate, and densely clothed with bright ferruginous pubescence beneath.

*Female.* Rather smaller than the female, but very closely resembling it. Differs in having the clypeus densely covered with very pale fulvous pubescence, the anterior tarsi fringed behind with pale pubescence, the fifth and sixth segments of the abdomen densely clothed above with short ferruginous pubescence, the sixth segment deeply emarginate, the exterior angles dentiform.

*Hab.* Honolulu.

The Rev. T. Blackburn states that this species is not rare; it is found in nests of leaves of a species of *Acacia*, rolled up into cylindrical tubes, which are joined one at the end of another to the length of several inches, and are placed in crevices of masonry.

#### 19. *Megachile ardens*.

*Male.* Length 7 lines.—Black, the abdomen clothed with bright fulvous pubescence. The face, above the antennæ, with black pubescence, the vertex with a thin short fulvous pubescence, the same on the cheeks of the same colour; the clypeus strongly punctured, its anterior margin emarginate, the lateral angles of the emargination acute and subdentate. The thorax with a short fulvous pubescence above, on the sides and also beneath it is longer and paler; the anterior tarsi, and the intermediate and posterior inside, clothed with bright fulvo-ferruginous pubescence; the wings fusco-hyaline, darkest at their apex, with the nervures black.

*Hab.* Ceylon.

There are four or five species resembling this; but the present species is distinguished from them by the short velvety fulvous pubescence of the thorax, and by the form of the clypeus.

#### 20. *Megachile penetrata*.

*Male.* Length  $7\frac{1}{4}$  lines.—Black; the general pubescence pale ful-

vous, that on the face having a golden brightness; on the abdomen beneath it is pale towards the base, and rufo-fulvous towards the apex. The mandibles with four subacute teeth. The anterior tibiae produced outwardly at their apex into an acute angle or tooth. The mesothorax and scutellum closely and rather finely punctured; wings hyaline, faintly clouded at their apex, with the nervures ferruginous. The apical margins of the segments of the abdomen with pale pubescent fasciæ.

*Hab.* Northern India.

This species closely resembles *M. maritima* of Europe.

#### 21. *Megachile femorata*.

*Female.* Length 4-5 lines.—Black, with the four posterior femora ferruginous. The face with white pubescence; the clypeus naked, closely punctured, and having a central longitudinal smooth line; the cheeks with white pubescence. Thorax closely punctured and opaque; the pubescence on the sides beneath and on the legs white; above it is pale yellowish white; wings hyaline, slightly clouded at their apical margins, the nervures black, the tegulae pale testaceous. Abdomen cordate; the apical margins of the segments with white pubescent fasciæ; beneath clothed with white pubescence, except that on the terminal segment, which is black.

*Var.* The legs entirely ferruginous, the tibiae and tarsi obscurely so.

*Male.* Smaller, but closely resembles the female, and has the apical margin of the terminal segment of the abdomen denticulate.

*Hab.* Bombay district.

#### 22. *Megachile fulvipennis*.

*Female.* Length  $7\frac{1}{2}$  lines.—Black, the head and thorax very closely punctured, the abdomen clothed above with short pubescence and of a velvety blackness, beneath it is black but longer. The mandibles stout and with two stout teeth at their apex; the clypeus densely rugose, with a fine mesial carina, the anterior margin scarcely emarginate. The wings bright fulvo-hyaline, with the nervures rufo-testaceous, the posterior margins very pale fuscous.

*Hab.* Nicobar Islands.

#### 23. *Megachile relata*.

*Female.* Length  $7\frac{1}{2}$  lines.—Black, with the metathorax and the segment of the abdomen clothed with white pubescence. The head and thorax very closely punctured and subopaque; the wings dark fuscous, with their base pale; the legs usually more or less rufopiceous beneath. The three basal segments of the abdomen very coarsely punctured, the rest more finely so; the apical margin

segments have laterally a narrow fascia of white pubescence; clothed beneath with fulvous pubescence.

*Loc.* Shanghai, Hong Kong.

This is the Chinese representative of the *Megachile disjuncta* of Fabricius, from which it differs principally in having fulvous pubescence beneath the abdomen; in *M. disjuncta*, from India, it is black.

#### 24. *Megachile humilis*.

*Male.* Length  $7\frac{1}{4}$  lines.—Black, with sooty-black pubescence on the face, and pale fulvous on the margins of the thorax above. The anterior margin of the clypeus truncate; mandibles very stout and with two apical teeth. Thorax with the pubescence on the sides and beneath pale; wings hyaline, but clouded beyond the submarginal cells, the nervures obscurely ferruginous, the tegulae pale testaceous; the legs rufo-piceous beneath; the tarsi with fulvous pubescence. Abdomen finely punctured, the margins of the segments depressed; the basal segment with pale pubescence laterally; the apical margin of the segments with widely interrupted narrow pale fasciae; beneath, the basal half is clothed with pale fulvous, and the apical half with black pubescence.

*Female.* Smaller, but resembles the female: it has, however, pale pubescence on the face, the mandibles having four acute teeth, the anterior tarsi simple, the apical segment of the abdomen notched in the middle of its margin.

*Loc.* Shanghai.

#### 25. *Megachile remota*.

*Male.* Length 6 lines.—Black; the general pubescence above pale fulvous, on the sides of the face below the insertion of the antennae it is palest; the clypeus strongly punctured; the pubescence on the cheeks and thorax beneath whitish. The mesothorax closely and rather strongly punctured above; the wings hyaline, with a band beyond the submarginal cells, the nervures fusco-ferruginous; the legs with pale pubescence outwardly, the tarsi fulvous; the calcaria pale testaceous. Abdomen with violet and green pubescence above; a narrow pale fulvous pubescent fascia on the apical margins of all the segments; clothed beneath with pale fulvous pubescence, that on the two apical segments is more or less white.

*Loc.* Shanghai.

#### 26. *Megachile determinata*.

*Male.* Length  $7\frac{1}{4}$  lines.—Black, the head and thorax above with



rufo-fulvous pubescence, on the sides of the thorax beneath, on the legs, and on the entire abdomen it is black. The mandibles stout, porrect, and with two teeth at their apex; the clypeus punctured, and with a longitudinal central shining carina; wings dark fuscous, palest towards their apex.

*Hab.* Java.

#### 27. *Megachile barbatula*.

*Male.* Length 6 lines.—Black, with two, sometimes three, of the basal segments of the abdomen ferruginous. The face with fulvous pubescence; at the base of the clypeus a transverse patch of black, and the anterior part with white pubescence; the flagellum of the antennæ fulvous beneath. The thorax with fulvous pubescence above, paler on the sides and beneath; the coxæ, trochanters, and femora beneath more or less ferruginous; the anterior coxæ armed with stout ferruginous spines; the anterior tarsi pale testaceous and broadly dilated, the basal joint produced into an oblong process that projects forwards over the following joints; all the joints covered with short white pubescence above, and with a thick long fringe of white pubescence behind, which is bright fulvous on its hinder margin; the first joint of the tarsus is narrowly margined with fuscous anteriorly; the posterior tarsi have bright fulvous pubescence beneath, the first joint having a floccus of white at the base; wings slightly fulvo-hyaline, with the apical margins slightly clouded. Abdomen incurved at the apex; the ferruginous segments have their margins more or less black, and have also transverse bands of fulvous pubescence before the black margins; the apical segment emarginate in the middle.

*Hab.* Ega, on the Amazons.

#### 28. *Megachile pulchra*.

*Female.* Length 6 lines.—Head and thorax black, and clothed with fulvous pubescence, the abdomen and legs ferruginous; the flagellum of the antennæ fulvous beneath. The wings fulvo-hyaline, their apical margins slightly clouded, the nervures rufo-testaceous; the legs sometimes more or less stained with black, sometimes entirely ferruginous. The apical margins of the segments of the abdomen with narrow pale fasciæ; beneath clothed with pale fulvous pubescence.

*Male.* Closely resembles the female, but has the apical half of the mandibles ferruginous, and the antennæ entirely so, being only slightly fuscous above; the anterior tarsi dilated, the basal joint being produced into a long process that projects over the following joints; all the joints fringed behind with long curled pubescence which is edged with fuscous; the coxæ armed with black spines; wings as in the female; the apical segment of the abdomen with a deep depression, its margin slightly emarginate.

*Hab.* St. Paulo, on the Amazons.

29. *Megachile opifex*.

*Female*. Length 6 lines.—Black; the legs ferruginous, clothed with fulvous pubescence; that on the cheeks, the thorax beneath, and on the basal segments of the abdomen beneath whitish, that on the terminal segments bright fulvous. The mandibles obscurely ferruginous at their apex, the flagellum fulvous beneath. The wings fulvo-hyaline, the nervures ferruginous, the tegulae pale rufo-testaceous. The abdomen covered with short fulvous pubescence, the margins of the segments having fasciae of the same colour, but more dense and longer; the apical segment with short cinereous pubescence, and sprinkled with black hairs.

*Male*. A little smaller than the female, which it closely resembles; black, with the legs ferruginous, the wings being the same: the anterior tarsi dilated, and thickly fringed behind with white pubescence, which is bordered with ferruginous.

*Hab.* St. Paulo, on the Amazons.

This species closely resembles *M. pulchra*, from which the female differs in having the abdomen black; the male is distinguished by a different form of the dilated joints of the anterior tarsus, the apical joint being oblong and widest at its apex, but has not the prolonged appendage found in *M. pulchra*.

30. *Megachile pallipes*.

Length 6 lines.—Black, the legs ferruginous, with the tarsi dilated. The face with bright golden-yellow pubescence; the antennae black, with the apical joint compressed and dilated. The pubescence on the disk of the thorax dense, short, and of a bright golden yellow, on the metathorax it is paler and beneath whitish; the wings fulvo-hyaline, the nervures ferruginous, the tegulae rufo-testaceous; the anterior tarsi dilated, fringed behind with white pubescence, which is fuscous beneath; the anterior coxae with cinereous pubescence. The apical margins of the first to fourth segments of the abdomen with narrow fasciae of fulvous pubescence; the sixth segment covered with white pubescence, its apical margin notched in the middle, the segments beneath fringed with white pubescence.

*Hab.* St. Paulo, on the Amazons.

31. *Megachile crassipes*.

Length 6 lines.—Black, with the posterior femora incrassate. The face with pale pubescence from the clypeus to the anterior vertex; on the vertex it is cinereous, and on the clypeus white. A transverse line of black; the flagellum fulvous beneath. The legs with cinereous pubescence; the wings fulvo-hyaline, the nervures ferruginous, the tegulae rufo-testaceous; the anterior legs

rufo-testaceous beneath, the femora dilated, the apex of the tibia testaceous above; the tarsi pale testaceous, dilated, with the first and second joints produced into large projecting lobes, the first having a longitudinal fuscous stripe, all the joints fringed behind with long white pubescence, which is edged narrowly with fuscous; the coxæ armed with black spines; the intermediate femora also dilated, and, as well as the tibiæ, rufo-piceous beneath; the tarsi rufo-testaceous, with the tips of the joints rufo-fuscous; the posterior femora broadly dilated and the tibiæ curved, the tarsi rufo-piceous; the femora rufo-piceous beneath. Abdomen shining, the margins of the segments thinly fringed with cinereous pubescence; the apical margin of the terminal segment slightly notched in the middle.

*Hab.* St. Paulo, on the Amazons.

### 32. *Megachile compacta*.

*Female.* Length 6 lines.—Black; the thorax above clothed with fulvous pubescence. The face with short cinereous pubescence at the sides of the clypeus; above the insertion of the antennæ it is fulvous; the flagellum fulvous beneath. The wings fulvo-hyaline, the nervures and tegulæ ferruginous; all the tarsi with bright fulvous pubescence beneath. Abdomen shining and very finely punctured; the apical margins of the segments with pale fulvous fasciæ usually more or less interrupted in the middle; the apical segment with erect black hairs; clothed beneath with changeable yellowish-white pubescence.

*Hab.* Santarem.

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

### 33. *Megachile hilaris*.

*Male.* Length 6 lines.—Black; the legs ferruginous, the anterior tarsi dilated, and the abdomen with pale fasciæ. The face with bright pale golden pubescence, that on the vertex and disk of the thorax fulvous, that on the cheeks and thorax beneath white; the flagellum fulvous beneath. The metathorax with pale pubescence; the intermediate and posterior legs rufo-piceous, darkest above; their tarsi pale rufo-testaceous; the anterior tarsi yellowish; the dilated joints with a thick fringe of white pubescence, which is fulvous beneath; the other tarsi with a thin white fringe; the anterior coxæ with stout blunt spines; wings hyaline, with a fuscous cloud on their apical margins; the nervures ferruginous, the tegulæ rufo-testaceous. Abdomen very finely and closely punctured; the basal segment with pale fulvous pubescence, the apical margins of the segments with pale fasciæ; the fifth segment with very short pale pubescence at its base and with black beyond; the entire segment sprinkled with long black hairs; the sixth seg-

with short pale pubescence and with long pubescence of the same colour, its apical margin emarginate.

*Hab.* Santarem.

This is probably the male of *M. compacta*.

#### 34. *Megachile strenua*.

*♂*. Length  $4\frac{3}{4}$  lines.—Black, with the legs ferruginous; the anterior tarsi dilated. The face clothed with bright golden-yellow pubescence, that on the clypeus and on the cheeks is paler, on the vertex there are a few black scattered hairs. The thorax above and the vertex of the head closely punctured; a patch of white pubescence behind the tegulae; the metathorax with white pubescence; the anterior tarsi pale testaceous, the apical joint ferruginous; the dilated joints fringed behind with whitish pubescence, the margin of the fringe fusco-ferruginous; the intermediate and posterior legs with dark fuscous stains, the tarsi dark above; a broad dark fuscous cloud on the anterior margin of the fore wings. Abdomen closely punctured; on the apical margin of the first, second, and third segments, laterally, there is a patch of white pubescence.

*Hab.* St. Paulo, on the Amazons.

#### 35. *Megachile agilis*.

*♂*. Length  $3\frac{1}{2}$  lines.—Black, with the base and apex of the abdomen ferruginous. A little whitish pubescence between the antennae and on the clypeus; on the face, at the sides of the clypeus, it is whitish, but intermixed with black; on the vertex it is black; the cheeks with a long beard of white pubescence; the tegellum obscurely fulvous beneath. Thorax closely punctured; the disk thinly sprinkled with short black pubescence, the metathorax with pale fulvous, that on the thorax beneath long and white; the legs obscurely rufo-piceous beneath, the anterior pair long ferruginous beneath, the tarsi and apical joints of the intermediate and posterior pair of the same colour; wings fulvous, clouded beyond the submarginal cells, with the nervures and tegulae rufo-testaceous. The apical margins of the segments of the abdomen fringed with fulvous pubescence; the apical segment notched in the middle.

*Hab.* St. Paulo, on the Amazons.

#### 36. *Megachile rubicunda*.

*♂*. Length  $4\frac{1}{2}$  lines.—Black, with the legs and the abdomen beneath and at the base ferruginous. The face with a dense fulvous pubescence, that on the clypeus being bright yellowish white; it is pale on the cheeks, and on the legs and body beneath. The thorax

above with fulvous pubescence, but with pale on the metathorax. the wings fulvo-hyaline, the nervures ferruginous, the tegulæ pale rufo-testaceous; anterior tibiæ and femora with a black stripe behind, the coxæ also black. The basal segment of the abdomen ferruginous, and, as well as the three following segments, margined with fulvous fasciæ, the following segments covered with short fulvous pubescence, the margin of the apical segment entire. beneath, the segments are margined with pale pubescence.

*Hab.* St. Paulo, on the Amazons.

### 37. *Megachile moderata*.

*Female.* Length  $6\frac{1}{2}$  lines.—Black, with fulvo-hyaline wings, the apical margins of the segments of the abdomen with very narrow white fasciæ. The face with white pubescence at the sides and between the antennæ, a little fulvous between the ocelli; the mandibles ferruginous, the teeth black; the flagellum fulvous beneath, with the apical joint black. The thorax with short, thin, pale fulvous pubescence above; on the metathorax, the sides, and beneath it is whitish; the legs dark rufo-piceous, palest beneath, and covered with a downy whiteness, that on the tarsi more or less fulvous above and bright rufo-fulvous beneath; the nervures of the wings and the tegulæ rufo-testaceous. The abdomen with fulvous pubescence beneath, bordered at the sides with black; above it is covered with a fine granulation, and has a short, thin hoary pubescence, observable when viewed sideways.

*Hab.* Ega.

### 38. *Megachile pullata*.

*Female.* Length  $6\frac{1}{4}$  lines.—Black, clothed with black pubescence. The clypeus closely and rather strongly punctured, its anterior margin slightly emarginate; the flagellum of the antennæ fulvous beneath. The scutellum smooth and shining; the pubescence on the metathorax sooty black; the wings pale fulvo-hyaline, the nervures rufo-testaceous, the tegulæ rufo-piceous; the first joint of the tarsi with rufo-fulvous pubescence beneath. The apical margins of the segments of the abdomen narrowly and obscurely rufo-piceous; beneath, the second segment has pale fulvous, and the following segments black pubescence.

*Hab.* Ega.

### 39. *Megachile propinqua*.

*Female.* Length 5 lines.—Black; the sides of the face with white pubescence, intermixed with black above the antennæ; the flagellum obscurely fulvous beneath. Thorax very finely and closely punctured; a line of white pubescence on the margin of the prothorax, and a similar one that runs from the tegulæ, and curves backwards along the base of the scutellum; the metathorax with

white pubescence; the legs obscurely rufo-piceous above, distinctly beneath; wings subhyaline, the nervures dark fusco-ferruginous. Abdomen slightly shining, very finely punctured, and with narrow white pubescent fasciæ; clothed beneath with whitish pubescence, which is margined with black laterally.

*Hab.* Ega, Tapajos, and Tunantins.

#### 40. *Megachile ventralis*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black; the thorax densely clothed with cinereous pubescence, faintly tinged with fulvous above. The vertex with pale fulvous pubescence; on the sides of the face it is cinereous; the clypeus strongly punctured, its anterior margin rounded. The wings hyaline, their apical margins clouded; a yellow stain in the marginal cell; the nervures and tegulæ rufo-testaceous; the legs obscurely rufo-piceous, with a thin cinereous pubescence, that on the tarsi pale fulvous; on the basal joint of the posterior pair it is dark fuscous. Abdomen cordate and shining, with the apical segment opaque, very finely punctured; beneath, the basal segment and a small space in the middle of the second with white pubescence, that on the other parts with black pubescence.

*Hab.* Ega.

#### 41. *Megachile rubriventris*.

*Female.* Length  $4\frac{3}{4}$  lines.—Head and thorax black, abdomen ferruginous. The face with a little cinereous pubescence, on the vertex it is black; the flagellum fulvous beneath. Thorax with black pubescence above; on the metathorax, the sides beneath, and also on the legs beneath it is cinereous; on the legs above it is black; the claw-joint of the tarsi ferruginous; wings fulvo-hyaline, the nervures and tegulæ ferruginous. Abdomen ferruginous, shining, and with fine shallow punctures; the pubescence beneath white, except that on the two apical segments, which is black.

*Hab.* Santarem.

#### 42. *Megachile fossoris*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black, and with the extreme base of the abdomen and the legs ferruginous. The face on each side of the clypeus with a little cinereous pubescence; the mandibles and the antennæ beneath ferruginous; a narrow fringe of fulvous pubescence crossing the vertex between the ocelli; the posterior margin of the vertex with a similar fringe. The thorax above with fulvous pubescence, short and sparing on the disk; on the metathorax, the sides, and beneath it is cinereous; wings fulvo-hyaline, the nervures and tegulæ ferruginous. The apical margins of the segments of the abdomen and the base of the first segment

fringed with fulvous pubescence; beneath, the pubescence is white except that on the two apical segments, and also that on the side of the fourth, which is black.

*Hab.* Santarem.

#### 43. *Megachile urbana*.

*Female.* Length 5 lines.—Black; the head and thorax opaque, the abdomen slightly shining. The face with a little pale fulvous pubescence on each side of the clypeus, and a little black above it; the anterior margin of the clypeus emarginate; the cheeks with cinereous pubescence. Thorax, and also the head, very closely punctured; the margin of the prothorax and the basal margin of the metathorax with a short thick fringe of white pubescence; the legs obscurely rufo-piceous; wings subhyaline, with a fuscous cloud on the anterior margin of the fore wings; the nervures black. The apical margins of the segments of the abdomen obscurely rufo-piceous, clothed beneath with white pubescence.

*Male.* Length 3-4 lines.—Black. The face densely clothed with pale fulvous pubescence; on the cheeks, body beneath, and on the legs it is cinereous; the anterior tarsi pale rufo-testaceous, the intermediate and posterior pairs are darker; all are fringed with long white pubescence; a narrow line of white tomentum crosses the thorax between the wings; the wings as in the female. The apical margin of the segments of the abdomen with a narrow fringe of white pubescence, usually more or less obliterated; the two apical segments covered with hoary pile; the apical segment notched in the middle.

*Hab.* Santarem.

#### 44. *Megachile lobitarsis*.

*Male.* Length 5 lines.—Black; the face densely clothed with pale gold-coloured pubescence, on the vertex it is thin and fulvous; antennae ferruginous, slightly fuscous above; the cheeks fringed with white pubescence. The thorax thinly clothed with fulvous on the sides and beneath the pubescence is white; the wings fulvous hyaline, the nervures and tegulae ferruginous; the legs ferruginous beneath, the anterior pair palest, more or less fuscous above; the anterior tibiae with a black line; their tarsi dilated, yellowish, the first joint oblong, produced at its apex into a projecting lobe; the following joints are minute and project each into a long lobe; the tarsi with a long curled white fringe, which has its margin behind fuscous; the intermediate and posterior tarsi pale almost white; the coxae armed with a blunt spine. Abdomen shining; the margins of the segments with a narrow thin fringe of pale pubescence; the apical margin of the terminal segment deeply emarginate.

*Hab.* St. Paulo, on the Amazons.

45. *Megachile pilosa*.

*Male*. Length  $4\frac{1}{4}$  lines.—Black, covered with a changeable golden pile. The face with short pale golden pubescence; in front of the insertion of the antennæ there is a little black pubescence; the clypeus strongly punctured, its anterior margin serrated. The thorax with short pale gold-coloured pubescence; the wings fulvo-hyaline, the apical margin of the anterior wings fuscous, darkest in a line with and beyond the marginal cell; the nervures ferruginous, the tegulae testaceous; the thorax beneath and the legs are a thin, short, hoary pubescence, most dense on the tarsi, the anterior pair fulvous beneath. Abdomen pilose, the fourth and fifth segments with pale fulvous fasciæ, the sixth segment densely pilose; the pubescence on the abdomen beneath is fuscous in the middle and pale at the sides.

*Hab.* Fonteboa, on the Amazons.

46. *Megachile vigilans*.

*Male*. Length 5 lines.—Black, with the extreme base of the abdomen above and the two basal segments beneath ferruginous. The face with fulvous pubescence; the clypeus naked, punctured, with a shining impunctate space in the middle, its anterior margin emarginate; the flagellum obscurely fulvous beneath. The thorax with short fulvous pubescence above; on the metathorax it is longer; wings pale fulvo-hyaline, faintly clouded at their apex, the nervures and tegulae ferruginous; the legs obscurely rufo-piceous; the intermediate and posterior pairs ferruginous beneath; the tarsi with bright fulvous pubescence beneath. Abdomen shining, covered with fine shallow punctures; the apical margins of the segments fringed laterally with fulvous pubescence; the apical segment opaque, and covered with a fine cinereous pile; clothed beneath with pale fulvous pubescence, that on the two apical segments is black.

*Hab.* Para.

47. *Megachile constructrix*.

*Male*. Length 6 lines.—Black. The face clothed with fulvous pubescence; the clypeus shining and punctured, with the anterior margin emarginate; the tips of the mandibles ferruginous; the flagellum of the antennæ obscurely fulvous beneath. Thorax shining; the mesothorax finely and not very closely punctured; the scutellum impunctate; the sides beneath and the metathorax with pale pubescence; the latter has a little that is black behind the wings; the wings subhyaline, the nervures dark, the apical margins faintly clouded; all the tarsi with rufo-ferruginous pubescence beneath; the anterior pair and also the intermediate fringed with pale pubescence behind; the spines at the apex of the tibiae are rufo-testaceous. Abdomen very finely punctured, shining.



and with an interrupted narrow white fringe on the apical margin of the segments; the apical segment with cinereous pile; clothed beneath with white pubescence in the middle, that at the sides being black.

*Hab.* Villa Nova.

#### 48. *Megachile incongrua*.

*Female.* Length 4 lines.—Black, with the legs ferruginous. The face densely covered with yellowish-white pubescence; the cheeks have a similar pubescence, but it is longer; the tips of the mandibles ferruginous. The pubescence on the thorax is similar to that on the head; the mesothorax and scutellum closely and finely punctured; wings subhyaline, their apical margins and also the marginal cell with a fuscous cloud, the nervures and tegulæ ferruginous. Abdomen shining, with the apical segment opaque, covered with fine shallow punctures; the apical margins of the segments with a narrow fringe of white pubescence, usually more or less interrupted; clothed beneath with white pubescence.

*Male.* The same length as the female; the legs ferruginous, but more or less stained with fuscous, the tarsi black above and fringed with white pubescence. The front clothed with fulvous pubescence, the cheeks thickly bearded with pale pubescence; the anterior tarsi simple, the trochanters with a sharp angular spine; wings as in the other sex. Abdomen oblong, the base deeply concave, the margins of the segments constricted; the apical margin with a white fringe laterally; the margin of the apical segment rounded; beneath, the segments have a thick white marginal fringe.

*Hab.* Tunantins.

#### 49. *Megachile cornuta*.

*Female.* Length 6½ lines.—Black; the clypeus deeply incised, the lateral angles produced into angulated compressed horns. The face with short white pubescence; the cheeks, the sides of the thorax, and the legs with a short thin downy pubescence; the sides of the metathorax with a white fringe; wings hyaline, with a fuscous cloud at their apex beyond the marginal cells, and which also enters the marginal cell; the tarsi fulvous beneath, their apical joints ferruginous. Abdomen oblong; the apical margins with narrow white fasciæ; clothed beneath with pale fulvous pubescence.

*Hab.* Mendoza.

#### 50. *Megachile anthidioides*.

*Female.* Length 5 lines.—Black; the second, third, and fourth segments of the abdomen with a broad fringe on the apical margins, laterally, of yellow pubescence. The flagellum fulvous beneath.

the face with a mixture of pale and black pubescence; the clypeus naked and punctured. The thorax densely clothed with black pubescence, that on the legs is also black; the tarsi fulvous beneath, with the apical joints ferruginous; wings fulvo-hyaline, the nervures ferruginous. Abdomen shining; the lateral patches of pubescence of a lunate shape, the first pair widest apart; clothed beneath with pale pubescence in the middle, and with black on each side, that at the apex entirely black.

*Hab.* Parana.

#### 51. *Megachile sedula*.

*Female.* Length 5 lines.—Shining black. The vertex impunctate; the clypeus punctured, its margin emarginate; the face with white pubescence on the sides, mixed with black between the antennæ; the flagellum obscurely fulvous beneath; the cheeks with white pubescence. Thorax very finely and distantly punctured; the pubescence black, with a tuft of white below and in front of the tegulæ, also a little white pubescence on the metathorax laterally; the legs obscurely rufo-piceous beneath; the wings fusco-hyaline, darkest at the anterior margin of the fore wings. Abdomen clothed beneath with bright ferruginous pubescence.

*Hab.* St. Domingo.

#### 52. *Megachile peruviana*.

*Female.* Length 4 lines.—Black, the abdomen shining, and clothed beneath with white pubescence. Head closely punctured and semi-opaque; the clypeus more strongly punctured than the vertex, its anterior margin crenulated; the face, on each side, with white pubescence. Thorax closely punctured, its pubescence on the sides, beneath, and on the metathorax thin and white; wings hyaline and iridescent, faintly clouded at the apical margins, the nervures black. Abdomen more finely punctured than the thorax; the apical segment opaque, and covered with a cinereous pile; the apical margins of the segments narrowly fringed with white pubescence, which is usually much obliterated.

*Male.* Rather smaller than the female; the front with white pubescence; the anterior margin of the clypeus with a minute tooth in the middle. The thorax and wings as in the female. The apical margins of the segments of the abdomen rufo-testaceous, and more or less fringed with white pubescence; the apical margin of the sixth segment entire; the apical margins of the three basal segments beneath fringed with white pubescence.

*Hab.* Peru.

#### 53. *Megachile concinna*.

*Female.* Length 4 lines.—Black; the head and thorax opaque, the abdomen slightly shining, the pubescence entirely white. The

front pubescent, densely so at the sides of the face. The pubescence on the thorax above is very short and sparing; on the metathorax it is long, and dense at the sides; wings hyaline and without descent, the tegulae and nervures rufo-testaceous. The basal segment of the abdomen pubescent, densely so laterally; the apical margins of the segments with narrow pubescent fasciae, two or three pubescent spots on the apical segment; beneath densely pubescent; the apical segment with a little short black pubescence.

*Hab.* St. Domingo.

#### 54. *Megachile solitaria*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black, with the three basal segments of the abdomen obscurely ferruginous, and their apical margins with bright ferruginous pubescence. The sides of the face with sooty black pubescence; a little pale ferruginous pubescence at the sides of the metathorax; wings bright fulvo-hyaline at the basal portion and fuscous beyond the enclosed cells. The pubescence on the three apical segments of the abdomen above black; beneath the pubescence on the basal half is ferruginous, the apical portion black.

*Hab.* St. Domingo.

#### 55. *Megachile elongata*.

*Male.* Length 6 lines.—Black; head and thorax opaque and very closely punctured, abdomen shining and finely punctured. The face densely covered with yellowish-white pubescence, that on the cheeks long and white. The pubescence on the thorax and legs white; all the tarsi pale testaceous, the anterior pair dilated, and thickly fringed behind with white pubescence; wings subhyaline, their apical margins clouded, a darker cloud beyond the marginal cell. Abdomen oblong; the apical margins of the segments with narrow pale fasciae; the sixth segment deeply notched in the middle.

*Hab.* St. Domingo.

#### 56. *Megachile armata*.

*Male.* Length 7 lines.—Black. The face densely clothed with bright pale yellowish-white pubescence, on the vertex it is thin and fulvous; the mandibles very stout, smooth and shining, having a few fine punctures, pale rufo-testaceous at their apex, and armed at their base beneath with a stout tooth. The pubescence on the thorax is pale fulvous above and whitish on the sides and beneath; the anterior tarsi pale testaceous, nearly white, and broadly dilated, thickly fringed behind with curled white pubescence; the femora beneath and the apex of the tibiae pale; the first joint of the tarsi has its margins fringed with short dark pubescence, the other joints have their margins brown; the femora thickly fringed

with white pubescence; the coxæ have each a stout blunt spine, the intermediate coxæ have a long and more slender acute spine, and the femora are incrassate. Abdomen with the three segments thinly clothed with erect pale fulvous pubescence, the fourth and fifth have their apical margins fringed with short pubescence, and the apical margin of the sixth has a small spine in the middle.

Mexico, Oajaca.

#### 57. *Megachile decepatrix*.

Length  $5\frac{1}{2}$  lines.—Black, its pubescence white, the abdomen with a purple tinge. The head and thorax closely punctured; the face densely pubescent; the clypeus strongly punctured; the chin fulvous beneath; the cheeks with dense pubescence. The thorax with a line of white pubescence from the tegulæ passing to the base of the scutellum; the legs rufo-piceous beneath; the wings with fulvous pubescence beneath; the wings subhyaline. The apical margins of the segments of the abdomen with narrow white pubescent fasciæ; the basal segment thinly pubescent in the middle and densely so at the sides: beneath, the pubescence is abundant and of silvery brightness.

St. Domingo.

#### 58. *Megachile orbata*.

Length 6 lines.—Head and thorax very closely punctured; the face opaque; the face densely clothed with pale pubescence, that on the cheeks is white; the flagellum of the antennæ fulvous beneath. Thorax with white pubescence; on the disk it is very dense, on the metathorax, the sides, and beneath it is longer and more dense; all the tarsi yellowish white, the anterior pair very dilated and fringed behind with curled white pubescence, the first joint elongate and broadest at its apex, the following small and transverse, diminishing in size to the apical joint; the femora and tibiæ pale beneath; the coxæ armed with a stout spine. Wings hyaline, slightly fuscous beyond the enclosed cells, the veins rufo-fuscous. Abdomen oblong; the apical margins of the segments with narrow pale pubescent fasciæ; the basal segment deeply concave above, the second segment with a deep transverse channel at its basal margin; the abdomen finely punctured; the apical segment rugose, and with a deep notch in its apical margin.

St. Domingo.

#### 59. *Megachile valida*.

Length 7 lines.—Black; the pubescence on the head and thorax white, that on the abdomen yellowish-white. The head and thorax very finely punctured; the face and cheeks densely

pubescent, that on the clypeus slightly fulvous; the vertex with a little black pubescence. The thorax on the sides and beneath with white pubescence; above, it is thin and mixed with black. Wings subhyaline, the nervures and tegulæ black; the first joint of the tarsi with fulvous pubescence beneath. Abdomen shining, with a thin, short, black pubescence above; the apical margins of the segments with narrow yellowish-white pubescence beneath densely clothed with pale fulvous pubescence, except the two apical segments, where it is black.

*Hab.* Mexico, Oajaca.

#### 60. *Megachile breviscula*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black, short and broad, with hyaline wings, the nervures fusco-ferruginous. The vertex shining and very finely punctured; the clypeus shining and having stronger punctures; the sides of the face with griseous pubescence, on the vertex it is fuscous and thin; the flagella fulvous beneath, except at the base and apex; the mandibles ferruginous, with the base and apex black. The thorax with a short fuscous pubescence above; on the metathorax, the sides beneath it is whitish; the tegulæ, the tarsi, tips of the femora of the tibiae ferruginous. Abdomen short and cordate, with a thin pale fulvous pubescence at the base; the apical margin of the segments with narrow pale fulvous pubescent fasciæ; densely clothed beneath with a glittering pubescence, which changes colour when viewed in different lights; whitish in the middle, brown mixed with black at the sides.

*Hab.* Mexico, Orizaba.

#### 61. *Megachile irritans*.

*Female.* Length 5 lines.—Black, with fuscous wings, the anterior pair with the front margin dark fuscous with a violet iridescence. The face with white pubescence; the clypeus strongly punctured, its anterior margin slightly emarginate; the vertex with a little black pubescence. Thorax shining, finely and not very densely punctured; a fringe of black pubescence passes along the posterior margin of the scutellum to the insertion of the posterior wing; at the lateral angles of the metathorax and beneath the tegulæ, on the front, there is a tuft of white pubescence; the claws of the tarsi ferruginous. Abdomen cordate, shining, except the apical segment, which is opaque; the sides with a little black pubescence beneath densely clothed with white pubescence.

*Hab.* Mexico, Orizaba.

#### 62. *Megachile candida*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black, with the pubescence pale fulvous. The face pubescent, the clypeus slightly so, and punctured.

tips of the mandibles rufo-piceous. The mesothorax with two patches of short pubescence anteriorly and another behind the tegula; the wings pale fulvo-hyaline, the nervures ferruginous, the tegulae rufo-piceous. Abdomen cordate; the apical margins of the segments with narrow pubescent fasciæ; the apical segment with pale fulvous tomentum; beneath densely clothed with pale fulvous pubescence.

Length  $5\frac{1}{2}$  lines.—Its pubescence pale fulvous; that on the head dense and long, very bright and pale on the clypeus. Thorax pubescent; the wings as in the female; the anterior femora and tibiae ferruginous, with a dark line in front; the tarsi yellow, and apically dilated; the first joint narrowest at the base, the following joints short, transverse, and each in succession smaller, all covered behind with curled hairs, which are black at their tips; the coxæ with long black spines; the intermediate tibiae and the tarsi of the posterior pair ferruginous, their tarsi yellow. Abdomen oblong, very slightly narrowed posteriorly, covered with short pale fulvous pile, the apical margins of the segments with narrow fasciæ; the apical segment covered with pale pubescence, and deeply notched in the posterior margin.

Mexico.

### 63. *Megachile bipartita*.

Length  $4\frac{3}{4}$  lines.—Black, the pubescence on the head and thorax cinereous, that on the abdomen fulvous. The face, as high as the front of the vertex, pubescent; the clypeus naked, its anterior margin crenulated. The thorax with thin short pubescence above, the metathorax and the sides it is longer and more dense; the first joint ferruginous; wings hyaline, the nervures black, the apical margins beyond the second submarginal cell slightly fuscous. Abdomen oblong, the third, fourth, and fifth segments covered with short fulvous pile; the apical margins of all the segments with narrow, pubescent, fulvous fasciæ; densely clothed beneath with short fulvous pubescence, which is palest at the base of the abdomen.

Length  $4\frac{1}{4}$  lines.—The pubescence as in the female, the abdomen being densely covered with short fulvous pubescence beneath the third segment; the apical one deeply notched in the posterior margin; the anterior tarsi simple.

Mexico, Oajaca.

## ANTHIDIUM, Fabr.

### 1. *Anthidium compactum*.

Length 3 lines.—Black, with the head and thorax very punctured, the former, as well as the abdomen, spotted with

yellow. The clypeus, the face on each side of it, and the mandibles, yellow; the tips of the latter ferruginous; a minute spot on the posterior margin of the vertex above the eyes yellow. Thorax with a minute angulated white spot beneath the wings, and a yellow one on the tegulæ in front; the apical joints of the tarsi ferruginous; the tarsi with white pubescence above and fulvous beneath; wings subhyaline, the anterior pair dark fuscous on the fore margin and at the apex of the wings. Abdomen with the first to fifth segments each with an oblong transverse yellow lateral macula; shining, with the two basal segments finely punctured and clothed beneath with white pubescence.

*Hab.* Sierra Leone.

## 2. *Anthidium lanificum*.

*Female.* Length 4 lines.—Black; the head and thorax closely punctured; abdomen smooth, shining, and punctured only at the basal margins of the segments. A triangular spot on the clypeus, and a similar spot on each side of it on the face, the mandibles, and an abbreviated line on the posterior margin of the vertex above the eyes yellow; the flagellum beneath, except two or three of the basal joints, fulvous; the margins of the mandibles and their apex black. The tubercles and the lateral margins of the scutellum yellow; the anterior femora and tibiae in front rufo-testaceous; the tarsi, and the apical joints of the intermediate and posterior pairs, pale testaceous, all being densely covered with pale pubescence; the legs shining and punctured; wings dark fuscous. The second segment of the abdomen with a minute lateral spot at the basal margin; the third, fourth, and fifth segments with an oblong transverse lateral macula, yellow; clothed beneath with pale fulvous pubescence.

*Hab.* Old Calabar.

## 3. *Anthidium apicatum*.

*Female.* Length  $3\frac{1}{2}$  lines.—Black, punctured, with the head and thorax immaculate, abdomen spotted with yellow. The head and thorax closely and strongly punctured; the sides of the face, below the insertion of the antennae, with pale pubescence; the tarsi with pale fulvous pubescence above, and bright fulvous beneath; the scutellum produced over the metathorax; wings subhyaline, the apical margins clouded. Abdomen with the first to fourth segments with a small ovate spot at their extreme lateral margin; the fourth segment has an additional spot within the extreme lateral one; the fifth and sixth segments entirely pale yellow beneath densely clothed with pale fulvous pubescence.

*Hab.* Natal.

4. *Anthidium imitator*.

*Male*. Length 6 lines.—Extremely like *A. diadema* of Europe. The clypeus, the face on each side of it as high as the insertion of the antennæ, the scape beneath, the mandibles, and a minute spot above the eyes, yellow; the tips of the mandibles and a spot at the base of the clypeus black; the face with pale fulvous pubescence. The thorax at the sides and beneath with pale pubescence; the elytræ in front and the tarsi yellow, and covered with bright pale pubescence; wings fusco-hyaline; the outer margin of the tegulæ yellow. Abdomen with the basal segment with a lateral yellow macula; the four following segments with a subquadrate lateral spot, from which a narrow line emanates and expands into a clavate shape a little before the middle of the segment; these, as well as two large subovate maculæ on the sixth segment, and its lateral margins, are yellow; the seventh segment trifurcate; outside the truncation is a stout curved tooth, and the sixth segment has a minute tooth at its apical margin laterally.

*Local*. Northern India.

5. *Anthidium ardens*.

*Male*. Length  $4\frac{1}{4}$  lines.—Black. A broad yellow line on the face on each side of the clypeus, not extending higher than the insertion of the antennæ; the mandibles and four minute spots on the posterior margin of the vertex yellow; the face with pale pubescence; the head and thorax both closely punctured. Two transverse spots on the anterior margin of the mesothorax, two abbreviated narrow spots on its disk, a narrow line over the tegulæ, and an interrupted line on the posterior margin of the scutellum, pale yellow; the anterior and intermediate tarsi pale, and all the tarsi densely covered with pale pubescence; wings subhyaline, the anterior margin of the wings fuscous. The basal margin of the abdomen with four spots, the lateral ones subquadrate, the two inner ones narrow and minute; the second segment has similar spots, but the inner ones are larger and nearly in the middle of the segment; the third, fourth, and fifth segments have a narrow transverse line, which is interrupted in the middle; the lines are deeply emarginate, forming a spot at the extreme lateral margin; the sixth segment has similar maculæ; all are pale yellow; densely clothed beneath with pale pubescence.

Bombay Presidency.

6. *Anthidium rufipes*.

*Male*. Length  $2\frac{1}{2}$  lines.—Black, with the legs and abdomen becoming ferruginous. The clypeus, as high as the antennæ, yellowish; the mandibles and a line behind the eyes, which passes



along the margin of the vertex, pale yellow. Thorax with tubercles and a line on the mesothorax over the tegulæ, and continued along the posterior margin of the scutellum, pale yellow; wings hyaline and iridescent, tegulæ rufo-testaceous; the first joint of the posterior tarsi pale yellow, the tibiæ having a dusky stripe. Abdomen with the first to fifth segments with a transverse pale yellowish-white fascia, the first very widely interrupted, reduced to a lateral spot, the second much less interrupted, the others very slightly so; the apical segment with a heart-shaped macula clothed beneath with pale fulvous pubescence.

*Hab.* Bombay district.

#### 7. *Anthidium japonicum*.

*Female.* Length 6 lines.—Black, closely punctured; the abdomen shining, and spotted with yellow. The face with a little white pubescence at the insertion of the antennæ; two small ovate yellow spots at the posterior margin of the vertex. Thorax with a minute yellow spot on the scutellum laterally; on the sides and beneath there is thin cinereous pubescence; the tarsi with cinereous pubescence above, and with fulvous beneath; the posterior tibiæ with a narrow whitish line on their upper margin; the calcaria pale ferruginous; wings subhyaline, their apex fuscous. Abdomen with the first to fifth segments with an oblong-quadrate macula on each side; the sixth segment immaculate; clothed beneath with pale pubescence.

*Hab.* Yokohama.

#### 8. *Anthidium ordinatum*.

*Female.* Length  $4\frac{1}{2}$ – $5\frac{1}{2}$  lines.—Black; the head and thorax opaque and very closely punctured; abdomen shining, finely punctured, and having four rows of yellowish-white maculæ. The clypeus, with the sides anteriorly and the face on each side as high as the base of the clypeus, as well as the base of the mandibles, yellowish white; the anterior margin of the clypeus with two short blunt teeth. The thorax and legs without maculæ; their pubescence white, except that on the disk of the thorax, which is short and dark brown; wings subhyaline, the nervures black. The abdomen with four longitudinal rows of irregular-shaped whitish spots; the two inner rows pear-shaped, and placed obliquely; clothed beneath with white pubescence.

*Male.* Length 6–7 lines.—Closely resembling the female; but with the clypeus, sides of the face, mandibles, and scape in fine yellowish white; also a narrow interrupted line on the posterior margin of the vertex. Thorax with the pubescence above fulvous, beneath it is white; the outer margin of the tegulæ, a line on the intermediate and anterior tibiæ above, and a spot at the base of

anterior pair yellowish white; wings and abdomen nearly as in the female; the two central rows of spots are ovate in four specimens examined, and the spot on the fifth segment, in one example, united to the lateral spot by a narrow line; the sixth segment has a sharp spine at its lateral angles; the seventh segment is broadly emarginate at its apex, its lateral angles forming blunt angles; in the middle is a longitudinal carina which projects beyond the emargination, thus making the segment tridentate.

*Hab.* Bombay Presidency.

#### 9. *Anthidium lachrymosum*.

*Male.* Length  $3\frac{1}{2}$ –4 lines.—Black, closely punctured, the abdomen shining, and with white pubescent spots. Head as wide as the thorax; the sides of the face with short snow-white pubescence, as well as the cheeks. Thorax with a large patch of white pubescence beneath the wings, and a small one on the mesothorax anteriorly, the latter frequently obliterated; the anterior wings dark fuscous, with a hyaline spot at the apex of the submarginal cells; the posterior wings hyaline, faintly clouded at their apex; the scutellum more strongly punctured than the mesothorax, its posterior margin straight. The first segment of the abdomen with a large patch of white pubescence at the lateral margins, and the four following ones with smaller spots.

*Female.* Closely resembles the female, but has the angles of the apical margins of the third, fourth, and fifth segments produced laterally into short acute teeth; apical segment with three teeth.

*Hab.* Bombay district.

#### 10. *Anthidium multiplicatum*.

*Male.* Length 6 lines.—Head and thorax reddish yellow, with black markings; abdomen black, with yellow fasciæ. Head with two triangular black maculae on the vertex, placed transversely; also a black macula above the insertion of each antenna, extending to the anterior ocellus; the labrum black; the mandibles very broadly dilated, and widened at their apex; the apical margin emarginate, with a black blunt process at the lower angle of the emargination; the upper angle forms a flattened truncated process; the clypeus porrect, rounded at the apex and concave beneath. The mesothorax with three broad longitudinal black stripes, the central one extending from the base to the apex, the lateral ones not running to the anterior margin; wings subhyaline, the anterior margin of the fore wings dark fuscous. The segments of the abdomen with lightly interrupted yellow fasciæ, the first only entire. The insect entirely yellow beneath.

*Hab.* Brazil, St. Paulo.

11. *Anthidium flavomarginatum*.

*Male*. Length 4 lines.—Black; head and thorax closely punctured, semiopaque; abdomen shining, much more finely punctured, and having waved yellow fasciae. The anterior portion of the clypeus, the inner orbits of the eyes, a curved line at the insertion of each antenna, the mandibles, and a narrow line on the posterior margin of the vertex, which runs down to the base of the mandibles, yellow; the scape in front and the base of the flagellum reddish yellow. A narrow yellow line on the anterior margin of the mesothorax, interrupted in the middle, passing over the tegulae, and continued along the hinder margin of the scutellum; the tegulae, the anterior femora in front, and the tibiae and tarsi, ferruginous; the tibiae more or less black behind; wings fusco-hyaline, with a dark stain along the fore margin of the anterior pair. The first segment of the abdomen with a lateral, narrow, waved yellow line in the middle; the second segment with an ovate macula at its lateral margins; the third, fourth, and fifth segments with a narrow fascia near their basal margins, the first narrowly interrupted; the sixth and seventh segments yellow, the latter with a small, deep impression in the middle, close to the apical margin.

*Hab.* Brazil, Petropolis.

12. *Anthidium bicoloratum*.

*Female*. Length  $3\frac{1}{2}$  lines.—Black, and variegated with red and yellow markings. Head with the orbits of the eyes, the posterior margin of the vertex, a spot in front of the anterior ocellus, the scape, and three or four of the basal joints of the flagellum, ferruginous; the head and thorax closely punctured. The scutellum with a lateral spot united to it, the tegulae, and two narrow abbreviated lines on the disk of the mesothorax ferruginous; the anterior legs, the intermediate femora at the apex, the tibiae and tarsi, and the posterior femora at the apex ferruginous; wings fuscous. Abdomen ferruginous at the extreme base; the first to fifth segments with a double row of yellow maculae, those on the three basal segments transverse, those on the fourth and fifth segments ovate; three or four of the basal segments have also a small yellow spot at their extreme lateral margins; clothed beneath with glittering whitish pubescence.

*Hab.* Mendoza.

13. *Anthidium confusum*.

*Male*. Length  $4\frac{1}{4}$  lines.—Black, variegated with ferruginous and yellow. The clypeus, mandibles, and face on each side yellow; the hinder margin of the vertex and the scape ferruginous; the

flagellum wanting]. The mesothorax with an interrupted line anteriorly, which passes over the tegulae and unites with the scutellum, being, as well as the latter, ferruginous; the tegulae and legs ferruginous; wings fusco-hyaline, darkest beyond the submarginal cells; the sides of the thorax with griseous pubescence. The first and second segments of the abdomen ferruginous, the first with a transverse yellow fascia, less distinct in the middle; the second segment with its apical margin black; the following segments are black in the middle and ferruginous laterally; the third segment with two oblong-ovate maculae placed transversely and uniting in the middle; the fourth, fifth, and sixth have similar maculae, but smaller; the apical segment yellow, tridentate, and with a central sharp carina.

*Hab.* Mendoza.

#### 14. *Anthidium elegantulum*.

*Female.* Length  $3\frac{1}{2}$  lines.—Luteous, the abdomen with ferruginous fasciae. Head with a large subquadrate black macula on the vertex enclosing the ocelli, and extending about halfway between the anterior ocellus and the antennae; anteriorly it has a minute angular projection emanating from the middle of its margin; the flagellum, except two or three of the basal joints, fuscous above. The mesothorax and basal margin of the scutellum black; the anterior and lateral margins of the mesothorax yellow; the metathorax black behind; the wings subhyaline, the fore wings dark fuscous at their anterior margin. Abdomen with the basal margin of the segments luteous; the apical margin of the terminal segment black.

*Hab.* Brazil, Santarem.

#### 15. *Anthidium cognatum*.

*Female.* Length 3 lines.—Black, the scutellum orange-yellow. The head and thorax very coarsely punctured; the lower portion of the inner orbits of the eyes, and anterior margin of the clypeus, interrupted in the middle, narrowly yellow. The wings dark fuscous on the anterior margin of the fore pair, the rest subhyaline and iridescent. The abdomen pubescent, giving it a velvety blackness, usually more or less abraded; the fourth and fifth segments narrowly margined with pale yellow: clothed beneath with glittering white pubescence.

*Hab.* Brazil, St. Paulo.

This species has the general aspect of *A. lunulatum*, but is quite distinct, its head and thorax being rugose punctate; its head is smaller in proportion to its thorax, and it is less variegated with yellow. The species are from different localities.

16. *Anthidium flavolineatum*.

*Female*. Length 4 lines.—Black; the thorax margined with yellow, the abdomen with five yellow more or less interrupted fasciæ. The inner orbits of the eyes, the lateral margins of the clypeus, and a short narrow line behind the eyes, yellow. The mesothorax with a narrow yellow line at its lateral margins, which also curves a short distance on its anterior margin; the posterior margin of the scutellum and a spot at its lateral angles yellow; wings fusco-hyaline; the marginal cell and the apex of the wing somewhat darker; the anterior tarsi and the apical joints of the intermediate and posterior pairs pale ferruginous. Abdomen with a widely interrupted fasciæ at the base, the second, third, and fourth segments with fasciæ which are only slightly interrupted, the second being the most so, the fifth with an entire fasciæ, all the fasciæ and the sixth segment yellow; clothed beneath with glittering whitish pubescence.

*Hab.* Mexico, Oajaca.

17. *Anthidium impatiens*.

*Male*. Length  $4\frac{1}{2}$  lines.—Black, punctured, the abdomen with yellow fasciæ, the fasciæ with lateral transverse black markings. The clypeus, the sides of the face, the mandibles, and a minute spot behind the eyes yellow; tips of the mandibles black. The sides of the mesothorax and scutellum bordered with yellow; on the thorax anteriorly, and on the sides of the metathorax, there is a little pale pubescence; wings fusco-hyaline, darkest in the marginal cell and at the apex of the wings; the apical joints of the tarsi ferruginous. Abdomen shining; at the basal margins of the first and second segments, laterally, a slightly curved yellow line, narrowest within; a broad slightly interrupted fasciæ on the third segment; the following segments are yellow, with their apical margins black; the fourth and fifth segments have at their basal margins a small triangular black spot, and the third, fourth, and fifth have laterally a narrow black stripe; the sixth segment is subdentate at its lateral angles; the seventh with a sharp longitudinal central carina, and with an acute angle or tooth laterally.

*Hab.* South Mexico.

18. *Anthidium atriventre*.

*Female*. Length  $5\frac{1}{2}$  lines.—Black; the head, thorax, and apical segments of the abdomen with yellow markings; the abdomen with black pubescence beneath. The clypeus, a broad line on each side of the face, an ovate spot in front of the anterior ocellus, and a narrow line on the margin of the vertex, yellow. The mesothorax bordered laterally with yellow; wings dark fuscous. Ab-

men shining, closely and finely punctured; the third segment with a narrow lateral yellow line, which is slightly curved; the three following segments yellow, with their apical margins black.

*Hab.* Mexico, Orizaba.

#### 19. *Anthidium deceptum*.

*Male.* Length  $5\frac{1}{4}$  lines.—Black; head, thorax, and legs variegated with yellow; abdomen with four rows of ovate yellow spots. The clypeus and sides of the face as high as the antennæ, the mandibles, and a spot above the eyes yellow; the face with white pubescence. Thorax with pale fulvous pubescence above, and with white beneath and on the legs; an oblong spot on each side of the margin of the mesothorax anteriorly, another over the tegulæ, the posterior margin of the scutellum and an ovate spot at its lateral angles, and the tegulæ in front and behind, yellow; the tibiae outside and the tarsi yellow; the tips of the claws black; wings subhyaline. The segments of the abdomen with a large sub-ovate macula at their lateral margins, and each with two smaller spots, the four spots on each segment being placed equidistant; the apical segment immaculate and trispinose; the central spine shortest, and being a continuation of a central carina.

*Hab.* Peru.

### CERATINA, Latr.

#### 1. *Ceratina compacta*.

*Female.* Length 3 lines.—Black; head and thorax closely punctured; abdomen finely so, variegated with yellow. The labrum, clypeus, and the face on each side of it, a narrow line up the inner orbits of the eyes not as high as their summit, two oblique lines above the insertion of the antennæ, a transverse line above the clypeus, the scape in front, and a line behind the eyes, yellow. Thorax with the tubercles, an interrupted line on the collar, a line close to the tegulæ, two short ones on the disk, and the scutellum yellow; the anterior legs and the intermediate and posterior tibiae and tarsi yellow; wings hyaline, the tegulæ rufo-testaceous. The apical margins of the segments of the abdomen with yellow fasciæ, the second and third fasciæ widely interrupted; the fasciæ widen abruptly laterally, the third and fourth are widened both in the middle and at the sides; the sixth segment with a hat-shaped yellow macula.

*Hab.* Philippine Islands.

2. *Ceratina lepida*.

*Male*. Length  $3\frac{3}{4}$  lines.—Black and shining, finely punctured, and variegated with yellow markings. The clypeus, labrum, a transverse angulated spot above the clypeus, two minute oblique ones before the anterior ocellus, a line on the anterior portion of the inner orbits of the eyes, narrowest above, and a broader line behind the eyes, yellow. A narrow line on the prothorax, a minute one over the tegulae, the base of the scutellum, the tubercles, the anterior femora at their apex beneath, the tibiae above, the intermediate pair at their base, and the basal half of the posterior pair, yellow; the claw-joint of the tarsi pale rufo-testaceous; wings hyaline and iridescent. The apical margins of the second, third, and fourth segments of the abdomen with a narrow yellow fascia laterally, narrowest within, the fifth segment with a continuous fascia; the apical segment produced in the middle into a sharp angle or tooth, it is also angulated laterally.

*Hab*. Northern India.

3. *Ceratina sexmaculata*.

*Male*. Length  $3\frac{1}{4}$  lines.—Bright emerald-green, strongly and closely punctured; the clypeus and labrum yellowish white. The anterior femora with a line beneath, the tibiae with a line above, the intermediate tibiae with a spot at their extreme base above, and the posterior pair with nearly half their length above, yellowish white; wings subhyaline. The fourth and fifth segments of the abdomen with two large, ovate, black maculae, the sixth with two smaller ones; its apical margin serrated, with a larger tooth in the middle; the seventh segment produced into an acute point or tooth at its apex.

*Hab*. Hong Kong and Celebes.

Specimens from Celebes only differ in being more strongly punctured. The females resemble the male, but are without the black maculae on the abdomen, and have the apical segment pointed at the apex.

4. *Ceratina perforatrix*.

*Male*. Length  $4\frac{3}{4}$  lines.—Black and shining, the abdomen finely punctured, sparingly variegated with yellow markings. The clypeus with a reversed **L**-shaped macula, a stripe on each side of it on the face, the labrum and mandibles, and a line behind the eyes, yellow; the tips of the mandibles ferruginous. Thorax smooth and shining above, punctured on the sides and beneath; the mesothorax slightly punctured anteriorly; wings subhyaline, the nervures fusco-ferruginous; the legs rufo-piceous, the tarsi palest. The fourth and fifth segments of the abdomen with a yellow fascia

on their apical margins, that on the fourth interrupted in the middle; the sixth segment with a central yellow subovate macula; the seventh truncate at the apex.

*Hab.* Burmah.

#### 5. *Ceratina flavipes*.

*Male.* Length 3 lines.—Black, smooth, shining, very finely punctured; head and abdomen variegated with yellow. The mandibles, labrum, clypeus, a transverse spot above it, and the face on each side of it, as high as the insertion of the antennæ, yellow. The metathorax opaque; wings hyaline and iridescent, the nervures testaceous, the stigma and costal nervure fuscous; the tibiæ and tarsi honey-yellow. Abdomen with the apical margins of the second to fifth segments with narrow yellow fasciæ; the first and second fasciæ widely interrupted, the third much less so, the fourth entire; the seventh segment subdentate in the middle, and oblique on each side.

*Hab.* Hakodaté.

#### 6. *Ceratina unimaculata*.

*Male.* Length  $3\frac{3}{4}$  lines.—Head and thorax green, the abdomen dark blue; strongly punctured. The clypeus with a longitudinal yellowish-white macula, narrowest above; the flagellum of the antennæ, except two or three of the basal joints, obscurely fulvous beneath. The metathorax truncate, the margin of the truncation above acute and slightly raised; the wings hyaline, with their apical margins slightly clouded; the legs dark rufo-piceous beneath; the anterior tibiæ with a pale spot at the base; all the tibiæ and tarsi with glittering pale pubescence. Abdomen with the margins of all the segments constricted; the apical margin of the terminal segment pointed in the middle.

*Female.* Rather smaller than the male; coloured and punctured in the same manner; the terminal segment of the abdomen with the apical margin rounded and subdentate laterally.

*Hab.* Celebes, Macassar.

#### 7. *Ceratina rugifrons*.

*Male.* Length  $3\frac{3}{4}$  lines.—Head and thorax strongly punctured; abdomen closely, but more finely so, and variegated with yellow markings. The face rugose-punctate; the anterior portion of the clypeus, a line on each side of it, widened anteriorly, a transverse line above it, the labrum, and a short narrow line behind the eyes, yellow; the scape in front ferruginous, probably sometimes yellow. The margin of the prothorax, the tubercles united with it, a transverse line on the scutellum, the tibiæ and tarsi, the anterior



femora, except at their base above, and the apex of the intermediate and posterior pairs, yellow; wings hyaline and iridescent; the nervures black, the tegulæ rufo-testaceous. The basal segment of the abdomen with two narrow lines that curve backwards and almost unite in the middle of the segment, the second and third with a line on their apical margins laterally, narrower within, the fourth segment with a longer line, that on the fifth entire, that on the sixth widest in the middle, yellow; the seventh pointed in the middle of the apical margin and tipped with yellow.

*Hab.* Celebes, Macassar.

#### 8. *Ceratina cognata*.

*Male.* Length  $3\frac{1}{2}$  lines.—Black, shining and finely punctured, variegated with yellow. The clypeus, the face on each side of it, a narrow line at the inner orbits of the eyes not reaching their summit, a transverse line above the clypeus, the labrum, and a short narrow line behind the eyes, yellow. The collar of the thorax, the tubercles, scutellum, tibiae, tarsi, and tips of the femora yellow; wings hyaline and iridescent; the nervures rufo-testaceous, the tegulæ pale rufo-testaceous. Abdomen with four spots placed transversely on the basal segment, the second and third segments with a subquadrate spot laterally, each having a short narrow abbreviated line emanating from it along the apical margin of the segments; the fourth segment has similar markings, but the narrower lines almost coalesce in the middle of the segment; the fifth has a continuous fascia, which is widest in the middle; the sixth has a similar fascia, yellow.

*Hab.* Celebes, Macassar.

#### 9. *Ceratina pubescens*.

*Female.* Length  $4\frac{1}{2}$  lines.—Dark bronze-green, the disk of the thorax with a purple tint; the sides of the thorax, the legs, abdomen beneath, the sides, and apical portion above with short hoary pubescence, very dense on the metathorax. Head closely and strongly punctured; the clypeus with a central longitudinal line, a narrow line on the lower portion of the inner orbits of the eyes, and a broader one behind the eyes, yellow. Thorax strongly punctured, the mesothorax with a smooth space on the disk; the base of the metathorax smooth and of a coppery lustre; legs black; wings subhyaline, nervures testaceous; stigma and costal nervure black. Abdomen much narrowed at the base; the basal segment smooth and shining; the second and third segments closely punctured, the three following segments rugose.

*Hab.* Ega and Tunantins.

10. *Ceratina rotundiceps*.

*Female*. Length  $3\frac{1}{2}$  lines.—Bronze-green; head strongly punctured, rotundate, and a little wider than the thorax: a minute white spot on the clypeus. Mesothorax with a large smooth space on the disk; the scutellum shining, sparsely and finely punctured; the margin of the truncation of the metathorax smooth and shining; the sides of the thorax, and also beneath, closely and strongly punctured; legs black; the anterior tibiae dark rufo-piceous; the apical joints of the tarsi rufo-piceous; wings subhyaline, nervures and stigma rufo-piceous, the tegulae with the outer margin rufo-piceous. The basal segment of the abdomen smooth and shining, the second and third closely punctured, the following segments rugose.

*Hab.* Para.

11. *Ceratina viridula*.

*Male*. Length  $3\frac{1}{2}$  lines.—Bright green; the head strongly punctured, thorax less strongly so, the abdomen closely and finely punctured. The anterior margin of the clypeus and a spot on the labrum white. The mesothorax with a smooth shining space on the disk, which has five longitudinal, smooth, impressed lines, the two outer ones abbreviated; the base of the metathorax with longitudinal striae, the truncation closely punctured; legs green, with the apical joint of the tarsi ferruginous; wings subhyaline, the nervures fusco-ferruginous. Abdomen with the four basal segments punctured, the rest rugose; the margin of the seventh segment entire; the basal margins of the second, third, and fourth segments smooth, shining blue.

*Hab.* Brazil, St. Paulo.

12. *Ceratina bicolorata*.

*Female*. Length  $4-4\frac{1}{2}$  lines.—Obscure bronze colour, with a purple tint; the three apical segments of the abdomen of a coppery green. Head and thorax coarsely punctured; the face with a subtriangular spot on each side of the clypeus anteriorly, the clypeus with a minute spot at its anterior margin, and a line behind the eyes, yellow; the clypeus with a deep longitudinal impressed line. The mesothorax with two longitudinal smooth spaces, which unite posteriorly, being widened towards the scutellum; wings subhyaline; the margin of the truncation of the metathorax smooth, the truncation closely punctured; legs black, the posterior pair very pubescent. The basal segment of the abdomen smooth and shining, the two following segments finely punctured, the following segments rugose.

*Hab.* Amazons, Ega.

13. *Ceratina longiceps*.

*Female*. Length 4 lines.—Bronze-green; the head produced before the eyes, as in species of the genus *Halictus*. The head and thorax strongly punctured; the three basal segments of the abdomen closely and finely punctured, the three apical segments rugose. A spot on the clypeus anteriorly, and another at the angles of the face at the lower orbit of the eyes, and a narrow line behind them, yellow. The metathorax and postscutellum closely and finely punctured; wings subhyaline; legs obscure nigro-æneous, the apical joints of the tarsi rufo-testaceous.

*Hab.* Amazons, Ega.

14. *Ceratina cupreiventris*.

*Female*. Length 5 lines.—Head and thorax dark bronze-green; the disk of the mesothorax with a purple tinge; abdomen bright coppery green. Head strongly punctured; a spot at the anterior margin of the clypeus, another at the anterior angles of the face, a minute one on the labrum, and a line behind the eyes, yellow. Thorax strongly punctured; the metathorax with a smooth shining space on the disk, and with five longitudinal impressed lines, the two lateral ones abbreviated; the metathorax very minutely and finely punctured; wings subhyaline, the nervures fusco-ferruginous; legs obscurely rufo-piceous, with the apical joints of the tarsi pale ferruginous. Abdomen bright coppery green, the four basal segments finely punctured, the following rugose.

*Hab.* Amazons, Ega.

15. *Ceratina diligens*.

*Female*. Length 4 lines.—Olive-green, punctured, the abdomen rather more finely so than the head and thorax, the former with yellow maculae. A transverse line on the anterior margin of the clypeus, a minute one on the labrum, two on each side of the face (one opposite the insertion of the antennæ, the second at the interior angle of the face), and a line behind the eyes, yellow; the flagellum fulvous beneath. Two oblong spaces on the disk of the mesothorax smooth and shining; wings subhyaline and iridescent, the nervures dark fuscous, the tegulae rufo-testaceous; tibiae and tarsi ferruginous. Abdomen evenly punctured, with the two apical segments rugose, the apex pointed.

*Hab.* Brazil, Santarem.

16. *Ceratina capitosa*.

*Female*. Length  $4\frac{3}{4}$  lines.—Head wider than the thorax, longer than broad, obtuse anteriorly; the head, mesothorax, and scutellum

purely dark purple, the metathorax and abdomen olive-green. The clypeus with an oblong-ovate yellow macula; the head rather strongly punctured; the flagellum of the antennæ beneath, except two or three of the basal joints, fulvous. The disk of the mesothorax smooth and shining; the sides beneath, the scutellum, and metathorax closely punctured; the margin of the truncation of the metathorax smooth and shining; the legs rufo-piceous, the apical joints of the tarsi palest; wings pale fulvo-hyaline, the nervures and stigma rufo-testaceous. Abdomen closely punctured, the two apical segments rugose.

*Hab.* Mexico, Oajaca.

#### 17. *Ceratina rufipes*.

*Male.* Length 4 lines.—Head and thorax black; base of the metathorax blue; abdomen green; legs ferruginous. The clypeus, a spot on each side of it on the face, the labrum, and base of the mandibles yellow. Head and thorax strongly punctured; abdomen more finely so, with the three apical segments rugose; wings hyaline, the nervures black; the thorax rufo-piceous beneath.

*Hab.* Mexico, Oajaca.

#### 18. *Ceratina strenua*.

*Male.* Length  $2\frac{1}{2}$  lines.—Olive-green, punctured, the head most strongly so. The clypeus and a spot on the labrum white; the flagellum fulvous beneath. Thorax with the tubercles white; the anterior tibiae and tarsi pale ferruginous, as well as the intermediate and posterior tarsi; wings hyaline, the nervures and tegulae rufo-testaceous. The fifth and sixth segments of the abdomen finely rugose; the seventh segment rounded at the apex.

*Hab.* Texas.

### ALLODAPE, St. Farg.

#### 1. *Allodape candida*.

*Male.* Length  $3\frac{1}{2}$  lines.—Black; the thorax and abdomen shining, the latter with pubescent fasciæ. The clypeus with a broad white or yellowish-white longitudinal stripe, which has the anterior angles slightly produced; the flagellum fulvous beneath; the head with griseous pubescence, particularly on the sides of the face and on the cheeks. Thorax pubescent on the sides and beneath; the mesothorax very smooth and shining, with a few fine punctures anteriorly; the scutellum finely punctured; the base of the metathorax opaque; the wings hyaline, the nervures ferruginous; the

posterior tibiæ and tarsi with pale glittering pubescence; the claw-joint of the tarsi ferruginous. Abdomen shining and finely punctured; the three apical segments subrugose; the apical margins of the segments more or less rufo-piceous; the segments with thin fasciæ in the middle of downy-grey pubescence, the basal segment has the pubescence on its apical margin.

*Hab.* Abyssinia.

## 2. *Allodape cordata*.

*Female.* Length  $3\frac{1}{2}$  lines.—Black, smooth, and shining. The clypeus punctured and with a narrow longitudinal line, a line at the inner orbits of the eyes, and a similar one behind them yellowish white. The mesothorax impunctate, or with only a few very fine scattered punctures anteriorly; the scutellum with a transverse broad stripe; wings fusco-hyaline; the posterior tibiæ and tarsi with pale glittering pubescence, the apical joints of the tarsi rufo-testaceous. Abdomen with shallow punctures, not very close on the three basal segments, but confluent on the three apical ones.

*Hab.* Cape of Good Hope.

## 3. *Allodape jucunda*.

*Female.* Length 2 lines.—Head and thorax shining black, abdomen ferruginous, with black fasciæ. The clypeus, labrum, apical half of the mandibles, a narrow line at the lower part of the inner orbits of the eyes, and the scape of the antennæ pale yellowish white; the flagellum fulvous beneath. The margin of the prothorax, the tegulæ, and scutellum pale yellow; the legs pale ferruginous; wings hyaline and iridescent, the nervures pale testaceous, the stigma fuscous. Abdomen with a black fascia at the base of the second, third, and fourth segments, the fifth with a similar fascia at its apical margin; the two apical segments with short pale, glittering pubescence.

*Hab.* Zulu Land.

## 4. *Allodape parvula*.

*Female.* Length  $2\frac{1}{3}$  lines.—Black, shining, and impunctate. The clypeus yellowish white; the labrum and mandibles rufo-testaceous, the apical joints of the flagellum fulvous beneath. The tubercle, tegulæ, and base of the wings pale rufo-testaceous; wings hyaline and iridescent, the nervures testaceous, the stigma fuscous; legs obscurely rufo-piceous, the apical joints of the tarsi rufo-testaceous, the posterior tibiæ and tarsi with pale glittering pubescence. Abdomen with the apical margins of the segments narrowly pale rufo-testaceous above and beneath.

*Hab.* Bombay district.

**NOMADA, Fabr.****1. *Nomada subpetiolata*.**

*Male*. Length 3 lines.—Ferruginous, with a black longitudinal suture on the mesothorax; the pectus with two black spots, and the intermediate and posterior femora blackish at their base beneath; the metathorax with white short downy pubescence, more or less black at the base; wings hyaline and narrowly bordered with fuscous at their apex. Abdomen subpetiolate, ferruginous, with a black fascia on the apical margin of the first segment, and a black spot on each side of it; the second segment with a broad black fascia at its apical margin, widest in the middle, the ferruginous portion is bordered with yellow at its base; the third segment is blackish, and the two following have each two large slow maculae which unite in the middle of the segment.

*Hab.* Bombay district.

**2. *Nomada infrequens*.**

*Male*. Length  $3\frac{1}{4}$  lines.—Yellow, with black and ferruginous markings. The vertex and a space above the clypeus black; the flagellum of the antennae pale ferruginous. The mesothorax black, narrowly bordered with yellow, and, as well as the scutellum, coarsely punctured; it has also two narrow indistinct ferruginous lines on the disk: the scutellum slightly elevated and produced backwards, projecting over the base of the metathorax; the postscutellum and the enclosed space beneath it ferruginous; the pectus with a curved dark fusco-ferruginous stain; the legs pale ferruginous, with the posterior coxae yellow beneath; wings fusco-hyaline. Abdomen with the first segment dark ferruginous, with a narrow yellow margin; the second is similarly coloured, but lighter; the following segments are black at the base, and with yellow apical margins.

*Hab.* Brazil, St. Paulo.

**3. *Nomada nigrocincta*.**

*Male*. Length 4 lines.—Ferruginous, with black markings, the abdomen with black fasciae on the apical margins of the segments, the base of the first segment also black. Two black spots on the clypeus, and the ocelli enclosed in a black macula. The mesothorax with a black central groove; the metathorax black, with white pubescence laterally, and having two narrow ferruginous lines; the femora black at their base beneath; wings subhyaline, with a clear hyaline spot beyond the submarginal cells; the nervures ferruginous.

*Hab.* Arctic America.

#### 4. *Nomada intercepta*.

*Male*. Length 5 lines.—Black. The clypeus, the face on each side of it, a line curving beneath the eyes, the mandibles, labrum, and the scape of the antennæ in front, bright yellow; the flagellum fulvous beneath. The margin of the prothorax, the tegulæ, tubercles, and a spot beneath them, two spots on the scutellum, a line on the postscutellum, two spots on the metathorax, and the legs yellow; the coxæ and trochanters behind, and the femora and tibia within, black; wings hyaline, the nervures ferruginous. Abdomen with the base of the first and second segments black; the apical margins of the following segments narrowly rufo-fuscous.

*Hab.* Vancouver's Island.

This insect has a small elevated carina between the antennæ; it is probably a sexual distinction.

#### 5. *Nomada volatilis*.

*Male*. Length 4–4 $\frac{3}{4}$  lines.—Head and thorax black, with yellow and ferruginous markings; abdomen ferruginous, with yellow markings. The clypeus, a line at the lower portion of the inner orbits of the eyes, the labrum and mandibles yellow; the antennæ fulvous beneath; the eyes with a minute ferruginous spot above. A narrow line on the prothorax, the scutellum, tubercles, tegulæ and legs ferruginous; the intermediate and posterior femora black at their base beneath; wings hyaline, with their apical margin fuscous, the nervures ferruginous. Abdomen black at the base with an interrupted fascia in the middle of the first segment, and an interrupted fascia at the basal margins of the following segments yellow; beneath, the apical margins of the segments are fuscous ferruginous.

*Hab.* Canada.

#### 6. *Nomada albofasciata*.

*Male*. Length 3 lines.—Head and thorax black, abdomen dark obscure ferruginous. The clypeus, labrum, and mandibles white; the flagellum fulvous beneath, the front with thin white pubescence. Thorax with thin white pubescence; wings hyaline and iridescent, the tegulæ and nervures ferruginous; the anterior legs the intermediate and posterior tibiae and tarsi ferruginous, all more or less black behind except the tarsi. The first segment of the abdomen with a narrow white interrupted fascia in the middle; the second with a broad white fascia, attenuated in the middle; its basal margin; the abdomen thinly sprinkled with white pubescence towards the apex.

*Hab.* Canada.

7. *Nomada montezumia*.

*♂*. Length 4 lines.—Black, with yellow markings. The face with a yellow oblong spot at the inner orbit of the eyes anteriorly; the labrum covered with white pubescence as well as the lower part of the cheeks; the scape and two or three of the basal joints of the flagellum ferruginous beneath. The mesothorax smooth, shining, and impunctate, with a central impressed longitudinal line and a short one on each side near the tegulæ; the margin of the prothorax, the hinder margin of the scutellum, and the posterior margin of the scutellum yellow; wings hyaline, and with the anterior margin of the fore wings dark fuscous; the legs and entire insect pubescent beneath. Abdomen with a transverse yellow fascia in the middle of the first and second segments, that on the latter widest; the fourth and fifth with their basal margins yellow, the latter broadly so.

*♀*. Rather smaller than the female, but closely resembles it: differs in having the clypeus and a spot above it, the labrum, the mandibles, yellow, in the mesothorax being punctured, and in the legs being more or less ferruginous.

*Loc.* Mexico, Orizaba.

## AMMOBATES, Latr.

*Ammobates rufitarsis*.

*♂*. Length  $4\frac{3}{4}$  lines.—Head and thorax black; abdomen ferruginous, with the extreme base and apex black. The face clothed with white pubescence, as are also the labrum and cheeks, the latter thinly so. The metathorax, the sides, and beneath with white pubescence; the tarsi and posterior tibiæ ferruginous, the latter externally set with short serrations; wings subhyaline, slightly clouded at their apex; the nervures dark rufo-fuscous. Abdomen slightly pubescent at its base, very finely and closely punctured; the fourth and fifth segments with white pubescent marginal fasciæ.

*Loc.* Siberia, Angara.

## EPEOLUS, Latr.

1. *Epeolus natalensis*.

*♂*. Length 4 lines.—Black, punctured, variegated with white pubescence. The front, below the ocelli, with dense white pubescence; the clypeus anteriorly naked, its margin rounded; the mandibles ferruginous towards the apex. The mesothorax and scutellum coarsely punctured; the margin of the prothorax and the space beneath the wings covered with white pubescence;



the tibiæ and tarsi with white pubescence outside; wings fuscous hyaline, with hyaline spots beyond the submarginal cells. The apical margins of the first, second, and third segments of the abdomen with broad pubescent lateral fasciæ, which are continued to the outer margins; the fourth and sixth segments with interrupted fasciæ; the fifth segment covered with brown pubescence; the abdomen shining and finely punctured.

*Hab.* Port Natal.

## 2. *Epeolus fervidus*.

*Female.* Length  $3\frac{3}{4}$  lines.—Black, variegated with white pubescent markings. The front, below the ocelli, with silvery white pubescence; the anterior margin of the clypeus subtruncate; the tips of the mandibles ferruginous. The mesothorax and scutellum very closely punctured; a line on each side of the collar, and tubercles, two lines on the mesothorax anteriorly, and another passing over the tegulæ, of white pubescence; a large patch on the sides, before the wings, and the coxæ outside with white pubescence; a little white pubescence at the sides of the metathorax; wings hyaline, with a broad fuscous border at their apex. The first segment of the abdomen with white pubescence at its external base, curving round at the sides and continued a short distance to the apical margin of the segment; the following segments with white pubescence on their apical margins laterally; the second, third, and fourth segments beneath have white marginal fasciæ.

*Hab.* Bombay district.

## 3. *Epeolus intrepidus*.

*Male.* Length  $5\frac{1}{4}$  lines.—Black, with white pubescent markings; wings with brown stains; tibiæ and tarsi ferruginous. The front before the antennæ, with white pubescence; on each side it has a golden lustre; the labrum, mandibles, scape of the antennæ, and basal joint of the flagellum ferruginous. The thorax with a line on the margin of the prothorax, the margins of the tubercles, the sides of the metathorax, the intermediate and posterior coxæ, and trochanters beneath, with white pubescence; the tegulæ and nervures of the wings ferruginous; the marginal, submarginal, first and second discoidal cells of a brown colour, mottled with one or three hyaline spots; the tibiæ, tarsi, and apical half of the femora ferruginous. Abdomen with a band of white pubescence on the apical margin of the first segment, interrupted in the middle; the white band recurves laterally towards the middle of the segment; the second, third, and fourth segments with white pubescent marginal fasciæ, the first slightly interrupted; beneath the apical segments are fringed with bright rufo-fulvous pubescence.

*Hab.* Mexico.

4. *Epeolus flavofasciatus*.

*Male*. Length  $4\frac{1}{2}$  lines.—Black; the abdomen with yellow pubescent fasciæ. The clypeus with silvery, and the sides of the face with golden, pubescence; the anterior margin of the clypeus truncate; the mandibles, scape, and basal joint of the flagellum of the antennæ ferruginous. The margin of the prothorax, tubercles, and a spot beneath them, two longitudinal stripes on the mesothorax anteriorly, a line from the tegulæ and along the basal margin of the scutellum, and another curved line passing from the posterior wings down the truncation of the metathorax, of pale yellow pubescence; wings light brown, with a hyaline space beyond the submarginal cells, the nervures and tegulæ ferruginous; the legs ferruginous, with the coxæ and femora more or less blackish above; the pectus and posterior coxæ beneath with silvery-white pubescence. All the apical margins of the abdominal segments with broad pubescent yellow fasciæ, that on the first segment is continued up the sides; the fifth segment has the fascia interrupted, and has a silvery spot on its apical margin.

*Female*. Rather smaller than the female, and has the antennæ entirely black; otherwise marked as in the other sex.

*Hab.* Mexico, Oajaca.

5. *Epeolus nigriceps*.

*Male*. Length  $6\frac{3}{4}$ – $7\frac{1}{2}$  lines.—Black; the pubescent markings yellowish white. Head with a little black pubescence on the front. The margin of the prothorax and a space at the side enclosing the tubercles, the margins of the mesothorax narrowly, and a line passing beneath the scutellum to the insertion of the posterior wings, of yellowish-white pubescence; a pale spot at the base and apex of the posterior coxæ; a spot at the apex of the femora above, and the tibiæ and tarsi, usually with more or less of pale pubescence; wings light fuscous, the nervures black. The basal segment of the abdomen with pale pubescence, divided in the middle by a quadrate black space, which widens slightly towards the posterior margin of the segment, then abruptly terminates, a narrow black line also runs to the margin; the three following segments with pale pubescent fasciæ on their apical margins, the fascia on the first of these is continued along the lateral margins of the segment; beneath black.

*Hab.* California and Texas.

6. *Epeolus vagans*.

*Male*. Length 5 lines.—Black, with white pubescent markings, the legs ferruginous. The clypeus and sides of the face, as well as the labrum, with white pubescence. The margins of the meso-

thorax and sides of the metathorax with white pubescence; the legs mottled with white; wings hyaline, with their apex beyond the submarginal cells fuscous; a darker fuscous stain beyond the marginal cell. The first segment of the abdomen with a slightly interrupted fascia at its base; the second segment with a continuous fascia, slightly attenuated in the middle, at its basal margin; at its apical margin laterally, and on the following segment also, there is a minute oblong spot; the fourth and fifth segments with an oblique white line on each side, the fifth segment with a white spot in the middle of its apical margin.

*Hab.* Amazons, Ega.

#### 7. *Epeolus albifrons*.

*Female.* Length 4 lines.—Black; the face clothed with silvery white pubescence. The antennæ obscurely rufo-piceous beneath, the scape with white pubescence at the apex; the mandibles ferruginous. The mesothorax and scutellum closely punctured; the pectus, coxæ, and posterior femora with a changeable glittering white pile; wings subhyaline, iridescent, and with a brown cloud on the anterior margin of the fore wings; the legs rufo-piceous. Abdomen dark blackish brown; the second to fourth segments beneath with short silvery white pubescence, and the second, third, and fourth segments above with narrow transverse lines of white pubescence; the apical segment white at the sides.

*Hab.* Para.

### CÆLIOXYS, Latr.

#### 1. *Cælioxys clypeata*.

*Female.* Length 5 lines.—Black, the abdomen shining; the clypeus produced, its anterior margin notched and forming a bilobed apex, the lobes obscurely ferruginous. The sides of the face with pale pubescence; the eyes pubescent. The thorax strongly punctured, the posterior margin of the scutellum broadly angular, having a central carina and a lateral short stout tooth; wings subhyaline becoming gradually darker fuscous to the apex; legs ferruginous. Abdomen obscurely ferruginous beneath, smooth, shining, and finely punctured above; the apex acute; the ventral apical plate longer than the upper one, very slender and acute at the apex.

*Hab.* Tunantins, on the Amazons.

#### 2. *Cælioxys ignava*.

*Female.* Length 5 lines.—Black; head and thorax strongly punctured, abdomen finely so; legs and abdomen beneath ferruginous. The face at the sides and a line behind the eyes of white pubescence.

nee; the mandibles, except their base, ferruginous. The scutellum produced in the middle of its posterior margin into a short tooth, also a longer tooth at its lateral margins; the margin of the prothorax, a spot behind the tegulæ, and a line at the base of the scutellum with white pubescence; wings subhyaline, with a fuscous cloud at their apex. Abdomen shining, and gradually tapering to the apex, which is lanceolate; the ventral apical plate a little longer than the upper one, tapering to a point, and slightly notched at the sides near the apex, which is small and lanceolate.

*Hab.* Ega.

### 3. *Cælioxys agilis*.

*Male.* Length  $3\frac{1}{2}$  lines.—Black. The front, as high as the anterior ocellus, densely clothed with short pale golden-coloured pubescence; a line of white pubescence behind the eyes; the vertex and thorax above strongly punctured; the posterior margin of the scutellum slightly rounded, with a stout, short, punctured tooth at its lateral angles; wings subhyaline, becoming gradually darker to the apex; legs ferruginous, and with white pile above. Abdomen shining, finely and sparingly punctured; the apical margins of the segments impunctate; the apical segment deeply grooved in the middle, the lateral processes bidentate, there is also a short acute tooth near the base of the segment laterally; the lateral margins of the segments with white pubescent fasciæ; beneath, the fasciæ are continuous and broader than those above.

*Hab.* Brazil, St. Paulo.

### 4. *Cælioxys vigilans*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black, shining, and finely punctured; legs ferruginous, the pubescent fasciæ and markings snow-white. The sides of the face, the cheeks, and a fringe on the anterior margin of the clypeus pubescent. The margin of the prothorax, a narrow line on the mesothorax on each side anteriorly, and running down to the anterior coxæ, another line running from the wings to the intermediate coxæ, two spots at the base of the scutellum, and another behind the tegulæ, of white pubescence; the lateral margins of the metathorax fringed with the same; the legs have white pile beneath; wings hyaline at their base, a fuscous stain in the marginal cell and at the apical margin of the wings; the scutellum with a short stout tooth at its lateral angles, its hinder margin broadly angular, acute in the middle. Abdomen very finely punctured, with a narrow fascia on the basal margin of the first segment, and also on the apical margin of the other segments, of white pile, the latter widen at the sides and are continuous beneath; the ventral valve of the apical segment is a little longer than the upper one; rather wide, notched on each side near the apex, and terminating in a lanceolate process.

*Male.* Closely resembles the female; but the abdomen has on the third, fourth, and fifth segments, in addition to the white fascia on each side near the base of the segments, a short white line of pubescence; the terminal segment has at the apex four apical spines, and also a short one laterally.

*Hab.* St. Domingo.

##### 5. *Cœlixys argentipes.*

*Female.* Length 5 lines.—Black; the head and thorax strongly and closely punctured, abdomen shining and finely punctured, wings fuscous, their base hyaline. The face with silvery-white pubescence at the sides, the cheeks with white pubescence. Thorax with the sides, beneath, and the legs with short, bright silvery-white pubescence; the legs obscurely rufo-piceous; the spine on each side of the scutellum very stout. Abdomen with a narrow white fascia on the apical margins of all the segments; the apical segment very finely punctured, and with a longitudinal carina; the apical ventral plate broad and spoon-shaped, with a minute lanceolate appendage at the apex.

*Hab.* Sierra Leone.

##### 6. *Cœlixys penetratrix.*

*Female.* Length  $4\frac{1}{2}$  lines.—Black; head and thorax strongly punctured, abdomen shining and finely punctured, legs ferruginous. The front with white pubescence; the mandibles ferruginous. The thorax with white pubescence on the sides and beneath; the legs with a glittering white pile; the wings hyaline at the base, thence becoming gradually fuscous to their apex, the nervures black, the tegulae rufo-piceous. Abdomen short and conical, the segments with narrow white pubescent fasciæ; the apical segment rather short, and with a central longitudinal carina; the lower valve broad and spoon-shaped, with a minute lanceolate appendage at the apex.

*Hab.* Natal.

##### 7. *Cœlixys minuta.*

*Female.* Length  $3\frac{3}{4}$  lines.—Black; head and thorax strongly punctured, abdomen finely so, and tapering from the base to a fine point at the apex. The front densely covered with short white pubescence; the eyes pubescent; the posterior margin of the scutellum rounded, having two small patches of white pubescence at the base, and a short tooth at its lateral angles; legs obscurely ferruginous; wings hyaline at their base, and slightly fuscous at their apex; the nervures and tegulae obscure ferruginous. Abdomen shining; the basal margin of the first segment with a row

narrow fascia, its apical margin with a rather wider interrupted one, and the following segments with uninterrupted fasciae of white pubescence; the apical ventral valve longer than the upper valve, and tapering to a point.

*Hab.* Bombay district.

### CROCISA, Jurine.

#### 1. *Crocisa elegans*.

*Female.* Length  $4\frac{3}{4}$  lines.—Black, variegated with blue pubescent markings. The clypeus produced; the front covered with blue pubescence, the cheeks also blue. Thorax with three spots in front, two on the disk, a narrow line over each tegula, which unites with a spot placed in a line with the spots on the disk, of blue pile; the scutellum deeply notched behind, and with an ovate blue spot on each side of the notch. The sides of the basal segment of the abdomen with a large blue pubescent spot that is deeply emarginate within, the rest of the segments with an oblong spot on each side; the tibiae and basal joint of the tarsi blue outside; beneath, the segments have an oblique blue line, these are frequently more or less obliterated.

*Hab.* Bombay, Sumatra, Borneo.

This species is very distinct from *C. nitidula*; its head is more elongate, the clypeus being produced; the spots on the scutellum are frequently obliterated.

#### 2. *Crocisa lugubris*.

*Female.* Length 7 lines.—Black, and covered with very short black pubescence, opaque, and variegated with snow-white spots; the front with white pubescence, also a patch behind the eyes at their summit. Thorax with three subovate spots anteriorly, and four small ovate ones on the mesothorax, placed quadrately, two on each tegula, one beneath each, and a longitudinal line beneath it. of white pubescence; the anterior tibiae and basal joint of the tarsi outside, the intermediate and posterior tibiae at their base, and the basal joint of the tarsi outside, with white pubescence; wings dark fuscous, the hinder pair palest, with violet iridescence; two or three small hyaline spots beyond the submarginal cells. The first, second, and third segments of the abdomen with four ovate, white pubescent spots at about equal distances from one another, the two inner spots much smaller than the lateral ones; the fourth and fifth segments have each two small white spots; beneath, the second, third, and fourth segments each with two ovate white spots.

*Hab.* Australia.

3. *Crocisa quinquefasciata*.

*Female*. Length 5 lines.—Black, decorated with spots and markings of white pubescence; the abdomen with fine narrow fasciæ of white pubescence, which are slightly interrupted in the middle. The head with white pubescence. The prothorax, three spots on the mesothorax anteriorly, two posteriorly, a narrow line over the tegulæ, the sides of the metathorax, and a large patch beneath the wings, of white pubescence; the legs have a short white pubescence; wings fuscous, with hyaline spots in the marginal and submarginal cells; the hinder wings hyaline at their base; the scutellum produced over the base of the abdomen, its posterior margin deeply notched. The fasciæ on the abdomen recurved up the lateral margins.

*Hab.* Madagascar.

**MELISSA**, Smith.1. *Melissa insignis*.

*Female*. Length 8 lines.—Deep blue, with fusco-hyaline wings, the nervures black, tegulæ blue. The face with a little white pubescence on the sides opposite the insertion of the antennæ, a fringe of the same on the posterior margin of the vertex; that on the labrum and cheeks is black. On the front of the thorax, on the metathorax, and beneath, the pubescence is black, as is also that on the legs; the scutellum bituberculate, the tubercles very prominent; the thorax and legs in certain lights with a purple lustre. Abdomen with a green and violet lustre; the apical segment with light brown pubescence above; beneath purple; the third, fourth, and fifth segments with a small triangular white pubescent spot at their margins laterally.

*Male*. The same length as the female.—Blue, with green reflections. The clypeus, a spot on the sides of the face, opposite the insertion of the antennæ, the margin of the vertex, the thorax in front, the metathorax, and the sides with bright yellow pubescence; the disk of the mesothorax and the tegulæ vivid green; wings as in the female; the legs black, with tints of blue and purple; the posterior tibiæ with a tuft of black pubescence at their apex beneath. The first and second segments of the abdomen with a small spot of yellow pubescence on their apical margins laterally; beneath, the third and fourth segments with an oblong snow-white spot laterally.

*Hab.* S. Mexico, Orizaba.

**OSIRIS, Smith.****1. Osiris tarsatus.**

*Female.* Length 4 lines.—Pale ferruginous, smooth and shining. The head and disk of the thorax with a few shallow punctures; the clypeus convex, paler than the rest of the head, with scattered distinct punctures; the ocelli black. The scutellum and meta-thorax very smooth and shining; wings flavo-hyaline, iridescent, with the nervures pale ferruginous; the basal joint of the posterior tarsi quite as broad as the tibiae, and very pubescent. Abdomen broadest at the base, and tapering to a point at the apex, which is pubescent.

*Hab.* Tunantins.

This species is very like *O. pallidus* in general aspect; but the form of the abdomen and of the basal joint of the posterior tarsi distinguish it from that species.

**EUCERA, Scop.****1. Eucera terminalis.**

*Female.* Length 7 lines.—Black. The face and vertex with black pubescence, that on the labrum pale fulvous. The thorax clothed above with ochraceous pubescence, on the sides and beneath it is paler; the legs with fulvous pubescence, the apical joints of the tarsi ferruginous; wings hyaline, faintly clouded at the apex; nervures dark ferruginous. Abdomen with pale ochraceous pubescence at the base; on the second and two following segments the pubescence is of the same colour, but thin and short; on the fifth it is black; on the terminal segment it is obscure ferruginous at the sides.

*Male.* The clypeus bright yellow, the labrum with yellow pubescence; the vertex and sides of the face with black, and the cheeks with long whitish pubescence. The thorax and legs clothed as in the female. The two basal segments of the abdomen with pale fulvous pubescence, the rest with black; the margins of the segments laterally beneath with long pale pubescence.

*Hab.* South of France.

**2. Eucera decepatrix.**

*Female.* Length 6 lines.—Black. The clypeus bright yellow; the face and vertex with pale fulvous pubescence, the cheeks with white:



the antennæ two thirds of the length of the body. The thorax with fulvous pubescence above; the legs with the same; the tarsi ferruginous; the wings hyaline, the nervures ferruginous. The two basal segments of the abdomen with fulvous, and the rest with black pubescence.

*Hab.* Italy.

### 3. *Eucera rufipes*.

*Female.* Length 6 lines.—Black; the face with griseous pubescence, that on the cheeks white; the clypeus slightly produced and flat, its anterior margin truncate; the flagellum rufo-testaceous beneath. The thorax clothed above with pale fulvous pubescence; on the legs, which are ferruginous, it is fulvous; wings hyaline, slightly clouded at their apex; the nervures and tegulae ferruginous. The basal segment of the abdomen with thin griseous pubescence, the second, third, and fourth segments with broad white fasciae, that on the second segment interrupted: the fascia on the fifth segment is fulvous in the middle; the sixth segment with ferruginous pubescence at the sides, beneath obscurely ferruginous.

*Hab.* Polish Ukrain.

### 4. *Eucera nigrifrons*.

*Female.* Length 6 lines.—Black. The head with black pubescence, that on the labrum fusco-ferruginous. Thorax clothed above with cinereous, and beneath with dark fuscous, nearly black, pubescence; the legs dark rufo-piceous, the apical joints of the tarsi ferruginous; the posterior tarsi ferruginous, the tibiae and tarsi densely clothed with bright fulvous pubescence; wings hyaline, the nervures and tegulae dark ferruginous. The basal segment of the abdomen with thin pale pubescence; the second, third, and fourth segment with a patch of white pubescence on the apical margins laterally, the fifth and sixth segments margined with fulvous pubescence beneath, the margins of the segments rufo-piceous.

*Hab.* Dalmatia.

### 5. *Eucera velutina*.

*Male.* Length  $4\frac{1}{2}$ –6 lines.—Black, densely clothed with pale testaceous pubescence, on the labrum and cheeks it is white; the clypeus yellowish white. The pubescence on the thorax beneath is white on the legs very pale fulvous; the apical joints of the tarsi pale ferruginous; wings hyaline. The abdomen very pubescent; the apical margins of the fourth and fifth segments with short pubescent fasciae, nearly white.

*Hab.* Syria, Magdala.

**TETRALONIA, Spin.****1. Tetralonia reversa.**

*Note.* Length 6 lines.—Black, the abdomen shining, the apical and ventral segments pale ferruginous. The head shining, the clypeus punctured and with short glittering white hairs; the labrum with pale pubescence. The thorax, as well as the anterior and intermediate legs, with black pubescence; the posterior legs with bright fulvous pubescence; the apical segments of the abdomen with fulvous pubescence; wings subhyaline, the nervures black.

*Hab.* Brazil, Tejuca.

**2. Tetralonia flagellicornis.**

*Note.* Length  $4\frac{1}{2}$  lines.—Black, the thorax with fulvous pubescence above; antennae longer than the body, the joints subarcuate. The anterior margin of the clypeus broadly yellow, also a yellow spot at the base of the mandibles; a little thin pale pubescence on the face, that on the cheeks white. The pubescence on the thorax beneath and on the legs white; the two apical joints of the tarsi ferruginous; wings hyaline and iridescent, faintly clouded at their apex, the nervures black. Abdomen with a little pale fulvous pubescence at the base, and a narrow white pubescent fascia on the apical margins of the second to fourth segments, that on the two apical ones dark fuscous.

*Hab.* Mexico, Oajaca.

**3. Tetralonia gyrosa.**

*Note.* Length 6 lines.—Black, with the four apical joints of the tarsi ferruginous; the clypeus and labrum yellow, the former with the base black, the black portion with a yellow notch in the middle; the mandibles reddish yellow at their apex. The face with a little pale pubescence, that on the vertex fuscous, on the cheeks and thorax beneath it is white; the pubescence on the thorax above is a mixture of pale yellowish brown and dark fuscous; the wings flavo-hyaline, the nervures pale ferruginous. Abdomen shining, with pale yellowish-brown pubescence at the base; at the base of the second segment laterally a little patch of pale tomentum; the third, fourth, and fifth segments with a narrow fascia of thin, short, white pubescence a little before their apical margin; the segments beneath fringed with white pubescence.

*Hab.* Ega, on the Amazons.

4. *Tetralonia melectoides*.

*Male*. Length 7 lines.—Black, shining; abdomen with white spot at the apex. The clypeus yellow, the mandibles ferruginous before the apex; the face with a thin white pubescence, that on the cheeks more dense and white; the antennæ obscurely fulvous beneath. The mesothorax and scutellum punctured, the former with a little pale pubescence anteriorly; on the metathorax it is whitish; wings hyaline, the nervures blackish brown; the intermediate and posterior legs with black pubescence above, the tarsi and tibiæ of the former with a mixture of snow-white, the posterior tibiæ at their apex and the tarsi with white pubescence. Abdomen nigro-æneous, finely punctured, most strongly so at the base; the apical margins of the third, fourth, and fifth segment laterally with a short marginal fascia of white pubescence, shorter on the third segment.

*Hab*. Villa Nova, on the Amazon.

5. *Tetralonia fervens*.

*Female*. Length 6 lines.—Black, with the antennæ, except the three basal joints, bright red. The face, labrum, and cheeks with white pubescence; the clypeus closely punctured, truncate, and having anteriorly a short carina in the middle. Thorax densely clothed above with fulvous pubescence; wings subhyaline, the nervures dark ferruginous, the tegulæ pale rufo-testaceous; the legs obscurely rufo-piceous beneath, the posterior legs with black pubescence; the apical joints of the tarsi ferruginous. Abdomen shining; the base of the first segment with fulvous pubescence; the base of the second segment laterally with a little white tomentum; the third, fourth, and fifth segments have in the middle of the segments laterally a narrow short fascia of white pubescence; the fifth and sixth segments with black pubescence, the latter with a central angular naked space.

*Male*. Rather smaller than the female, which it closely resembles but has the clypeus and labrum yellow, the pubescence on the legs entirely pale, and the fasciæ on the abdomen longer, that on the third and fourth segments being only slightly interrupted.

*Hab*. Mendoza and Santiago.

6. *Tetralonia decorata*.

*Female*. Length  $5\frac{1}{2}$  lines.—Head and thorax black, legs and abdomen pale ferruginous. The anterior margin of the clypeus, the labrum and mandibles, pale yellowish-white, the latter ferruginous at their apex; the antennæ, except the three basal joints, rufo-fulvous, fuscous above. The thorax clothed with pale fulvous pubescence; wings flavo-hyaline, the nervures ferruginous, the

to rufo-testaceous; the legs with fulvous pubescence; the scopa on the posterior tibiae with a few fuscous hairs at the base above. Abdomen entirely pale ferruginous, palest beneath.

*♂.* Very closely resembles the female, but has some thin white hairs on the apical segments of the abdomen.

*Hab.* Ega, on the Amazons.

### MELISSODES, Latr.

#### 1. *Melissodes obscura*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black. The face with pale pubescence, white on each side of the clypeus, and yellowish above the insertion of the antennæ; on the posterior margin of the vertex it is black, and on the labrum fulvous. Mesothorax with a tuft of black pubescence on each side anteriorly; the sides and the metathorax with pale yellowish-white pubescence, and a little pale tomentum at the margin of the tegulæ; wings subhyaline, their apical margin clouded and brightly iridescent, the nervures blackish brown; legs dark rufo-piceous; the intermediate and posterior legs with black pubescence; the apical joint of the tarsi ferruginous. Abdomen with a little pale pubescence at the base; the second segment has a narrow line of white tomentum on each side at its apical margin; the fourth segment with two angular spots of fulvous pubescence, and the two following segments covered with the same; beneath rufo-piceous.

*Hab.* Brazil, St. Paulo.

#### 2. *Melissodes rubricata*.

*Female.* Length 6 lines.—Head and thorax black; legs rufo-piceous beneath; abdomen bright chestnut-red. The face with short griseous pubescence; the clypeus with an abbreviated central carina, the anterior margin truncate; the labrum obscurely ferruginous. Thorax densely clothed above with fulvous pubescence, beneath this fuscous; wings slightly fulvo-hyaline, darkest towards the apex; the nervures rufo-fuscous, tegulæ rufo-testaceous; the legs with black pubescence, that on the posterior tibiae outside with a mixture of pale hairs. A little pale pubescence at the base of the abdomen, which towards the apex becomes rufo-fuscous.

*Hab.* Mexico, Oajaca.

#### 3. *Melissodes pubescens*.

*♂.* Length 4 lines.—Black, and densely clothed with pale fulvous pubescence. The clypeus, labrum, and mandibles yellowish

white; the pubescence on the face dense and nearly white; the flagellum beneath fulvous. The thorax with whitish pubescence beneath; the tibiæ and tarsi ferruginous, the claws black; wings hyaline and iridescent, the nervures ferruginous, the tegulæ rufo-testaceous. Abdomen densely clothed with short pale fulvous pubescence above, beneath rufo-piceous, with the margins of the segments pale.

*Hab.* Villa Nova, on the Amazon.

#### 4. *Melissodes californica*.

*Female.* Length 8 lines.—Black; the thorax with fulvous pubescence, the abdomen with pale abdominal fasciæ. The face with pale fulvous pubescence, that on the cheeks nearly white; the mandibles pale ferruginous in the middle. The thorax with bright fulvous pubescence above, that beneath paler; on the legs it is fulvous, that on the posterior tibiæ and first joint of the tarsi being long and dense and fulvo-ferruginous within; the apical joints of the tarsi ferruginous, the claws black; wings subhyaline, the nervures dark ferruginous. Abdomen with short black pubescence, that on the two apical segments longer and sooty black; the basal segment with pale fulvous pubescence, the three following segments with pale pubescent fasciæ a little before their apical margins; the second segment has also a fascia at its basal margin.

*Male.* A little shorter than the female, which it strongly resembles but differs in having the clypeus, labrum, and mandibles paler yellow, and also in being of narrower form.

*Hab.* California.

#### 5. *Melissodes assimilis*.

*Female.* Length 6 lines.—Black; the thorax and posterior tibia and basal joint of the tarsi with fulvous pubescence. The flagellum of the antennæ, except the two basal joints, fulvous beneath; the mandibles ferruginous a little before the apex; the face and cheeks with white pubescence. Thorax with dense fulvous pubescence above; on the disk of the mesothorax and scutellum it is black. Wings subhyaline, slightly clouded and iridescent; nervures brown, tegulæ rufo-testaceous; posterior tibiæ and basal joint of the tarsi with a dense scopa of pale fulvous pubescence. Abdomen oblong-ovate, shining, with a little thin pale fulvous pubescence at the base, a fascia of white pubescence at the base of the second segment and also a broadly interrupted one in the middle; the third and fourth segments with broad white pubescent fasciæ near their lateral margins; the fifth and sixth segments with black pubescence.

*Male.* About the size of the female, with the clypeus, labrum, antennæ black, the latter the length of the head and thorax.

pubescence on the thorax and abdomen as in the female, except that on the former it is entirely fulvous, and the fasciæ on the abdomen are narrower.

*Hab.* Mexico, Oajaca.

#### 6. *Melissodes atrata*.

*Male.* Length 5 lines.—Black; the abdomen shining. The clypeus with a semicircular yellow macula; the pubescence on the head white; that on the thorax black, with a mixture of griseous on the scutathorax; wings hyaline, faintly clouded and iridescent at the apex, nervures black. The abdomen with a little griseous pubescence at the base; the third, fourth, and fifth segments have laterally a narrow line of thin white pubescence in the middle; beneath, the margins of the third, fourth, and fifth segments have a thin fringe of white pubescence.

*Hab.* Mexico, Oajaca.

This species resembles the male of *M. nigra*, but that insect has a clypeus and labrum entirely yellow and the antennæ fulvous beneath.

#### 7. *Melissodes modesta*.

*Male.* Length 5 lines.—Black, with the labrum white. The antennæ longer than the body, the joints subarcuate; a little griseous pubescence on the sides of the face, that on the cheeks white; the thorax with pale fulvous pubescence above, beneath with white; the apical joints of the tarsi ferruginous; the intermediate and posterior legs with black pubescence; the anterior legs with white pubescence; wings hyaline at the base, their apex clouded and iridescent; the nervures fusco-ferruginous, the costa blackish. Abdomen shining, the base with pale pubescence; towards the apex a little thin white pubescence; beneath, the segments are tinged with white.

*Hab.* Mexico, Oajaca.

#### 8. *Melissodes atropos*.

*Male.* Length 7 lines.—Black and shining, the abdomen with anaceous tint at the base. The face with white pubescence at the sides, that on the vertex black; there is also a little white pubescence behind the eyes; the clypeus strongly punctured; the mentellum, except the two basal joints, obscurely fulvous beneath. The thorax closely punctured, its pubescence, as well as that on the legs, black; wings fuscous, with a violet iridescence. Abdomen closely and finely punctured; the fourth segment with a tuft of

white pubescence on its apical margin laterally; beneath, the third and fourth segments fringed with white pubescence laterally, the fifth entirely fringed; the margins of the segments rufo-piceous.

*Hab.* Brazil, Santarem.

#### 9. *Melissodes ambigua*.

*Female.* Length 4 lines.—Black. The face with griseous pubescence; the flagellum, except two or three of the basal joints, fulvous beneath; the clypeus strongly punctured. Thorax with griseous pubescence above, that on the disk of the mesothorax and on the scutellum black; beneath and on the legs it is black, except that on the posterior tibiae and first joint of the tarsi, which is fulvous; wings subhyaline. Abdomen closely and finely punctured at the base of the segments, the base with a little griseous pubescence; the second segment with a narrow white pubescent fascia at the basal margin, also an interrupted one in the middle of the segment, the third with a narrow white fascia at the base, the fourth with a broader fascia; the two following with black pubescence; the segments beneath fringed with black pubescence.

*Hab.* Mexico.

#### 10. *Melissodes hirsuta*.

*Male.* Length  $4\frac{1}{2}$  lines.—Black, with fulvous pubescence. The clypeus and labrum yellow; the mandibles ferruginous, with the base black; the flagellum, except the basal joint, fulvous beneath; the pubescence on the head pale fulvous. The thorax with bright fulvous pubescence above; on the metathorax, the sides, and beneath pale fulvous; wings hyaline, their apical margins slightly clouded, the nervures ferruginous; the legs with pale fulvous pubescence, the tarsi ferruginous, the basal joint more or less fuscous outside. Abdomen very pubescent; the segments with broad bands of fulvous pubescence, which is rather long and dense; the segments beneath fringed with fulvous pubescence.

*Hab.* Mexico, Oajaca.

#### PACHYMELUS.

*Head* not quite as wide as the thorax; *antennae* slender, the flagellum filiform; the *clypeus* convex; the *mentum* rounded anteriorly; *ocelli* in a triangle; *mandibles* arcuate, rounded at the apex, not toothed. The *labial palpi* 4-jointed; the first joint elongate, third longer than the mentum; the second joint about one-fifth the length of the first joint; the two apical joints minute.

at the apex of the second joint. *Maxillary palpi* 5-jointed, the first joint clavate; the first joint short, the second joint about twice the length of the first, the third shorter than the second, the two apical joints of about equal length, each being shorter than the third joint. *Anterior wings* with one elongate marginal cell as long as the three submarginals united; the first submarginal as long as the two following, the second obliquely quadrate, the third a little longer than the second and slightly widened at the apex; the first recurrent nervure uniting with the second transverso-median nervure, the second recurrent uniting with the third transverse nervure. *Thorax* pubescent; *legs* stout; the posterior tibiae and basal joint of the tarsi densely pubescent. *Abdomen* oblong-ovate.

### 1. *Pachymelus microlephas*.

*Male*. Length 15 lines.—Black; the abdomen with short fulvous pubescence. The front with a mixture of black and griseous pubescence; the labrum and the mandibles beneath fringed with black hairs. Thorax densely clothed with pale ochraceous pubescence, usually more or less abraded on the disk of the mesothorax, which is smooth and shining and has a central impressed line; the scutellum bituberculate; wings subhyaline at their base, and clouded with reddish brown beyond the enclosed cells; the nervures black, the tegulae obscure rufo-piceous; legs pubescent, on the anterior pair it is dark; all the femora fringed beneath with pale ochraceous, the intermediate tibiae and tarsi with pale fulvous above, the posterior tibiae and tarsi with bright pale fulvo-ochraceous, that on the basal joint of the tarsi within is black; all the claws bifid. Abdomen with short fulvo-ferruginous pubescence; the fifth and sixth segments thickly fringed with pale fulvous pubescence; the sixth segment with an oblong angulated naked space in the middle; the margins of the segments beneath fringed with pale fulvous pubescence.

*Hab.* Madagascar.

The specimen of this gigantic bee described is not in good condition: the wings are ragged at the margins, and there can be no doubt of the general pubescence being bleached: in a good example the abdomen would be covered with short rufo-ferruginous pubescence, of which only patches are found in the single specimen recorded. The only bee known of a larger size is a species of the genus *Archile*, discovered by Mr. Wallace in Bacheian, *M. plato*, which is  $1\frac{1}{2}$  lines long.

### 2. *Pachymelus conspicuus*.

*Male*. Length 9 lines.—Black; the abdomen with rufo-ferruginous pubescence. The labrum, the clypeus, and also the base of the mandibles whitish; the clypeus with a bilobed black spot



at the base; the front clothed with very pale ochraceous pubescence, the cheeks with white; the mandibles fringed with white hairs. Thorax densely clothed with short reddish-brown pubescence on the disk, paler on the metathorax, beneath and on the legs with black; the anterior tibiæ and tarsi with a fringe of white pubescence, the posterior tibiæ and tarsi densely clothed with white outside, the former with a little black at the base; beneath entirely black; wings subhyaline, with black nervures, the tegulae obscurely piccous. Abdomen densely clothed above with very short rufo-fulvous pubescence, the fifth and sixth segments with black; the fifth has at the base in the middle a little tuft of white pubescence.

*Hab.* Nyassa.

### HABROPODA, Smith.

#### 1. *Habropoda montezumia*.

*Male.* Length  $5\frac{1}{4}$  lines.—Black; the thorax with ochraceous pubescence above, also a little on the basal segment of the abdomen; the three following segments have their apical margins fringed with pale bright pubescence, and the fifth and sixth are covered with the same. The clypeus much produced, and, as well as the labrum, mandibles, scape of the antennæ in front, and an angular spot on each side of the clypeus at the margin of the eyes, yellowish white; the face with thin black pubescence, that on the cheeks and thorax beneath white. The wings subhyaline, the nervures fusco-ferruginous, the tegulae pale testaceous; the tarsi, except the basal joint, ferruginous. The abdomen with short thin black pubescence on the first, second, and base of the third segments.

*Hab.* Mexico, Oajaca.

#### 2. *Habropoda agilis*.

*Male.* Length  $5\frac{1}{2}$  lines.—Head and thorax black, abdomen ferruginous. The clypeus much produced and yellowish-white; the mandibles, labrum, scape in front, and a triangular macula on each side of the face of the same colour; the front with faint yellowish pubescence, mixed with black at the sides of the clypeus; the cheeks and thorax beneath with white pubescence, above with pale ochraceous; wings fulvo-hyaline, the nervures black, the tegulae pale testaceous; the base of the posterior tibiæ and the four apical joints of the tarsi ferruginous. The abdomen with thin pale pubescence on the basal segment; the apical margins of the segments pale testaceous, and fringed with pale pubescence; the two apical segments thinly covered with the same.

*Hab.* Mexico, Oajaca.

### 3. *Habropoda bombyformis*.

*Male*. Length  $5\frac{1}{2}$  lines.—Black; the thorax with fulvous pubescence above; the abdomen more or less ferruginous at the apex. The clypeus produced, and, as well as the mandibles, labrum, the scape in front, and a narrow line at the inner margin of the eyes, yellowish-white; two longitudinal black lines at the base of the clypeus, and two small ovate black maculæ at the base of the labrum; the cheeks and thorax beneath with white pubescence. The wings subhyaline, the nervures fusco-ferruginous, the tegulæ rufo-testaceous; the tarsi ferruginous, with the basal joint black. Abdomen with the three basal segments, and sometimes the base of the fourth, narrowly black, the rest ferruginous.

*Female*. The apical margin of the first and second segments and the following segments ferruginous; all the segments fringed with fulvous pubescence.

*Hab.* Mexico, Oajaca.

### 4. *Habropoda terminata*.

*Male*. Length 6 lines.—Black; clothed with black pubescence, that on the three apical segments of the abdomen fulvous. The clypeus yellowish-white, also a longitudinal stripe of the same colour on the labrum. The wings subhyaline; the posterior tibiæ with white pubescence above; the tarsi, except the basal joint, ferruginous; the femora and abdomen beneath obscurely ferruginous.

*Female*. A little smaller than the male; the clypeus with a triangular spot on each side close to the eyes, the labrum, mandibles, and the scape of the antennæ in front, yellowish-white; the pubescence on the cheeks, thorax, and abdomen beneath white; the last with thin white pubescence on the tip. Otherwise like the male, excepting that the posterior tibiæ have black pubescence.

*Hab.* Mexico, Oajaca.

This species must be closely allied to *Anthophora auroventa-causta* of Dours, which is probably a species of *Habropoda*; but his description differs too much from that of our species, particularly that of the male, to be that of *H. terminata*.

### 5. *Habropoda fulva*.

*Male*. Length  $5\frac{1}{2}$  lines.—Black; clothed with fulvous pubescence. The clypeus, labrum, mandibles, a narrow line at the inner orbits of the eyes, and the scape of the antennæ in front white; a black line on each side of the clypeus at its base, and the tips of the mandibles black; the flagellum fulvous beneath. The wings sub-

hyaline, the nervures black; the tarsi ferruginous; the apical margins of the segments of the abdomen broadly rufo-testaceous.

*Hab.* Guatemala.

## ANTHOPHORA, Latr.

### 1. *Anthophora vivida*.

*Male.* Length 6 lines.—Black; the abdomen with four blue pubescent fasciæ. Head with a mixture of blue and black pubescence above, that on the cheeks white; the mandibles and labrum of the anterior margin of the clypeus narrowly, a central line, not extending to the base, a narrow abbreviated line on each side, a minute central line above it, and a spot on the scape in front, yellow; two black spots at the base of the labrum. The mesothorax with a mixture of blue and black pubescence; on the metathorax it is entirely black; the legs with black pubescence, the anterior tibiae and tarsi with blue pubescence above; wings fusco-hyaline, the nervures black. Abdomen with a little black pubescence at the base; the second and three following segments with pale blue pubescent fasciæ on their apical margins; beneath black.

*Hab.* Sierra Leone.

### 2. *Anthophora torrida*.

*Female.* Length  $5\frac{3}{4}$  lines.—Black; the pubescence on the head and thorax above fulvous; the abdomen with pale pubescent marginal fasciæ. The labrum, mandibles, the anterior and lateral margins of the clypeus narrowly, a central longitudinal line, and a minute line above the clypeus, yellowish-white; the antennæ fulvous in front; the tips of the mandibles black; the cheeks with white pubescence. The sides of the thorax, and also beneath, much paler than above; the anterior legs with pale pubescence, that on the intermediate and posterior tibiae fulvous, and that on their tarsi black; the posterior tibiae with a tuft of white at their apex above; wings subhyaline, their nervures black, the tegulae rufo-testaceous. The fascia on the basal segment fulvous, that on the two following paler, and the fourth white; the fourth and fifth segments sparingly clothed with thin short white pubescence, that at the apex fuscous.

*Hab.* Sierra Leone.

### 3. *Anthophora fallax*.

*Female.* Length 5 lines.—Black; the head and thorax above with ochraceous pubescence tipped with black, that on the face, cheeks, and on the thorax beneath whitish. The clypeus with the lateral

and anterior margins and a narrow line in the middle, a transverse line above the clypeus angulated in the middle, the labrum, and mandibles, pale yellow; the basal margin of the labrum black, the tips of the mandibles ferruginous; wings subhyaline, the nervures dark fuscous, the tegulæ pale testaceous; the posterior tibiæ with white pubescence above, beneath with black, the calcaria black. Abdomen with short black pubescence, the apical margins of the first to fourth segments with narrow white pubescent fasciæ; beneath they are margined with fulvous pubescence in the middle and with white at the sides.

*Male.* Closely resembles the female, but has the scape of the antennæ pale yellow in front.

*Hab.* Natal, Sierra Leone.

#### 4. *Anthophora rapida.*

*Female.* Length 6 lines.—Black; the vertex and thorax above with dull ochraceous pubescence tipped with black; that on the face, cheeks, thorax beneath, and on the femora and tibiæ above, whitish; that on the legs beneath and on the tarsi black; the anterior margin of the clypeus narrowly, a central longitudinal line, a transverse one above it, the labrum and mandibles, white; the latter black at their apex; wings subhyaline, the nervures black, tegulæ dark rufo-piceous. At the extreme base of the abdomen the pubescence is fulvous and on the apical portion black; the second and third segments with very short black pubescence, on the fourth and fifth it is thin and white, and on the apical segment black; the apical margins of the first, second, and third segments with narrow white pubescent fasciæ.

*Hab.* Natal.

#### 5. *Anthophora terminata.*

*Male.* Length  $5\frac{1}{2}$ –6 lines.—Black; the pubescence on the head, thorax, and fourth and fifth segments of the abdomen white. The anterior margin of the clypeus narrowly and a central tapering line, sometimes the lateral margins more or less, a transverse line above it, the labrum and mandibles, yellowish white; the tips of the latter and two spots at the base of the labrum black. The legs with black pubescence; the anterior tibiæ and tarsi above, the intermediate tibiæ above, and a tuft at the base of the posterior tibiæ white; wings subhyaline, with their apical margins faintly clouded.

*Hab.* Natal.

#### 6. *Anthophora modesta.*

*Female.* Length  $6\frac{1}{2}$  lines.—Black; the pubescence black and very

dense on the head and thorax; the face with a little griseous pubescence, that on the cheeks white; the posterior tibiæ and tarsi with bright fulvous pubescence; all the tarsi and the posterior tibiæ ferruginous; a narrow fascia of snow-white pubescence on the apical margin of the basal segment of the abdomen.

*Hab.* St. Vincent, Cape-Verd Islands.

#### 7. *Anthophora advena*.

*Male.* Length  $6\frac{1}{4}$  lines.—Black; the thorax with rufo-fulvous pubescence; the fourth and following segments of the abdomen with white pubescence. The anterior margin of the clypeus broadly, the lateral margins narrowly, a central longitudinal line, and a transverse line above, the clypeus and mandibles, white, the tips of the latter black; the cheeks and thorax beneath with griseous pubescence; the wings subhyaline, the nervures black, the tegulæ testaceous; the anterior legs with pale pubescence.

*Hab.* Lake Nyassa.

#### 8. *Anthophora fimbriata*.

*Female.* Length  $8\frac{3}{4}$  lines.—Black; a large ovate spot at the lateral angles of the anterior margin of the clypeus, the margin between the spots, a central elongate angular macula, a narrow line at the sides, a transverse spot above the clypeus, three large spots on the labrum, and the basal half of the mandibles, white; the pubescence on the vertex white, tipped with black. Thorax clothed with short bluish-white pubescence, tipped with black; the metathorax and posterior margin of the scutellum with longer, snow-white pubescence; wings dark fuscous, with a violet iridescence; the anterior legs with similar pubescence to that on the mesothorax; on the other legs it is black. Abdomen slightly shining and finely punctured, the fifth segment with a little white pubescence.

*Hab.* Silhet.

#### 9. *Anthophora candida*.

*Female.* Length 5 lines.—Black, and densely clothed with pale ochraceous pubescence. The clypeus, labrum, and mandibles white, the latter ferruginous at their tips; the antennæ fulvous. The wings clear hyaline, the tegulæ and nervures rufo-testaceous; the intermediate tibiæ and tarsi with black pubescence beneath; the posterior tibiæ beneath and the tarsi entirely covered with black pubescence. The abdomen with black pubescence at the apex.

*Hab.* Punjab.

10. *Anthophora florea*.

*Female*. Length 7 lines.—Black; the thorax with fulvous pubescence; the coxæ and femora ferruginous; the apical margins of the second, third, and fourth segments of the abdomen with narrow white pubescent fasciæ. The anterior and lateral margins of the clypeus, a central longitudinal line, a transverse line above it, and the labrum and mandibles, white; the latter rufo-piceous at their apex. The wings pale fulvo-hyaline, the nervures black, the tegulæ pale rufo-testaceous; the tibiæ with fulvous pubescence, that on the tarsi black. On the first and second segments of the abdomen there is a thin short fulvous pubescence, on the following segments it is black; the abdomen obscurely ferruginous beneath.

*Hab.* Shanghai.

11. *Anthophora hilaris*.

*Female*. Length 5½ lines.—Black; the pubescence on the head white, that on the thorax above and on the base of the abdomen rufo-fulvous. The flagellum of the antennæ beneath, except the three basal joints, fulvous. The pubescence on the thorax above is very bright; on the tibiæ above it is white, and on the tarsi black; the legs rufo-piceous beneath; the apical joint of the tarsi ferruginous; wings hyaline, the nervures black, the tegulæ rufo-testaceous. The first segment of the abdomen with bright rufo-fulvous pubescence; the second, third, and fourth segments with thin white pubescent fasciæ, usually more or less interrupted in the middle; beneath, the third, fourth, and fifth segments have their apical margins fringed laterally with white pubescence, the fifth with black in the middle.

*Hab.* St. Domingo.

12. *Anthophora emendata*.

*Anthophora cincta*, Dours (nec Fabr.), *Mon. du Gen. Anthoph.* 58.

*Female*. Length 6 lines.—Black; the head, thorax, and legs with bright fulvo-ferruginous pubescence, that on the cheeks and thorax beneath white; the flagellum beneath, except the basal joint, fulvous; the clypeus, labrum, and mandibles reddish yellow; the clypeus thinly sprinkled with black hairs; tips of the mandibles ferruginous. The apical margins of the segments with fasciæ of pale blue pubescence, having a silvery lustre; the band on the basal segment with a slight yellow tinge; beneath, the segments are fringed with fulvous pubescence in the middle, and with white at the sides.

*Hab.* Australia.

The Fabrician type of *Megilla cincta* is in the Banksian Collection

in the British Museum. The species has been received from Siem Leone; and it has, as described by Fabricius, green pubescence on the thorax. The *A. cineta* is described by Dours as having the pubescence "*ardente-rufis*:" the size given is evidently a mistake, being 18 millims.; that is the size of *A. hispanica*, which belongs to the division *Magna*, whilst *A. emendata* is placed in the division *Media*, of which *A. quadrifasciata* is given as typical.

### 13. *Anthophora insularis*.

*Female*. Length  $6\frac{1}{2}$  lines.—Black; the pubescence on the face, thorax anteriorly, and extreme base of the abdomen ochraceous; on the hinder portion of the thorax, from the tegulæ, it is black; on the second and third segments of the abdomen it is fulvous, and on the following segments black; on the posterior margin of the vertex and on the cheeks it is also black; the posterior tibiæ and tarsi with fulvous pubescence outside; on the tibiæ within it is black, but bright fulvous on the tarsi; two or three of the apical joints of all the tarsi ferruginous. The wings subhyaline, the nervures and tegulæ black.

*Hab.* Vancouver's Island.

### 14. *Anthophora cineraria*.

*Female*. Length  $7-7\frac{1}{2}$  lines.—Black, and clothed with cinereous pubescence, that on the thorax having more or less of an ochraceous tinge; the posterior tibiæ and tarsi with bright fulvous pubescence outside; the apical joints of the tarsi ferruginous; wings subhyaline, the nervures and tegulæ black.

*Male*. Smaller than the female; clothed with similar pubescence, but the third to sixth segments of the abdomen with black pubescence, the terminal segment with white; on the thorax beneath and on the tibiæ and tarsi, the pubescence is pale; the apical joints of the tarsi pale ferruginous.

*Hab.* Vancouver's Island.

## XYLOCOPA, Latr.

### 1. *Xylocopa bomboides*.

*Male*. Length  $12\frac{1}{2}$  lines.—Black; the clypeus and sides of the face below the antennæ, white; the flagellum, except one or two of the basal joints, fulvous beneath; eyes large and subapproximate at the vertex; the head, thorax, legs, and three basal segments of the abdomen with black pubescence, the legs having a long fringe behind; the fourth and following segments of the abdomen with bright ferruginous pubescence; the wings fulvo-hyaline, and slightly

clouded beyond the enclosed cells; the nervures fusco-ferruginous.

*Hab.* Island of Formosa.

### EXOMALOPSIS, Spin.

#### 1. *Exomalopsis iridipennis*.

*Female.* Length  $2\frac{3}{4}$  lines.—Black and shining, the scopa on the posterior legs black. The face with pale fulvous pubescence at the sides; the clypeus with a few scattered punctures; the labrum with pale fulvous pubescence; the flagellum fulvous beneath. The margin of the prothorax fringed with short white pubescence; the mesothorax finely punctured; the sutures of the scutellum and postscutellum with white tomentum; wings clear hyaline and brightly iridescent, the nervures and stigma pale rufo-testaceous; the apical joints of the tarsi pale ferruginous. Abdomen with the basal segment impunctate, the second and third very finely punctured, the apical segments with dense short white pubescence; beneath, the pubescence is pale fulvous.

*Hab.* Amazons, Ega.

#### 2. *Exomalopsis planiceps*.

*Female.* Length 3 lines.—Black and shining; the posterior legs with a dense scopa of black pubescence. Head rotundate, the clypeus punctured. Thorax finely punctured above; wings hyaline and iridescent, the apical margins clouded, the stigma pale; the legs obscurely rufo-piceous beneath; the scopa on the posterior pair sooty black, with a mixture of pale pubescence in front. Abdomen impunctate; the third segment with golden-coloured pubescence at the sides, the following segments covered with the same.

*Male.* Rather smaller than the female; the face with golden pubescence; the flagellum fulvous in front. The thorax with brown pubescence in front, on the sides and beneath it is griseous; wings as in the other sex; the apical joints of the tarsi pale ferruginous. Abdomen with thin short pubescence, that at the sides of the first segment pale; the third, fourth, and fifth with fasciae of golden-coloured pubescence, the apical segments covered with the same.

*Hab.* Amazons, Tunantins.

#### 3. *Exomalopsis tarsata*.

*Female.* Length 3 lines.—Black and shining. Head rotundate; the face with silvery-white pubescence at the sides; the mandibles



ferruginous at their apex; the flagellum of the antennæ, except the basal joint, fulvous beneath; the clypeus with scattered punctures. The mesothorax with scattered punctures; the sides of the thorax beneath, and the metathorax with sparing short white pubescence; wings hyaline and iridescent, their apex slightly clouded, the nervures and stigma pale rufo-testaceous, the tegulæ rufo-piceous; the tarsi and posterior tibiæ ferruginous; the scopa on the posterior tibiæ pale fulvous, that on the basal joint of the tarsi fuscous. Abdomen with the basal segment impunctate, the second segment finely punctured at the base; the following segments with white pubescence.

*Hab.* Santarem.

This species is closely allied to the *E. analis* of Spinola, described in the Mem. Accad. Torino, vol. xiii.

#### 4. *Exomalopsis artifex*.

*Female.* Length 3 lines.—Black; the legs rufo-piceous beneath, obscurely so above; the scopa on the posterior legs fuscous above and whitish beneath. The face with short white pubescence on each side, that above the antennæ slightly fulvous; the flagellum of the antennæ fulvous beneath. The scutellum with dense pale fulvous pubescence; the wings hyaline, the nervures, stigma, and tegulæ rufo-testaceous; the apical joints of the tarsi pale ferruginous. Abdomen shining, the basal segment impunctate, at its extreme base a little pale fulvous pubescence, also a little at the sides of the second, and the following segments covered with similar pubescence.

*Male.* Smaller; the labrum rufo-testaceous, the tips of the mandibles ferruginous; the wings as in the female; the legs rufo-piceous; the tibiæ and femora darkest above, the pubescence whitish above and fulvous beneath. The abdomen rufo-testaceous beneath, above obscurely so; a little white pubescence at the base; the second segment has an interrupted fascia of white pubescence, and the third and following segments covered with the same.

*Hab.* Para.

#### 5. *Exomalopsis rufitarsis*.

*Female.* Length 3 lines.—Black and shining, the scopa on the posterior legs fulvous; the labrum and tips of the mandibles ferruginous; the flagellum fulvous beneath. The wings hyaline, the nervures and stigma fusco-ferruginous; the tarsi and posterior tibiæ ferruginous; the scopa fulvous, with a slight mixture of fuscous above. Abdomen smooth, shining, and impunctate.

the base with a little pale pubescence, also at the basal margins of the following segments; the apex with fulvous pubescence.

*Hab.* Jamaica.

#### 6. *Exomalopsis flava*.

*Female.* Length 3 lines.—Yellow; slightly reddish yellow on the vertex and mesothorax, palest on the clypeus and metathorax; the labrum, mandibles, and cheeks are also pale; the clypeus with strong punctures. The mesothorax with a central longitudinal impressed line, with a pale stripe on each side of it; wings hyaline and brightly iridescent; the nervures, stigma, and tegulae yellow; the scopa on the posterior legs pale fulvous. Abdomen smooth, shining, and impunctate.

*Hab.* Brazil, St. Paulo.

#### 7. *Exomalopsis fulvofasciata*.

*Female.* Length  $3\frac{1}{2}$  lines.—Black; the face with pale fulvous pubescence, the clypeus with scattered punctures; the flagellum fulvous beneath. The mesothorax finely and closely punctured; the margin of the prothorax, the scutellum, and postscutellum with fulvous pubescence; beneath, the pubescence is white; wings subhyaline, the nervures fusco-ferruginous, the tegulae rufopiceous; the scopa on the posterior legs black above and white beneath. The basal segment of the abdomen with thin pale pubescence; the basal margin of the second segment with a narrow fascia of fulvous pubescence; a broad fascia of fulvous pubescence in the middle of the third, and the fourth and fifth covered with the same; on the sixth the pubescence is black.

*Hab.* Bahia.

#### 8. *Exomalopsis fulvescens*.

*Female.* Length 4 lines.—Black, with the antennae and legs ferruginous; the front above the antennae with fulvous pubescence, below the antennae it is cinereous, as it is also on the cheeks. Thorax with fulvous pubescence above, paler on the sides, and whitish beneath; wings pale flavo-hyaline, the nervures pale testaceous, the tegulae rufo-testaceous; the scopa on the posterior legs pale fulvous, with a mixture of fuscous above. Abdomen with a short changeable fulvous tomentum, the apical margins of the segments with bright fulvous fasciae.

*Hab.* Mexico, Oajaca.

**TETRAPEDIA, Klug.****1. *Tetrapedia volatilis*.**

*Male*. Length 5 lines.—Black; the mandibles, labrum, and clypeus yellowish white; the last with a semicircular macula at the base and the tips of the mandibles black. The thorax opaque above; the wings fuscous, palest at their apical margins; the stigma rufo-testaceous; the apical joints of the anterior and intermediate tarsi, and the whole of the joints of the posterior pair, ferruginous; the hinder legs, with the apex of the tibiæ and first joint of the tarsi, with long bright yellow pubescence. Abdomen very smooth and shining, except the extreme basal margins of the segments which are punctured; a transverse ferruginous fascia on the two basal segments, that on the first in the middle of the segment, on the second it is at its basal margin; beneath, the third and fourth segments are fringed with pale hairs, the fourth has also on each side a floccus of long pale fulvous pubescence, which curls inwardly.

*Hab.* Brazil, Constançia.

**2. *Tetrapedia fervida*.**

*Male*. Length 4 lines.—Black, with the legs and base of the abdomen obscurely ferruginous. The anterior margin of the clypeus, an oblong spot on the sides of the face below the antennæ, the clypeus, and mandibles, white; the antennæ dark ferruginous; the flagellum beneath, except the basal joint, fulvous; the head and abdomen shining, the thorax opaque above; the wings fuscous, hyaline, the stigma pale rufo-testaceous; the legs with black pubescence; the calcaria, which arm the apex of the tibiæ, white. Abdomen very smooth and shining; beneath, the third segment in the middle is covered by a semicircular kind of pad; the fourth segment has at its basal margin a narrow fringe of white pubescence, and has also, laterally, a floccus of pale pubescence, which curls inwardly; the following segment is yellow in the middle.

*Hab.* Brazil, Constançia.

**3. *Tetrapedia amplipennis*.**

*Female*. Length  $4\frac{3}{4}$  lines.—Black; the head and abdomen shining, the thorax opaque above; the extreme base of the abdomen sometimes slightly ferruginous. The clypeus coarsely punctured, its anterior and lateral margins, as well as the base of the labrum, pale testaceous; the antennæ more or less fulvo-ferruginous beneath; the base of the scape pale testaceous. The wings dark fuscous, becoming paler towards their apical margins; the stigma rufo-

testaceous; the apical joint of the tarsi ferruginous; the pubescence on the legs black, with a little white at the apex of the posterior tibiae; the first joint of the posterior tarsi with fulvous pubescence within.

*Male.* Exactly resembles the female, and, as in that sex, has the legs obscurely ferruginous beneath.

*Hab.* Amazons, Ega and Tunantins.

#### 4. *Tetrapedia basalis.*

*Female.* Length  $4\frac{1}{2}$  lines.—Black; the abdomen very smooth and shining. A little white pubescence on the sides of the face and also at the insertion of the antennae; the clypeus with a few distant punctures, its anterior margin slightly emarginate; the tips of the mandibles pale testaceous; the flagellum of the antennae, except the three basal joints, obscurely fulvous beneath. The mesothorax shining and punctured; the wings, from the base to the stigma, dark brown, the apical portion milky white; the legs with black pubescence, that on the posterior tibiae and first joint of the tarsi very dense and long. Abdomen pubescent at the apex; beneath, the third and fourth segments with pale fulvous pubescence, that on the apical segments black.

*Hab.* Brazil, Fontiboa.

#### 5. *Tetrapedia plumipes.*

*Female.* Length  $4\frac{1}{2}$  lines.—The head and thorax black, the abdomen yellow, with black markings; legs pale ferruginous. The clypeus, labrum, and mandibles yellow; the last black at their tips; antennae ferruginous; the base of the clypeus more or less black; the front with short pale fulvous pubescence, the clypeus naked. The thorax above with short fulvous pubescence, that on the sides and beneath paler; wings hyaline, the nervures, stigma, and tegulae pale ferruginous; the pubescence on the legs fulvous, that on posterior pair long and dense, as in *Dasypoda hirtipes*. Abdomen oblong; the basal segment with four ovate black spots, two placed laterally and near the apical margin of the segment, and two minute ones in a line with the others; at the basal margin of the other segments a broad black fascia, which emits a semicircular black mark on each side, in a line with the two ovate black spots on the basal segment; beneath yellow.

*Hab.* Amazons, Ega.

#### 6. *Tetrapedia flavipennis.*

*Female.* Length 4 lines.—Yellow. The vertex black, with a narrow yellow line before the anterior ocellus; the tips of the mandibles

black; the flagellum fuscous above, the eyes also fuscous. The thorax opaque above; the wings flavo-hyaline, the nervures and tegulæ pale ferruginous; the legs with reddish-yellow pubescence very dense on the posterior legs. Abdomen very smooth and shining, the apical margins of the segments more or less fuscous, the apical segment with bright reddish-yellow pubescence.

*Hab.* Amazons, Ega.

#### 7. *Tetrapedia lævifrons*.

*Female.* Length 4 lines.—Yellow, smooth, and shining, except the thorax above, which is opaque. The head reddish yellow above, the antennæ, and pale below; the scape pale yellow; the mandibles ferruginous at their apex. The wings pale flavo-hyaline, the nervures and tegulæ pale ferruginous; the pubescence on the legs fulvous, except that on the basal joint of the posterior tarsi, which is dark fuscous. Abdomen very smooth and shining; the apical segment with fulvous pubescence; beneath pale yellow, the segments fringed with yellow pubescence.

*Hab.* Brazil, St. Paulo.

#### 8. *Tetrapedia punctifrons*.

*Female.* Length  $3\frac{1}{2}$  lines.—Head and thorax reddish yellow, the abdomen pale ferruginous. The clypeus and a triangular space above coarsely punctured, the clypeus pale yellow towards the apex; the antennæ fuscous above beyond the third joint; a black stripe on each side of the face at the inner orbits of the eyes towards their summit. The prothorax marginate posteriorly, wings hyaline, the nervures and stigma pale ferruginous; the posterior legs with a dense scopa of long pale, nearly white, pubescence. Abdomen with pale yellow fasciæ at the basal margins of the segments, the fasciæ much attenuated in the middle.

*Hab.* Brazil, Santarem.

### EPICHARIS, Klug.

#### 1. *Epicharis lateralis*.

*Female.* Length 8 lines.—Black; the abdomen with two large subtriangular yellow maculæ at the base. The labrum and a small triangular spot on the face on each side, at the anterior angles, yellow. The thorax with sooty black pubescence on the sides, beneath, and on the metathorax; wings dark brown, with a violet iridescence, the pubescence on the legs black, except that on the posterior tibia and first joint of the tarsi, which forms a dense scopa of bristles.

yellow. The second segment of the abdomen with a large pale yellow macula on each side, the width of the segment laterally, and narrowing inwardly to a point at the middle of its base; the third, fourth, and fifth segments have at their base laterally a short narrow yellow stripe.

*Hab.* Trinidad.

### BOMBUS, Latr.

#### 1. *Bombus bellicosus*.

*Female.* Length  $10\frac{1}{2}$  lines.—Black. The head oblong, its pubescence black; the labrum fringed with ferruginous pubescence. The thorax clothed with dull fulvo-ferruginous pubescence above; on the sides, beneath, and on the legs it is black; on the tarsi beneath it is ferruginous; wings dark brown, darkest towards their apical margins. The first, second, and third segments of the abdomen with short black pubescence, that on the following segments bright ferruginous.

*Hab.* Sumatra or India.

From the Zoological Society's Collection.

#### 2. *Bombus montivagus*.

*Female.* Length  $9\frac{1}{2}$  lines.—Black. Head elongate; the clypeus shining and finely punctured; the pubescence black. The thorax with rufo-fulvous pubescence, on the disk of the mesothorax it is black; the posterior tibiae and tarsi obscurely ferruginous, palest beneath; the tarsi with ferruginous pubescence within; wings dark brown, with a purple and violet iridescence in certain lights, the tegulae obscurely rufo-piceous. The basal segment of the abdomen with bright yellow pubescence, on the second and third it is black, and on the following segments it is bright ferruginous; beneath, obscurely ferruginous, the segments fringed with rufo-fulvous pubescence.

*Hab.* Moolai (alt. 3000–6000 feet).

#### 3. *Bombus senilis*.

*Female.* Length  $7\frac{3}{4}$  lines.—Black. Head elongate; the pubescence on the front and on the posterior margin of the vertex pale ochraceous, the latter mixed with a few black hairs. The thorax above with a mixture of black and ochraceous pubescence, palest on the scutellum, on the sides and beneath it is nearly white; the legs with pale pubescence, on the anterior and intermediate tibiae out-

side it is short and fuscous, on the tarsi above it is fulvous, and beneath ferruginous; wings subhyaline, with a slight fuscous cloud at their apex, the nervures fusco-ferruginous. The basal segment of the abdomen with pale ochraceous pubescence; the second with fulvous at the base and pale beyond; the rest of the segments with pale pubescence, and each with a little black at their basal margin; the extreme apex with short fulvous pubescence; beneath, the segments are fringed with pale pubescence.

*Hab.* Japan.

This species closely resembles the European *B. sylvarum*.

#### 4. *Bombus buccinatoris*.

*Female.* Length 8 lines.—Black. The head oblong, and, as well as the thorax and legs, clothed with black pubescence; the meta-thorax and two basal segments of the abdomen with bright yellow pubescence, on the two following it is black, on the two apical segments it is bright ferruginous; wings dark brown, with violet iridescence.

*Hab.* Northern India, Kanàwar district.

#### 5. *Bombus personatus*.

*Female.* Length 10 lines. Black; head elongate, as in *B. hortorum*. The pubescence on the cheeks and vertex black, the latter mixed with pale hairs. The thorax above with a band of black pubescence between the wings, before and behind which it is pale fulvo-ochraceous, as well as on the two basal segments of the abdomen; the following segments have black pubescence at their base, and have a fringe of pale pubescence on their apical margins. The legs with black pubescence, except that on the basal joint of the tarsi beneath which is ferruginous; wings subhyaline, the nervures fusco-ferruginous.

*Hab.* India, Kanàwar.

#### 6. *Bombus bicoloratus*.

*Female.* Length 12 lines.—Black; the head, thorax, and legs with black pubescence; the first joint of the tarsi with ferruginous pubescence beneath. Wings fulvo-hyaline, their apical margin clouded beyond the third submarginal cell; the nervures ferruginous, the costal nervure black. The abdomen densely clothed with ferruginous pubescence; beneath, the segments are fringed with the same.

*Hab.* Island of Formosa.

**7. *Bombus ardens*.**

*Male*. Length 7 lines.—Black, with the tarsi ferruginous; the pubescence on the head, thorax, and three basal segments of the abdomen yellow, that on the abdomen palest; head not elongated; the mandibles fringed with fulvous pubescence, as are also the tibiae and tarsi; wings pale fulvo-hyaline, the nervures ferruginous; the four apical segments of the abdomen clothed with fulvous pubescence.

*Hab.* Japan.

**8. *Bombus unifasciatus*.**

*Female*. Length 11 lines.—Black; the head oblong; the insect clothed with black pubescence; the third segment of the abdomen with a fascia of bright yellow pubescence; the wings brown-black, with a violet iridescence.

*Worker*. Length 5–7 lines.—Exactly agrees with the female in every particular except size.

*Male*. Length 6–8 lines.—Differs only in the yellow fascia extending on to the fourth segment of the abdomen.

*Hab.* Guatemala, at an elevation of 5000 feet; San Francisco, 1500 feet; Irazu, 6000–7000 feet.

*Bombus flavifrons* resembles this species, but has yellow pubescence on the head and prothorax.

**9. *Bombus excellens*.**

*Female*. Length 11 lines.—Black; the head, thorax, legs, and the basal segment of the abdomen with black pubescence. The head elongate; the vertex and clypeus shining, the latter finely punctured. The basal joint of the tarsi with obscurely ferruginous pubescence within; wings brown, the nervures dark fusco-ferruginous. The abdomen with bright fulvo-ferruginous pubescence on the second to fifth segments, the sixth segment shining and with a few scattered black hairs.

*Hab.* Venezuela.

**10. *Bombus opifex*.**

*Worker*. Length 6–6½ lines.—Black; the pubescence on the head and legs black, a broad band of the same between the wings; the thorax anteriorly, posteriorly, and on the sides clothed with yellow pubescence, as are also the first, second, and third segments of the abdomen; on the following segments it is bright fulvous or fulvo-



ferruginous, more or less bright in different individuals; two or three of the apical joints of the tarsi ferruginous, the basal joint of the posterior tarsi with ferruginous pubescence beneath. The head in this species is subelongate.

*Hab.* Santiago and Mendoza.

#### 11. *Bombus lateralis*.

*Worker.* Length  $4\frac{1}{2}$ – $6\frac{1}{2}$  lines.—Black; head subelongate; the pubescence on the head black; on the thorax it is black, except that on the sides, which is bright yellow; on the basal segment of the abdomen and in the middle of the second also it is bright yellow. on the rest of the abdomen it is black.

*Var.* The yellow pubescence on the abdomen is on the sides only of the first and second segments.

*Hab.* Guatemala, Val de Fuego. and Irazu, 6000–7000 feet.

### EUMENIDÆ.

#### ODYNERUS.

*Group of* *Odynerus pratensis*, *Saussure's American Wasps*, p. 292.

#### 1. *Odynerus localis*.

*Female.* Length 7 lines.—Head and thorax not strongly but very closely punctured; the clypeus convex, strongly punctured, and truncate at the apex. The mesothorax with a mixture of large and small punctures; the postscutellum with strong punctures and crenulated; the metathorax rugose and truncate; wings dark shining reddish brown. Abdomen shining, truncate at the base, but not sharply ridged; the first and second segments with very fine distant punctures, the puncturing being strongest and closest at the base of the second segment; the third and following segments with stronger punctures than the first or second; the apical margins of the first and second segments with white fasciæ, that on the first narrower than that on the second.

*Male.* Only presents the usual sexual difference in the structure of the antennæ and abdomen; but the white bands on the abdomen are narrower, and the basal segment is rounded, not truncate.

*Hab.* Kauai.

According to the Rev. T. Blackburn, this species is abundant on the island of Kauai, but is not found anywhere else.

2. *Odynerus maurus*.

*Female*. Length  $6\frac{1}{2}$  lines.—Entirely black, with dark fuscous wings that have a violet iridescence, and some semifusco-hyaline spots about the second and third submarginal cells. The head and thorax very closely punctured; the clypeus with stronger punctures, its apex truncate, concave, and with the lateral angles sharp and apparently bidentate. The scutellum flattened; the postscutellum rugose, and with the margin crenulated; the metathorax truncate, having a central longitudinal channel, on each side of which it is obliquely rugose-striate. The basal segment of the abdomen obtusely rounded, not ridged, and, as well as the second segment, with very fine distant shallow punctures; the apical margin of the second segment and the following segments with distant large shallow punctures.

*Male*. Smaller, but closely resembles the female; the hooked joint at the apex of the antennæ is ferruginous.

*Hab.* Honolulu &c.

The Rev. T. Blackburn states that this species is apparently common all over the Hawaiian islands, constructing mud nests of 1 to 10 cells against stones, trunks of trees, &c., under eaves of houses, often even inside houses.

*Group of Odynerus vagus, Saussure's American Wasps, p. 314.*

3. *Odynerus rubritinctus*.

*Female*. Length  $4\frac{1}{2}$  lines.—Black, with the postscutellum, the metathorax, the basal segment of the abdomen, and the lateral and apical margins of the second segment dark blood-red. Head with a triangular red spot at the insertion of the antennæ above; the clypeus convex, narrowed anteriorly, its apex truncate, the lateral angles of the truncation subdentate. Thorax with a red spot beneath the wings and a minute one on the tegulæ in front and behind, closely and not very strongly punctured in the same manner as the head; the scutellum flat, and with a central longitudinal impressed line; the metathorax concave-truncate, the cavity black; wings dark fuscous, with a violet iridescence; along the course of the nervures is a more or less hyaline line. Abdomen shining; the first segment campanulate, and with rather strong distant punctures; the rest of the segments more finely punctured; the red lateral margins of the second segment are united by the red posterior margin.

*Male*. Length  $3\frac{1}{2}$  lines.—Very closely resembling the female; the terminal hook of the antennæ red. Thorax with two ovate spots on the scutellum, also two beneath wings, frequently united; the

second segment of the abdomen has a larger spot at the sides, and no red band on the apical margin.

*Hab.* Kauai.

This species is not rare on Kauai.

*Group of Odynerus totonacus, Saussure's American Wasps, p. 346*

#### 4. *Odynerus montanus.*

*Female.* Length 6 lines.—Entirely black and shining; wings deep brown-black, with a violet iridescence, very brilliant; the stigma and costal nervures bright steel-blue. The clypeus convex, finely punctured, with the apex truncate. Thorax not so strongly or closely punctured as the head; the scutellum flat, the postscutellum slightly convex, shining, and sparingly punctured; the metathorax concave-truncate, having a central longitudinal channel; obliquely rugulose in the middle, the sides coarsely rugose. The first segment of the abdomen campanulate, strongly but not very closely punctured, the apical margin rebordered; the second segment very convex, elevated to a subconical shape, finely and not very closely punctured; its apical margin, as well as the following segments, with larger shallow punctures.

*Male.* Length  $5\frac{1}{2}$  lines.—Closely resembling the female; the clypeus more strongly punctured, the terminal hook of the antennæ rufo-piceous; the thorax and abdomen as in the female.

*Hab.* Mountains of Oahu, where it is common.

#### 5. *Odynerus congruus.*

*Female.* Length  $4\frac{3}{4}$  lines.—Black, punctured, and shining; the wings fusco-hyaline, with a dark fuscous stain along the anterior margin of the front pair. The head with distant fine punctures; the clypeus very convex, and with a small truncate projection at its apex; impunctate, or with only a few very fine distant punctures. Thorax smooth and shining above, having only a few very fine shallow punctures; the scutellum slightly convex; the metathorax opaque, oblique, and with shallow rather large indentation; the lateral margins rounded, without any excavation; the claws of the tarsi ferruginous. Abdomen with the first segment campanulate, as long as broad, finely, evenly, but not very closely punctured; the second segment large, impunctate, or with only a few very fine shallow punctures, its apical margin, as well as the following segments, with shallow fine punctures.

*Male.* Smaller than the female, but of the same form and similar sculptured; differs in having at the apex of the clypeus two horizontal pale yellow lines, and also a small ovate yellow spot just above it.

insertion of the antennæ; the terminal hook of the antennæ and claw-joint of the tarsi ferruginous.

*Hab.* Honolulu.

This species is not rare.

#### 6. *Odynerus dubiosus*.

*Male.* Length 4 lines.—Black, with fuscous wings, not very dark, but with bright violet iridescence. Head closely punctured; the clypeus impunctate, or with a few very fine shallow punctures, its apex notched above, giving it the appearance of being bidentate; the terminal hooks of the antennæ pale at their tips. Thorax punctured, but not strongly so; the lateral angles of the prothorax acute; the scutellum and postscutellum only slightly convex and sparingly punctured; the metathorax with confluent rather shallow punctures, concave in the middle, with the sides rounded; the scutellum with a central longitudinal impressed line. Abdomen with the first segment campanulate, as broad as long, and evenly punctured; the second segment large, convex, the sides rounded, impunctate, or with only a few very fine shallow punctures; the following segments with fine shallow punctures, but stronger than those on the second segment.

*Hab.* Honolulu.

#### 7. *Odynerus agilis*.

*Male.* Length  $4\frac{1}{2}$  lines.—Black, with a narrow yellow fascia on the apical margins of the first and second segments. Head very closely punctured; a minute yellow spot between, but a little above, the insertion of the antennæ; the clypeus very convex and bidentate at the apex; the terminal hook of the antennæ obscurely testaceous; the entire insect with a fine cinereous pile, which is most dense on the head and thorax. The scutellum rather convex, and with a central longitudinal impressed line; the metathorax concave-truncate; wings subhyaline, with a fuscous line along the costal and marginal cells; the wings iridescent. Abdomen with the basal segment campanulate and with very shallow punctures; the second segment with very fine shallow punctures; the apical segments with shallow punctures.

*Hab.* Maui.

The Rev. T. Blackburn states that this species is apparently rare. He has not seen the female.

## CRABRONIDÆ.

## CRABRO.

1. *Crabro affinis*.

*Female*. Length  $4\frac{1}{2}$  lines.—Black; the abdomen shining and having two yellow fasciæ, the first interrupted. Head and thorax semi-opaque, the former with the ocelli in a curve on the vertex; the basal half of the mandibles and the scape of the antennæ in front yellow; the clypeus with a longitudinal carina, and thinly covered with silvery pile. The mesothorax with two abbreviated longitudinal ridges on the disk; the scutellum obsoletely bituberculate; the metathorax with a central longitudinal channel; wings subhyaline, the nervures black; the outer margin of the tegulæ flavo-testaceous. Abdomen with a slightly interrupted yellow fasciæ on the basal margin of the second segment, and a narrow uninterrupted one near the basal margin of the fourth; the apical margin of the fifth segment narrowly flavo-testaceous, and fringed with short white pubescence; the sixth segment with a few scattered punctures.

*Hab.* The island of Kauai.

This species was captured very sparingly. It resembles the *vagus* of Europe, and belongs to the same division of the genus having the ocelli in a curve, the *Solemus* of St. Fargeau.

2. *Crabro mandibularis*.

*Female*. Length 5 lines.—Black, and slightly shining; the head and thorax very closely and finely punctured, and having a few yellow markings. The ocelli in a curve on the vertex; the clypeus and anterior margin of the face with bright golden-coloured pubescence; the scape of the antennæ in front and the basal half of the mandibles above yellow; the cheeks with changeable silvery pile. Thorax with a minute spot on the collar laterally, the tubercles and the postscutellum yellow; the wings hyaline, the nervures black; the metathorax with a central longitudinal channel, and a few short carinæ at its extreme base, and without the usual closed semicircular space at its base. Abdomen smooth and shining, the three or four apical segments with short white pubescence; the apical segment with the margins raised, shining, and with few strong punctures.

*Hab.* Coasts of Maui.

Taken on flowers on sandy coasts by the Rev. T. Blackburn.

### 3. *Crabro denticornis*.

*Male*. Length 3-4 lines.—Black; the head and thorax slightly shining, the abdomen smooth and shining. The ocelli in a curve on the vertex; the fifth joint of the flagellum produced beneath into a tooth or tubercle; the clypeus with bright silvery pubescence; the mandibles bidentate at the apex, and having a large acute tooth on their inner margin. The postscutellum yellow, scarcely interrupted in the middle; the scutellum slightly bituberculate; the metathorax with a central longitudinal channel, slightly impressed at the base and deeply so towards the apex; wings fusco-hyaline, palest at their base. Abdomen smooth, shining, and impunctate; occasionally the second segment has a small yellow spot laterally.

*Hab.* Sandy coasts of Maui.

This may possibly be the male of *C. mandibularis*; but the silvery clypeus and dark wings obliged me to hesitate at uniting them.

## LARRIDÆ.

### PISON.

#### 1. *Pison iridipennis*.

*Male*. Length 3 lines.—Black; head and thorax finely and closely punctured and slightly shining; abdomen shining and very delicately punctured. The face with silvery-white pubescence as high as the emargination of the eyes; the palpi rufo-testaceous. The metathorax obliquely and finely striated, having a central longitudinal channel, and with silvery-white pubescence laterally; the wings hyaline and splendidly iridescent, the nervures black; the legs with silvery pile, which is very bright on the posterior tibiae within. The abdomen has at the basal margin of the second segment laterally a little silvery-white pubescence, on the apical margins of the segments laterally a little silvery pile, only observable in certain lights.

*Hab.* Honolulu.

Rare; a single female was taken by Mr. Blackburn, which differs sexually, as in the following species.

#### 2. *Pison hospes*.

*Female*. Length 5½ lines.—Black, shining, with the head and thorax

closely and finely punctured, the abdomen with fasciæ of silvery white pubescence. The face below the antennæ with bright silvery pubescence, also a line on the margin at the inner orbit of the eyes, as high as their emargination; the anterior margin of the clypeus rounded. The hinder margin of the prothorax with a little silvery white pubescence, and also on the sides of the metathorax, which has a deep central longitudinal channel; the wings subhyaline, the nervures black; the legs covered with silvery pile; the calcaria black. Abdomen much more finely and closely punctured than the thorax; the segments slightly constricted; the apical margins of the segments with fasciæ of fine silvery pile, which are very brilliant in certain lights, and which are widened laterally.

*Male.* Only differs in being smaller and in having an additional joint in the antennæ and an extra segment to the abdomen.

*Hab.* Sandwich Islands.

A common but not abundant species; it was taken in the island of Oahu, Kauai, and Maui. Mr. Blackburn says that he has bred this species from the same collection of cells as those which produced species of *Pelopceus* and of *Crabro*. This observation appears to indicate the habit of the genus to be parasitic; but this cannot be the case, their economy having been observed and published by Mr. Horne in the seventh volume of the 'Transactions of the Zoological Society.' The species construct cells of mud, which they provision with spiders, the food of their young brood. The genus *Crabro* usually provisions its cells with Diptera.

## POMPILIDÆ.

### POMPILUS, Schiödte.

#### 1. *Pompilus pilosus*.

*Female.* Length  $6\frac{1}{2}$  lines.—Black; covered, except the three apical segments of the abdomen, with dense ashy pile. The mandibles ferruginous towards the apex; the clypeus widely emarginate; the pile on the flagellum and vertex very thin. The hinder margin of the prothorax angular; the metathorax with a rather broad central longitudinal channel; the wings hyaline, the anterior pair faintly yellow, and fuscous beyond the marginal cell; the nervures; the apical joints of the tarsi testaceous, the anterior pair with long black cilia; the spines on the tibiæ and black, the calcaria pale testaceous.

*Hab.* South Africa.

## 2. *Pompilus ornatipennis*.

*Female*. Length  $5\frac{1}{2}$  lines.—Black, with a changeable grey pile on the face, the sides of the thorax, the legs, and abdomen beneath; on the thorax above, the pile has a slight purple tint, and the basal margins of the segments have a band of grey pile. The anterior margin of the clypeus truncate. The posterior margin of the prothorax rounded; wings subhyaline, and mottled with fuscous clouds; the metathorax somewhat obliquely truncate, its posterior lateral angles with bright silvery pile. Abdomen lanceolate, smooth, and shining.

*Hab.* Central Africa.

## 3. *Pompilus ruficeps*.

*Female*. Length  $7\frac{1}{2}$  lines.—Black, with the head, antennæ, and anterior legs ferruginous, the latter black at their base and apex; wings dark brown, with violet iridescence. The anterior margin of the clypeus truncate, the margin reflexed. The prothorax, the sides of the mesothorax above, and the tegulæ ferruginous; the metathorax with a central longitudinal impressed line and finely transversely striated; the intermediate femora and tibiæ, as well as the posterior tibiæ, more or less ferruginous within. The abdomen with an obscure blue tinge.

*Hab.* Zulu Land.

## 4. *Pompilus subpetiolatus*.

*Female*. Length  $6\frac{1}{2}$  lines.—Ferruginous, with the sides of the thorax, and also beneath, as well as the apical half of the abdomen, black. The anterior margin of the clypeus rounded. The hinder margin of the prothorax subangulated; the metathorax oblong and transversely striated; wings flavo-hyaline to the second submarginal cell, with the nervures pale ferruginous, thence to the apex dark fuscous; the coxæ more or less black beneath. Abdomen with the first segment and base of the second ferruginous, the short petiole black; the extreme apex ferruginous.

*Hab.* The Gambia.

## 5. *Pompilus abdominalis*.

*Female*. Length 9 lines.—Head, antennæ, legs, and thorax ferruginous; abdomen black; wings dark brown and slightly iridescent. The face with short ferruginous pubescence. The hinder margin of the prothorax rounded; the second and third submarginal cells of about equal length; the third narrowed towards the marginal

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cell to about two thirds of its length; the second discoidal cell with a small subhyaline spot at its base; the metathorax with a central longitudinal black channel, and transversely finely striated. The abdomen slightly shining.

*Hab.* Congo.

#### 6. *Pompilus torridus*.

*Female.* Length 8 lines.—Black, with the head, scape of the antennæ, the pro- and mesothorax, as well as the scutellum, obscurely ferruginous; the wings dark fuscous. An impressed line from the anterior ocellus to the antennæ; the clypeus short, somewhat elevated, and truncate anteriorly; the mandibles ferruginous towards their base. The anterior legs dark ferruginous; the intermediate and posterior pairs obscurely so beneath; the third submarginal cell quite as long as the second, and slightly narrower towards the marginal cell; the metathorax with a central longitudinal channel, and finely striated transversely. Abdomen slightly shining, the apical segment covered with light grey pile.

*Hab.* Algeria.

#### 7. *Pompilus fasciatus*.

*Male.* Length  $3\frac{1}{2}$  lines.—Black, with the second segment of the abdomen ferruginous; impunctate. Head truncate behind; the antennæ rather thick and tapering to a point; obscurely fulvous beneath. The hinder margin of the prothorax rounded behind; the metathorax short, truncate, with a central channel above, terminating at the verge of the truncation; wings hyaline, the nervures fuscous. Abdomen slightly shining, the apex pale testaceous.

*Hab.* Algeria.

#### 8. *Pompilus frontalis*.

*Male.* Length 5 lines.—Black, smooth, and slightly shining; the orbits of the eyes, the prothorax above, a spot on the disk of the mesothorax, and the tegulæ orange-red; the front, below the antennæ, with silvery pile. The metathorax truncate, the verge of the truncation with silvery pile; wings fuscous. The basal margins of the second, third, and fourth segments of the abdomen with obscure narrow bands of silvery pile.

*Hab.* Lake Nyassa.

#### 9. *Pompilus candidus*.

*Female.* Length 5 lines.—Black; the head and thorax covered with silvery pubescent pile, which is dense on the face and margins of the prothorax; the posterior tibiæ and femora ferruginous.

apex widely emarginate. The metathorax concavely truncate; wings subhyaline, and, with their apex, dark fuscous beyond the submarginal cells; the nervures black; the base of the posterior femora black. The base of the segments of the abdomen with dense silvery pile.

*Hab.* The Gambia.

#### 10. *Pompilus proximatus*.

*Female.* Length  $7\frac{1}{2}$  lines.—Black, with the two basal segments of the abdomen ferruginous, the wings dark fuscous. The head and thorax with a purple bloom; the clypeus flat, smooth, and shining, and having a few fine scattered punctures; truncate anteriorly, with the angles rounded; its margin in front and laterally slightly raised; the metathorax obtuse, and, as well as the prothorax, with a central longitudinal depression; the third submarginal cell much narrowed towards the marginal. The second segment of the abdomen with the apical margin fuscous.

*Male.* Smaller, more slender, and has the ferruginous colouring of the abdomen extending partly on the third segment; the thorax has a similar purple bloom to that on the female.

*Hab.* Algeria.

This species greatly resembles *Pompilus fuscus*, but the different form of the naked clypeus, and the central longitudinal depression, both on the pro- and metathorax, characterize more than a variety.

#### 11. *Pompilus viridicatus*.

*Female.* Length 9 lines.—Black, and covered with an olive-green pile; wings dark brown, with a violet iridescence. The clypeus slightly emarginate; the antennæ black. The prothorax short, its posterior margin angulated; the third submarginal cell shorter than the second, and much narrower towards the marginal; the metathorax smooth and obtusely truncated, and with a fine narrow channel, not extending to the base nor the apex; the legs with fine slender spines, not thickly set. The abdomen with purple shades in different lights.

*Hab.* West Africa.

#### 12. *Pompilus insidiosus*.

*Female.* Length  $5\frac{1}{4}$  lines.—Black, with a thin grey pile; the wings hyaline, with a dark fuscous border beyond the third submarginal cell. The face with a fine short grey pubescence; the mandibles ferruginous towards their apex, their tips black; the anterior margin of the clypeus rounded. The hinder margin of the prothorax subangulated; the metathorax smooth, and rounded behind;

the anterior tibiæ and tarsi ciliated, the first two joints of the latter ferruginous; the second submarginal cell one third broader than the third, which is narrowed moderately towards the marginal.

*Hab.* Natal.

### 13. *Pompilus vindex*.

*Female.* Length 6 lines.—Black, with the head, antennæ, pro- and mesothorax above, as well as the legs, ferruginous. The hind margin of the prothorax and scutellum, and also the postscutellum pale yellow; wings flavo-hyaline, with their apex beyond the middle of the marginal cell dark fuscous; the metathorax obscurely ferruginous in the middle, and with a central longitudinal channel. The abdomen has, at the basal lateral margin of the second, third, and fourth segments, an oblong transverse macula, pointing within; the apical segment ferruginous.

*Male.* Differs in having the abdomen, femora, and tarsi black.

*Hab.* Sierra Leone.

### 14. *Pompilus iridipennis*.

*Female.* Length 12 lines.—Black; the abdomen blue; wings dark brown-black, with a bright violet iridescence. The clypeus with scattered punctures, its anterior margin rounded. The pro- and mesothorax, as well as the scutellum, with shades of blue and purple; the scutellum compressed; the metathorax rounded behind. Abdomen smooth and shining, with tints of purple and blue.

*Hab.* Sierra Leone.

### 15. *Pompilus crudelis*.

*Female.* Length 11–13 lines.—Black; the antennæ, the clypeus which is smooth and shining, the tibiæ, tarsi, and tips of the femora ferruginous; wings dark brown and with a violet iridescence. The mandibles towards their base ferruginous; the anterior margin of the clypeus rounded. The posterior margin of the prothorax subangulated; the metathorax with a longitudinal channel that terminates at the verge of the truncation, and is also transversely striated, strongly so towards and on the truncation. The entire insect opaque, being covered with a very short velvety pubescence.

*Hab.* South Africa.

### 16. *Pompilus hilaris*.

*Female.* Length 10 lines.—Black; the mandibles, palpi, antennæ, tibiæ, tarsi, and tips of the femora ferruginous; wings fulvous.

their apical margins fuscous, the nervures ferruginous. The tips of the mandibles black. The metathorax transversely striated; the posterior margin of the prothorax rounded. Abdomen smooth and shining, the apex ferruginous.

*Note.* Exactly resembles the female, but varies in length from 6 to 9 lines.

*Hab.* Zulu and Natal.

#### 17. *Pompilus sepulchralis*.

*Female.* Length  $11\frac{1}{2}$  lines.—Black; the abdomen with a green tinge beyond the basal segment; antennæ, except the scape and the base of the following segment, fulvous; wings brown-black, with bright violet iridescence. The anterior margin of the clypeus rounded. The pro- and mesothorax obscurely bluish green; the hinder margin of the prothorax angulated; the third submarginal cell not quite so wide as the second, and slightly narrowed towards the marginal; the second transverse median nervure much bent inwardly; the first recurrent nervure entering the second submarginal cell near its apex. The anterior tibiæ and tarsi ciliated; all the spines and calcaria black.

*Note.* Only differs in being smaller, and in having the flagellum entirely fulvous and the clypeus obscurely ferruginous.

*Hab.* Natal.

#### 18. *Pompilus fervidus*.

*Female.* Length 5–6 lines.—Ferruginous, with black and white markings; wings hyaline, with their apex dark fuscous. Head with a narrow yellowish-white line behind the eyes in some examples. The metathorax above and three spots on the mesothorax anteriorly black; a whitish fascia on the hinder margin of the prothorax; the pectus black. Abdomen with a narrow whitish fascia at the basal margins of the second and third segments; the apical segment white above. The entire insect with a thin pale silky pile.

*Note.* Closely resembles the female, but has the front above the antennæ black; the base of the abdomen is also black.

*Hab.* Natal.

#### 19. *Pompilus frustratus*.

*Female.* Length 6 lines.—Black; the thorax and abdomen with a faint purple bloom; wings dark fuscous, the legs ferruginous. The mandibles ferruginous towards the apex, their tips black; the anterior margin of the clypeus slightly rounded; a faintly im-

pressed line from the anterior ocellus to the antennæ. The dark wings with a violet iridescence; the hinder margin of the prothorax concavo-truncate, the margin of the truncation slightly emarginated in the middle; the third submarginal cell much narrower towards the marginal; the coxæ, trochanters, and the basal half of the femora black, the spines on the legs and calcaria ferruginous. The extreme apex of the abdomen ferruginous.

*Hab.* Natal.

#### 20. *Pompilus clotho*.

*Female.* Length 7 lines.—Black; the abdomen with an obscure blue tinge; the wings dark brown, with a violet iridescence. The hinder margin of the prothorax rounded; the second and third submarginal cells of equal length, the third much narrower towards the marginal; the metathorax smooth and concavo-truncate. The abdomen very smooth and slightly shining.

*Hab.* Sumatra.

The three species, *P. atropos*, *P. lachesis*, and *P. clotho*, all from Sumatra, have a close general resemblance, and are nearly all of the same size; the last can at once be distinguished by its truncate metathorax; *P. atropos* is distinguished from *P. lachesis* by its abdominal fasciæ and by its obliquely-quadrate second submarginal cell.

#### 21. *Pompilus lachesis*.

*Female.* Length  $6\frac{1}{2}$  lines.—Black, and with a slight purple bloom in certain lights. The anterior margin of the clypeus rounded. The hinder margin of the prothorax subangular; the wings tenebrous; the second and third submarginal cells of about equal length, the second oblong, the third narrowed towards the marginal; the metathorax smooth and rounded. The abdomen smooth and slightly shining; the apical segment with cinereous pile, observed in certain lights.

*Male.* With a similar bloom to that of the female; the face below the antennæ covered with silvery pile; the colour of the wings and venuration is the same as that of the other sex, the hinder wings being also paler than the anterior ones.

*Hab.* Sumatra.

#### 22. *Pompilus atropos*.

*Female.* Length 7 lines.—Black, with a thin cinereous pile on the basal margins of the segments of the abdomen with indistinct cinereous fasciæ; on the face the pile is bright and silvery, and also on the sides of the thorax, the coxæ, and femora beneath.

certain lights. The hinder margin of the prothorax angulated and with a fascia of bright pile; wings dark brown, and with violet iridescence; the third submarginal cell longer than the second, and much narrowed towards the marginal; the second subquadrate; the tibiæ and tarsi rather strongly spinose. The obscure fasciæ on the second segment of the abdomen much broader than those on the other segments.

*Hab.* Sumatra.

### 23. *Pompilus familiaris*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black, with the first and second segments of the abdomen and the base of the third ferruginous. The mandibles ferruginous in the middle; the anterior margin of the clypeus rounded. The wings fusco-hyaline, their apical margins bordered with darker fuscous; the third submarginal cell petiolated; the metathorax smooth, and having a slight purple pile, and gradually rounded from base to apex. Abdomen smooth and shining.

*Hab.* Sumatra.

### 24. *Pompilus pruinosis*.

*Female.* Length 5 lines.—Black, with the head, thorax, antennæ, and legs densely covered with frosted silvery pile; the basal segment of the abdomen covered with similar pile, and the apical margins of the following segments with broad bands of the same. The wings hyaline; the apex of the anterior pair beyond the marginal cell dark fuscous; the metathorax gradually declivous from the base to the apex.

*Hab.* India.

### 25. *Pompilus capitosus*.

*Female.* Length  $4\frac{1}{2}$  lines.—Black; the head wider than the thorax; wings hyaline, the anterior pair with a dark fuscous cloud beyond the middle of the marginal cell; the posterior tibiæ bright ferruginous. A pale yellow line at the inner margin of the eyes, and a broader one on the margin of the clypeus; the mandibles yellow in the middle. Thorax with a narrow white line on the hinder margin of the prothorax, and a short transverse one on the mesothorax, at the margin of the scutellum; also a pale spot on the tegulæ; the metathorax with a little white pubescence at its apex. Abdomen with a triangular white macula at the lateral basal margin of the second segment.

*Hab.* Burmah.

### 26. *Pompilus pullatus*.

*Male.* Length  $6\frac{1}{2}$  lines.—Opaque black, with a slight purple tinge

in certain lights. The clypeus with changeable silvery pile, the anterior margin rounded. The hinder margin of the prothorax rounded; the metathorax truncate; wings fuscous, and with slight violet iridescence, their apex with a darker border beyond the enclosed cells; the third submarginal cell petiolated; the posterior tibiæ bright ferruginous.

*Hab.* Trebizond.

#### 27. *Pompilus mitis*.

*Female.* Length 4 lines.—Head, thorax, and coxæ black; legs and abdomen ferruginous. The mandibles, clypeus, and a line at the inner orbits of the eyes white; the scape white beneath, the tegellum ferruginous beneath. The posterior margin of the prothorax and the tubercles white; the sides of the thorax, the pectus, coxæ, and femora beneath with silvery pile, bright only in certain lights; wings hyaline, with a broad fuscous cloud crossing the anterior pair beyond the stigma, leaving the tip of the wings white. Abdomen smooth and shining, the extreme base black.

*Hab.* Bombay district.

#### 28. *Pompilus ephippiatus*.

*Female.* Length 5 lines.—Black, with the pro- and mesothorax and scutellum ferruginous; wings fusco-hyaline, the hinder pair pale, the anterior pair bordered with dark fuscous beyond the marginal cell. The clypeus with silvery pile; a narrow pale line at the inner orbits of the eyes, also an abbreviated one behind them, the margin of the vertex ferruginous. The metathorax, the sides beneath, and also the legs with a changeable silvery pile. The apical margin of the abdominal segments with narrow fasciæ of silvery pile, which on the second, third, and fourth segments produced into an angular shape in the middle.

*Hab.* Bombay Presidency.

#### 29. *Pompilus multipictus*.

*Male.* Length  $6\frac{1}{2}$  lines.—Variegated with black, yellow, and ferruginous. Head black on the vertex, and with a broad stripe down to the antennæ; the face otherwise yellow, as well as the mandibles and a broad line behind the eyes; the antennæ ferruginous with the scape yellow in front. The prothorax, mesothorax, and pectus black; the metathorax and legs ferruginous; the hind and lateral margins of the prothorax broadly yellow; a bifurcated mark on the mesothorax, the tegulæ, and a narrow line over the scutellum, anterior and intermediate coxæ beneath, as well as the tarsi and anterior tibiæ in front and the posterior pair at

yellow; wings flavo-hyaline, with the apex of the anterior pair dark fuscous, the nervures ferruginous; the tips of the joints of the tarsi and of the posterior tibiæ dark fusco-ferruginous. Abdomen ferruginous, with a yellow fascia at the basal margin of each segment; one or two of the apical fasciæ slightly interrupted or emarginate, the fasciæ more or less bordered with black or dark fuscous; beneath, the second, third, and fourth segments with broad yellow fasciæ.

*Hab.* Bombay.

This species strongly resembles various species of wasps included in the genus *Polistes*.

### 30. *Pompilus decoratus*.

*Female.* Length  $6\frac{1}{2}$  lines.—Black, adorned with white and pale blue pile; the head, thorax, and abdomen with white lines and spots. The front, below the antennæ, with bright silvery-white pile; the orbits of the eyes with a narrow white line, that is interrupted at their summit. The prothorax, and the metathorax at its base and apex laterally, with pale blue pubescent pile; the legs have a fine silvery pile; the posterior margin of the prothorax, a small transverse spot on the mesothorax at the base of the scutellum, a spot at the base of the anterior wings, and another at the base of the posterior tibiæ, white or very pale yellow; wings hyaline, with the tips of the anterior pair beyond the third submarginal cell dark fuscous; the tibiæ and tarsi spinose. The abdomen rather longer than the head and thorax; the second and third segments with a transverse ovate white macula laterally towards their basal margins, and a white fascia at the base of the fifth.

*Hab.* Bombay.

### 31. *Pompilus simillimus*.

*Female.* Length  $6\frac{1}{4}$  lines.—Black, and variegated with grey pile; wings fuscous, the anterior pair darker at their apex beyond the third submarginal cell. The anterior margin of the clypeus truncate; the face with changeable grey pile. The prothorax, sides of the mesothorax, the metathorax, and the scutellum with grey pile, brighter in certain lights; the legs pilose, most densely so on the coxæ and femora beneath. The basal margins of the segments of the abdomen with fasciæ of grey pile.

*Hab.* Calcutta.

This species is very like *P. canifrons* from Sumatra, but its metathorax is different in form, being squarer posteriorly, the apical angles being somewhat produced; the venuration of the anterior



wings is also different, the third submarginal cell being more angular, and receiving the recurrent nervure nearer to its base.

### 32. *Pompilus alienus*.

*Female*. Length  $6\frac{1}{4}$  lines.—Black, opaque, and having more or less of purple bloom in certain lights; wings fuscous, the posterior palest towards their base; the third submarginal cell petiolate. The clypeus and lower portion of the face covered with bright silvery pile. The anterior angles of the prothorax, the sides beneath, and the coxæ and femora beneath pilose, very bright in certain lights; the metathorax truncate. Abdomen with somewhat obscure cinereous fasciæ at the base of the first, second, and third segments.

*Hab.* Japan.

### 33. *Pompilus propinquus*.

*Female*. Length  $5\frac{1}{2}$  lines.—Black; the wings dark brown, the abdomen with ferruginous markings. Head thinly sprinkled with black hairs; the anterior margin of the clypeus rounded. The posterior margin of the prothorax subangulated; the metathorax smooth, convex, and truncated, and with a slightly impressed longitudinal line; the third submarginal cell triangular; the posterior femora ferruginous, with the base and apex black. A broad interrupted ferruginous band on the basal segment of the abdomen, narrowed inwardly; the second segment ferruginous, the apical margin black, the black band widens in the middle; the third segment has two large transverse lunate spots at its base; beneath black.

*Hab.* North Japan.

This species is the representative of the *Pompilus fuscus* of Europe.

### 34. *Pompilus elegans*.

*Female*. Length  $9\frac{1}{2}$  lines.—Head and thorax black, abdomen ferruginous; wings subhyaline, the apical margin of the anterior bordered with fuscous beyond the marginal cell. The anterior margin of the clypeus emarginate, with a broad fascia of bright silvery pile, which is continued up the inner orbits of the eyes a little higher than the insertion of the antennæ; the surface beneath the pile is ferruginous, and this colour is continued round the orbits of the eyes; there is a similar ferruginous fascia on the hind margin of the prothorax. The metathorax with bright silvery pile, as well as the sides, beneath, and the coxæ and femora beneath a deep longitudinal central channel on the metathorax, and a

one at its base on each side; the legs fusco-ferruginous, with the posterior femora bright ferruginous.

*Hab.* India.

### 35. *Pompilus cæruleus*.

*Female.* Length 4 lines.—Dark shining blue and impunctate. The clypeus rounded anteriorly; the tips of the mandibles ferruginous. The metathorax with a prominent tubercle laterally at the middle of the margin; the anterior wings fuscous, the posterior pair hyaline; the second submarginal cell small, narrowed to a point towards the marginal; the third submarginal narrowed moderately. Abdomen smooth and shining. The entire insect with bright violet tints in certain lights.

*Hab.* New Hebrides, Fiji Islands or Solomon Islands. Obtained on the voyage of the 'Herald.'

### 36. *Pompilus fulvipennis*.

*Female.* Length 6 lines.—Black, smooth, and shining; the wings fulvous, the nervures pale ferruginous; the tips of the anterior wings fuscous. The posterior margin of the prothorax rounded; the metathorax truncate and opaque; the anterior tarsi obscurely ferruginous. The abdomen smooth and impunctate.

*Male.* Closely resembles the female, but is smaller, and has the lateral margins of the labrum and clypeus, and also a small triangular spot above the clypeus, yellow. The thorax thinly sprinkled with cinereous pubescence; the metathorax obliquely truncate; the third submarginal cell wider than the second in both sexes, and moderately narrowed towards the marginal; the anterior tibiae, tarsi, and tips of the femora pale ferruginous; the intermediate and posterior calcaria white.

*Hab.* South Australia.

### 37. *Pompilus labilis*.

*Female.* Length  $5\frac{1}{4}$  lines.—Black: the head and prothorax anteriorly covered with white pubescence; the abdomen with three white fasciæ; the wings fuscous. A narrow space across the vertex, enclosing the ocelli, and also a longitudinal space in the middle of the clypeus naked. The metathorax concavo-truncate: wings dark fuscous, the third submarginal cell subangular. The apical margins of the first, second, and third segments of the abdomen with a broad fascia of fine white pubescence, the fascia with a small rounded emargination in the middle of its anterior margin.

*Hab.* Queensland.

38. *Pompilus consimilis*.

*Female*. Length  $5\frac{3}{4}$  lines.—Black; the front, from the antennæ to the anterior ocellus, the vertex behind the ocelli, and the prothorax with pale orange-coloured pubescence; the wings fuscous. The clypeus with silvery pile, its anterior margin rounded; the cheeks with white pile. The metathorax concavo-truncate, smooth and semiopaque; a pale pubescent spot at the lateral basal angles of the scutellum; the third submarginal cell subtriangular; the spines and the calcaria on the tibiæ and tarsi black. Abdomen with small white pubescent spot near the basal margins of the second and third segments.

*Hab.* Queensland.

39. *Pompilus nubilipennis*.

*Male*. Length  $6\frac{3}{4}$  lines.—Black; the antennæ thick and tapering to a point; wings clouded. The head and thorax with thin hoary pubescence; a cream-coloured line at the inner orbits of the eyes, and a spot at the base of the clypeus laterally. The hinder margin of the prothorax angular, and narrowly cream-coloured; the metathorax opaque, rounded, and with a slight central channel at the base, also thinly covered with hoary pubescence; the legs with short spines; the calcaria white, also a white line at the base of the posterior tibiæ; wings subhyaline, with fuscous clouds along the course of the nervures; also a cloud occupying the marginal cell and crossing the second and third submarginals; the apex of the anterior wing clouded. A white lunular spot at the base of the third segment of the abdomen laterally.

*Hab.* Adelaide.

40. *Pompilus sanguinolentus*.

*Female*. Length  $5\frac{1}{4}$  lines.—Black, with the pro- and mesothorax, scutellum, and postscutellum blood-red. The front below the antennæ with changeable silvery pile; the head and thorax with thin cream-fuscous pubescence. The metathorax opaque, and transversely rugose towards the apex; wings hyaline, with a transverse fuscous cloud at the base of the first submarginal cell, which crosses the anterior wings, the entire apex of the wings being fuscous beyond the base of the marginal cell. The abdomen with a thin series of silvery pile, which is most dense at the sides.

*Hab.* Swan River.

41. *Pompilus papuensis*.

*Female*. Length  $4\frac{3}{4}$  lines.—Black; the front, below the antennæ

with silvery-white pile; the anterior margin of the clypeus and the orbits of the eyes, except their summit, with a narrow yellowish-white line. The hind margin of the prothorax, a line on the mesothorax, at the base of the scutellum, and a spot on the tegulae whitish; the apex of the metathorax and the coxae outside with silvery pile; the posterior tibiae with their apex ferruginous within; the wings hyaline, with a fuscous cloud crossing the anterior pair at the base of the first submarginal cell, the fascia as wide as the first discoidal cell; the apex of the wings fuscous beyond the third submarginal cell. Abdomen with the first segment covered with silvery pile; a slightly interrupted narrow pale yellow fascia at the basal margin of the third segment, and another at the base of the fifth.

*Hab.* New Guinea.

#### 42. *Pompilus latus*.

*Female.* Length 9–11 lines.—Ferruginous, with black markings and fulvous wings. Head with a small ovate black spot between the eyes and the ocelli; three or four of the apical joints of the antennae black, and also tips of the mandibles; the anterior margin of the clypeus emarginate. Thorax with the sides and beneath, the anterior coxae behind, and the intermediate and posterior pairs entirely, black; the metathorax concave at the apex; wings fulvous, the nervures ferruginous. The apical margins of the first and second segments black; sometimes the third narrowly so.

*Hab.* Uruguay.

#### 43. *Pompilus tuberculatus*.

*Female.* Length  $7\frac{1}{2}$  lines.—Ferruginous; wings flavo-hyaline, the anterior pair with two narrow fuscous fasciae. The antennae fuscous towards the apex; the clypeus somewhat produced, truncate anteriorly, with the lateral angles rounded. The hinder margin of the prothorax rounded; the metathorax with two tubercles at each lateral margin, beyond the second the metathorax is obliquely truncate; a pale fuscous fascia crosses the anterior wings, traversing the nervure at the base of the first submarginal cell; a second narrow fascia crosses from the middle of the marginal cell; the third submarginal longer than the second, and narrowed to about half its length towards the marginal; legs ferruginous, with ferruginous spines. Abdomen with the apical margins of the first, second, and sometimes of the third segment black.

*Hab.* Mendoza.

#### 44. *Pompilus rubricatus*.

*Male.* Length 6 lines.—Ferruginous; the wings flavo hyaline.

Four or five of the apical joints of the flagellum fuscous; the anterior margin of the clypeus rounded; a black stripe running from each antenna up to the ocelli. The anterior wings with fuscous cloud at the lower margin of the second submarginal cell, the apical margin fuscous at the tip; the posterior wings have a pale fuscous apical border; one or two of the apical joints of the tarsi of the intermediate and posterior legs fuscous. The apical margins of the segments of the abdomen narrowly black, at the extreme base of the abdomen black; the fasciæ on the second, third, and fourth segments produced into an angular shape in the middle.

*Hab.* Peru.

#### 45. *Pompilus inauratus*.

*Female.* Length  $6\frac{1}{4}$  lines.—Black, with thin cinereous pile on the legs and abdomen; the head and thorax adorned with bright golden pilose spots. The face with a pale golden spot on each side above the antennæ; the anterior margin of the clypeus silvery; behind the eyes pale golden. The prothorax golden anteriorly, its hinder margin broadly yellowish white; the metathorax with the posterior margin golden before the scutellum, the apex of the latter, and a band between the posterior wings enclosing the postscutellum, and also the metathorax laterally, golden; an oblique golden spot beneath the wings, which are dark fuscous.

*Hab.* Cordova (Argentine Confederation).

#### 46. *Pompilus representans*.

*Female.* Length 7–9 lines.—Black, with dark brown wings, and abdomen with large ferruginous spots. The front of the head below the antennæ with short white pubescence; down the middle of the clypeus it is fuscous; the anterior margin of the clypeus emarginate. The hind margin of the prothorax angular; the metathorax rounded, and with a central longitudinal channel; the third submarginal cell nearly as long as the second, and greatly narrowed towards the marginal. The first, second, and third segments of the abdomen with a large ferruginous macula at the basal margins, lunate, and more than half the width of the segments; two smaller spots on the fourth segment; the spots on the basal segment united.

*Hab.* Uruguay.

This species has the appearance of being a gigantic race of *Pompilus fuscus* of Europe, with black wings.

#### 47. *Pompilus unicolor*.

*Female.* Length  $5\frac{1}{4}$  lines.—Black, smooth, and slightly shining.

with a faint purple or blue tinge on the abdomen in certain lights; wings dark fuscous, with a violet iridescence. The anterior margin of the clypeus widely emarginate anteriorly, the face on each side with changeable silvery pile. The hind margin of the prothorax subangular; the metathorax with a slight central channel, which terminates in a small fossulet at the apex, the fossulet with a few transverse carinæ; the third submarginal cell smaller than the second, and much narrowed towards the marginal. Abdomen longer than the head and thorax, and tapering to a point at the apex; the base of the segments with a little cinereous pile.

*Male.* Closely resembles the female, but has the apical segment of the abdomen white.

*Hab.* Guatemala, 5000 feet; Guyaquil.

The pile at the base of the segments is usually more or less obliterated.

#### 48. *Pompilus coruscus*.

*Female.* Length  $5\frac{1}{2}$  lines.—Head and thorax black, abdomen ferruginous; covered with a fine silvery pile, most thinly so on the abdomen. The front of the head, below the antennæ, with bright glittering pile; on the vertex it is thin, and intermixed with scattered erect black hairs. Thorax with the hind margin of the vertex with a border of dense white pile; on each side of the scutellum to the wings, and also on the sides of the metathorax and on the coxæ, the silvery pile is glittering and dense; wings hyaline, the nervures black; the apex of the anterior wings fuscous beyond the third submarginal cell; the metathorax with a central longitudinal channel, not quite extending to the apex. Abdomen impunctate.

*Hab.* Guatemala, Chinantla, 4100 feet.

#### 49. *Pompilus imperialis*.

*Male.* Length  $5\frac{1}{2}$  lines.—Bright shining blue, with purple shades; wings dark fuscous, with a brilliant iridescence of violet and coppery lustre. The face, not the clypeus, with silvery-white pile; the antennæ black. The hinder margin of the prothorax rounded; the metathorax with the apex slightly concave; the second submarginal cell subquadrate, the third much narrowed towards the marginal. The abdomen smooth and shining.

*Hab.* Costa Rica, Cache.

#### 50. *Pompilus virulentus*.

*Female.* Length 9 lines.—Ferruginous, not very brightly so, with

a few black markings; wings fusco-hyaline, with a bright violet iridescence, the nervures black. The eyes and seven or eight of the apical joints of the antennæ black; the anterior margin of the clypeus slightly emarginate. The hinder margin of the prothorax rounded; the metathorax short, concavo-truncate, the lateral angles of the truncation produced, subtuberculate; the middle of the metathorax black; the sutures at the sides narrow and black. The apical margins of the two basal segments of the abdomen black.

*Hab.* Costa Rica, Irazu, 6000–7000 feet.

#### 51. *Pompilus flavopictus*.

*Female.* Length 6 lines.—Variegated with black and yellow; the wings fulvo-hyaline, the nervures ferruginous. The black markings on the head are a narrow transverse line at the base of the clypeus, a broader one from each antenna passing upwards and uniting with a transverse line between the eyes, and the back part of the head, leaving a broad yellow stripe behind the eyes; the tips of the mandibles are black, and also the scape above and the base of the antennæ, beyond which the flagellum is fulvous, with four or five of the apical joints slightly fuscous. The mesothorax with three broad black longitudinal stripes; the scutellum in the middle a longitudinal line in the middle of the metathorax, and also an interrupted line at the sides black; the sutures at the sides, and a line on the coxæ and femora above, black. The apical margins of the first and second segments of the abdomen black; the following segments are obscure, the third being palest at its basal and apical margins, the basal having a changeable white pile.

*Male.* Resembles the female, but is smaller ( $3\frac{1}{2}$  lines), and has the abdomen bright yellow, with broad black fasciæ on the apical margins of the three basal segments; on the two following the bands are fuscous and narrow; on the apical segments the fasciæ are obsolete.

Having only seen a single specimen of the female, it is impossible to determine whether the yellow colouring of the abdomen is even bright on the apical segments, but it most probably is so.

*Hab.* Costa Rica, Cache.

#### PEPSIS, Fabr.

##### 1. *Pepsis solitarius*.

*Male.* Length  $8\frac{3}{4}$  lines.—Dark green, the abdomen brightest; the antennæ black, the latter with the four apical joints yellow. The mandibles and palpi black. The wings dark brown, with violet iridescence; the metathorax transversely striated; the

abdomen subpetiolate, the first segment being gradually widened from the base.

*Hab.* Costa Rica, Irazu.

## 2. *Pepsis optimus*.

*Female.* Length 21 lines.—Blue-black, brightest on the abdomen, which is adorned with violet and purple tints. The anterior margin of the clypeus widely, but slightly emarginate; the scape and the first joint of the flagellum and the base of the second black, the rest of the joints bright yellow; the head thinly sprinkled with black hairs. The thorax velvety; the metathorax with a central longitudinal channel, and at its base a few transverse carinae, there are also a few at the sides near the verge of the truncation; wings ferruginous, blackish at the extreme base of the anterior pair, their apical margins not clouded; the nervures, except the costal and the others towards the base of the wings, ferruginous; legs of a purple-blue and thickly spinose.

*Male.* Length 13 lines.—Of the same colour as the female, but has the flagellum of the antennae of a reddish yellow; it has also a small subhyaline spot at the base of the second discoidal cell, and the extreme apex of the anterior wings is narrowly subhyaline.

*Hab.* Costa Rica, Irazu, 6000–7000 feet, and river Susio.

This appears to be an undescribed species. It is most nearly allied to *P. montezuma*, but is at once distinguished by the yellow antennae in both sexes, and by the wings not having a fuscous margin or broad black basal one.

## PRIOCNEMIS, Dahlb.

### 1. *Priocnemis lævis*.

*Female.* Length  $8\frac{1}{2}$  lines.—Black; the head and thorax opaque, the abdomen impunctate, smooth and shining; wings flavo-hyaline, the nervures ferruginous. The front below the antennae and the cheeks with short downy golden pubescence, the latter have also a thin long fulvous pubescence; the mandibles pale testaceous, with their base and apex black; antennae black. Thorax with the sides, beneath, the coxae, and femora with golden downy pile; the tibiae, tarsi, and tips of the femora ferruginous, more or less fuscous above; the metathorax smooth, the sides and apex (and probably in some specimens entirely) clothed with golden-coloured pile. The apical segment of the abdomen with short rufo-fuscous pubescence; beneath, the apical margins of the third, fourth, and fifth segments are narrowly rufo-testaceous.

*Hab.* Costa Rica, Irazu. 6000–7000 feet.



## THYNNIDÆ, Erichson.

### THYNNUS.

Thynnus, *Fabr. Syst. Ent.* 360 (males only).  
 Myrmecodes, *Latr. Nouv. Dict. d'Hist. Nat.* xx. 2nd ed. (females).  
 Thynnoides, *Guér. Voy. Cog. Zool.* ii. 232.  
 Agriomyia, *Guér. Voy. Cog. Zool.* ii. 218.  
 Catocheilus, *Guér. Mag. de Zool.* (1842).

#### 1. *Thynnus penetratus*.

*Male*. Length  $3\frac{3}{4}$  lines.—Black; the thorax and abdomen with white maculæ, the legs ferruginous. The anterior margin of the clypeus, a narrow line up the inner margin of the eyes as high as the antennæ, a spot above each of the latter, and a spot at the base of the mandibles white; two small obscure rufous spots at the margin of the vertex. The margins of the prothorax, the tegulæ, an abbreviated narrow line on the mesothorax, and a similar line on the scutellum yellowish white; wings hyaline and iridescent, the nervures ferruginous; the coxæ and trochanters black. The basal segment of the abdomen with a central longitudinal impression; the first and three following segments with an oblique short narrow white line at their extreme lateral margin beneath, smooth and shining, the second, third, and fourth segments with a minute white spot laterally.

*Hab.* Hunter River.

#### 2. *Thynnus vastator*.

*Male*. Length 9 lines.—Head, thorax, legs, and extreme base of the abdomen black; the rest of the abdomen ferruginous. The head and thorax with hoary pubescence, thin above, but much more dense on the sides and beneath, and longest on the mesothorax and extreme base of the abdomen; the clypeus, inner orbit of the eyes as high as the antennæ, and the mandibles yellow; the outer margin of the tegulæ yellow; wings subhyaline, a fuscous cloud in the marginal cell; the anterior femora and tarsi pale ferruginous beneath. Abdomen not very closely or strongly punctured, the apical segment rugose; the apical ventral segment triangular, and with a curved spine at the apex.

*Female*. Length 5 lines.—Black; the base of the mandible, flagellum, apex of the scape, and the head anteriorly pale.

testaceous; the legs dark rufo-piceous, with the anterior and intermediate tarsi pale testaceous; the second segment of the abdomen transversely striated, with the margins rufo-piceous.

*Hab.* Adelaide.

### 3. *Thynnus rufopictus*.

*Male.* Length 5 lines.—Ferruginous; the head, thorax, and abdomen with black markings. Head black above between the eyes, the posterior margin of the vertex ferruginous; three or four of the apical joints of the antennæ black. Thorax beneath, the anterior portion, or neck, of the prothorax, and the mesothorax black; a spot on the disk of the mesothorax ferruginous; the scutellum and postscutellum ferruginous, on each side of them it is black; the metathorax ferruginous; wings hyaline, the nervures ferruginous as well as the tegulæ. The fifth and sixth segments of the abdomen black.

*Hab.* Adelaide.

### 4. *Thynnus protervus*.

*Male.* Length  $8\frac{1}{2}$  lines.—Black; the mandibles and the anterior margin of the clypeus yellow, the tips of the former black. The head, thorax, and legs with hoary pubescence, which is longest and most dense on the metathorax and on the sides beneath the wings; the legs ferruginous, with the coxæ, trochanters, and the femora above more or less black; wings subhyaline, with the nervures obscure ferruginous. Abdomen oblong, shining, the apical margins of the segments finely and distantly punctured; above thinly sprinkled with short hoary pubescence; beneath it is longer and much more dense; the apical ventral segment triangular, the basal angles acute, the apical one terminating in a short spine.

*Hab.* Adelaide.

### 5. *Thynnus decoratus*.

*Male.* Length  $3\frac{1}{2}$  lines.—Head and thorax black; legs and abdomen ferruginous, and decorated with white lines and spots. The mandibles, the clypeus anteriorly, a V-shaped spot between the antennæ and the orbits of the eyes, slightly interrupted above, white. The margins of the prothorax, an abbreviated line on the disk of the mesothorax, the hinder margin of the scutellum, the postscutellum, the tegulæ, and the posterior angles of the metathorax, white; wings hyaline and iridescent; the anterior coxæ, a spot on the other pairs, and two large irregular-shaped maculæ beneath the wings, white; the intermediate and posterior tarsi fuscous. Abdomen with the basal segment black, the segments with an oblique lateral white macula; beneath immaculate.

*Hab.* Adelaide.

6. *Thynnus fulvopilosus*.

*Male*. Length  $5\frac{3}{4}$  lines.—Black; the vertex and thorax above with thin fulvous pubescence; the face with griseous pubescence. Thorax closely punctured; wings hyaline and iridescent; the anterior legs and the intermediate and posterior tibiæ and tarsi ferruginous; the anterior coxæ and trochanters black. Abdomen subpetiolate, smooth, shining, and impunctate; beneath, the apical margins of the segments with narrow white interrupted fasciæ.

*Female*. Black; the articulations of the legs and the tarsi pale ferruginous; the abdomen is ferruginous at the base above, and strongly transversely grooved; the abdomen is opaque black, except the apical segment, which is smooth and shining.

*Hab.* Adelaide.

7. *Thynnus multipictus*.

*Male*. Length  $5\frac{1}{4}$  lines.—Black, with the legs and the second and third segments of the abdomen ferruginous. The mandibles, clypeus, the orbits of the eyes (interrupted above), and a spot over each antenna, yellow; two somewhat obscure ferruginous spots on the vertex. The margins of the prothorax, the tegulæ, a longitudinal line on the mesothorax and scutellum, the postscutellum, the posterior lateral angles of the metathorax, and three oblique spots beneath the wings, yellow; wings hyaline and iridescent; the nervures ferruginous. The second, third, and fourth segments of the abdomen with a short, somewhat oblique, yellowish-white spot at their extreme lateral margins; a very narrow line from each spot curves inwardly; the abdomen shining and impunctate; beneath three or four of the segments have a minute lateral spot.

*Hab.* Adelaide.

8. *Thynnus propinquus*.

*Male*. Length 6 lines.—Black; the head and thorax with white markings, those on the abdomen forming interrupted fasciæ. A small spot at the base of the clypeus, its anterior margin, an abbreviated line at the lower margin of the eyes, a similar line on the sides of the clypeus, an oblong spot in its centre, and a small one above each antenna, white. Thorax closely punctured; the anterior elevated margin of the prothorax, its posterior margin narrowly, the tegulæ, a longitudinal line on the scutellum, the posterior margin with a narrow line, which is continued to the posterior wings, white; wings hyaline, the nervures fuscous. Abdomen shining and impunctate; the second, third, and fourth segments with interrupted white fasciæ, the fasciæ being widest towards the lateral margins; two minute spots on the basal segment and four on the fifth segment, placed transverse

beneath, the basal segment with a small white tubercle; the second segment with two large spots and two smaller lateral spots, all being more or less united; the third and fourth segments have each four separated spots.

This species is very like *Thynnus strenuus*, but its markings are white and different, and its legs are black.

*Hab.* Adelaide.

#### 9. *Thynnus tuberculifrons*.

*Male.* Length 7 lines.—Black, with the mandibles, clypeus, and inner orbits of the eyes, as high as the antennæ, yellow; between the antennæ there is a blunt tubercle, which a yellow carina unites with the clypeus. Thorax closely punctured, the metathorax finely so, and with a thin hoary pubescence; wings hyaline, the nervures black; the tips of the joints of the tarsi ferruginous beneath. Abdomen oblong, narrow, smooth, and shining, with fine distant shallow punctures; the margins of the segments depressed; the apical segment strongly punctured.

*Hab.* Swan River.

#### 10. *Thynnus suspiciosus*.

*Male.* Length  $7\frac{1}{2}$  lines.—Black; head and thorax with yellowish-white markings, abdomen with subovate maculæ on the segments above and beneath. The mandibles, clypeus, the inner margin of the eyes a little higher than the insertion of the antennæ, two small ovate spots between them, and an interrupted line behind the eyes yellowish white. The anterior and posterior margins of the prothorax, the tegulæ, a spot on the scutellum, the post-scutellum, the lateral margins of the metathorax, and an oblong spot in the middle pale yellow; wings subhyaline, the nervures obscure fusco-ferruginous. The basal and four following segments of the abdomen with large subovate, lateral, pale yellow maculæ, those on the basal segment almost confluent; the sixth segment with a minute lateral spot; beneath, the second to fourth segments with ovate lateral maculæ.

*Hab.* Swan River.

#### 11. *Thynnus vividus*.

*Male.* Length  $5\frac{1}{2}$ –6 lines.—Black; the head and thorax with yellow spots, the abdomen with yellow fasciæ. The clypeus, two minute spots between the antennæ, and the base of the mandibles yellow; the latter ferruginous towards the apex. The anterior elevated margin of the prothorax, its posterior margin very narrowly, more or less interrupted in the middle, a large subquadrate spot

beneath the wings, the tegulae, the scutellum, postscutellum, and the metathorax laterally at its apex, yellow; the wings hyaline, the nervures black; the legs ferruginous, the coxae black. Abdomen shining; the apical margins of the segments depressed; the first and fifth segments with narrow interrupted fasciæ, the second, third, and fourth segments with interrupted broader fasciæ beneath with three more or less interrupted fasciæ, these sometimes reduced to spots.

*Hab.* Swan River, Champion Bay.

#### 12. *Thynnus oppositus*.

*Male.* Length  $7\frac{1}{2}$  lines.—Black; the abdomen with a double row of ovate yellow spots above and also beneath. The clypeus truncate, its anterior margin and also the mandibles yellow; the pubescence on the head and thorax white; the tips of the femora, tibiae, and tarsi yellow; wings fulvo-hyaline, the nervures black. Abdomen narrowed and rounded at the base; the apical segment yellow; the second and four following segments with a large white ovate lateral macula; beneath, the segments have similar rows of maculae; the terminal ventral segment with an acute spine at the apex; the margin of the basal segment tuberculate in the middle.

*Hab.* Swan River.

In the type specimen the legs and the nervures at the base of the wings appear to have been changed from yellow to red by cyanide of potassium, used in collecting.

#### 13. *Thynnus irregularis*.

*Male.* Length 6 lines.—Black; the head and thorax with a few minute yellow maculae; the abdomen with irregularly shaped quadrangular maculae laterally, and two rows of smaller maculae with the middle row on the dorsal margin. Head very closely punctured; the mandibles, the margins of the clypeus, an oblong spot at its base, a small ovate spot above the antenna, a narrow line at the inner margins of the eyes, and a short one behind them, towards the mandibles, yellow. A narrow line on the anterior margin of the prothorax, a narrow line in the middle of the mesothorax and at the margin of the scutellum, and a minute spot on the postscutellum, yellow; wings subhyaline, the nervures black. Abdomen with subquadrangular maculae laterally, and between these two rows of small lunular hooked-shaped spots close to the apical margins of the segments; on the basal segment these spots unite with the lateral maculae; beneath, the second, third, and fourth segments have each a large white ovate macula, the maculae having a transverse black line.

*Hab.* Swan River.

14. *Thynnus excellens*.

*Male*. Length  $5\frac{1}{2}$  lines.—Ferruginous, and with white and black markings. The antennæ black; the mandibles, the clypeus, the inner orbits of the eyes, a spot above each antenna, and the lower portion of the outer orbits of the eyes, white; a longitudinal ferruginous line on the clypeus. The prothorax with the margins white between them, black above in the middle, and ferruginous laterally; a white spot on the disk of the mesothorax with a black line on each side; the tegulæ and a narrow line over them, the postscutellum, and a narrow line up to the insertion of the posterior wings, white; the metathorax black above, with the posterior lateral angles and two central ovate spots white; wings hyaline; the prothorax beneath and the pectus black; the anterior coxæ with large white spots; the intermediate and posterior tarsi, also the posterior coxæ and femora above and the apex of the tibiæ, black. Abdomen with the margins of the segments deeply constricted; the extreme base black; the first to fifth segments with lateral white subovate maculæ, and also a double central row of minute ones; the abdomen is somewhat similarly spotted beneath.

*Hab.* Swan River.

15. *Thynnus insidiator*.

*Male*. Length 7 lines.—Head and thorax black, legs pale ferruginous; abdomen yellow, with the base and the extreme base of each segment narrowly black. The mandibles, the clypeus, the margins of the eyes (narrowly interrupted at their summit), and a V-shaped spot between the antennæ, yellow. The anterior margin of the prothorax narrowly, and the posterior margin broadly, yellow; a quadrate spot on the disk of the mesothorax, the tegulæ, scutellum, and postscutellum, yellow; the legs pale ferruginous; the anterior coxæ at their base, and the intermediate and posterior pairs black; wings fulvo-hyaline the nervures at the base of the wings ferruginous, beyond they are black. The segments of the abdomen have laterally a short ferruginous longitudinal line, an indistinct central similar row of lines, and also a short transverse line near the apical margin of each segment between the longitudinal rows.

*Female*. Length 4 lines.—Black above and ferruginous beneath; the antennæ and legs ferruginous; the margins of the segments above ferruginous; the apical segments punctured; the head, thorax, and base of the abdomen smooth and shining, and with a few fine scattered punctures.

*Hab.* Swan River.

16. *Thynnus aterrimus*.

*Male*. Length 6 lines.—Black; shorter and broader than is usual in Thynnideous insects. The face and body beneath with cinereous pubescence; the prothorax with the anterior margin very narrowly yellow; the postscutellum and a very narrow line continued to the posterior wings yellowish; wings fusco-hyaline, the nervures black. The head and thorax very closely punctured. Abdomen shining and having very shallow distant punctures; the segments deeply constricted; the terminal ventral segment tridentate.

*Hab.* Swan River.

17. *Thynnus perplexus*.

*Male*. Length 6 lines.—Black; the head and thorax with yellow markings, the abdomen with interrupted yellow fasciæ on each segment; the legs ferruginous. The mandibles, the clypeus, a spot above each antenna, and two minute spots on the vertex yellow. The posterior margin of the prothorax, the tegulæ, an ovate spot on the mesothorax, and also one on the scutellum yellow; the femora and thorax beneath with white pubescence, as well as the sides of the metathorax; wings hyaline, the nervures ferruginous. Abdomen with six interrupted yellow fasciæ, the seventh segment ferruginous, the inferior plate forming a triangular appendage; beneath ferruginous; the margins of the segments black; the second and three following segments with two large ovate maculæ.

*Female*. Length 5 lines.—Head, thorax, and legs ferruginous; the head wider than the thorax, and with a few scattered punctures. Abdomen black above and ferruginous below; the basal segment yellow above, black at the extreme base, and with a narrow black line in the middle; the second segment transversely striated, and with a large lateral subquadrate spot; the three following segments with very broad yellow fasciæ, slightly interrupted in the middle.

*Hab.* Swan River.

18. *Thynnus petulans*.

*Male*. Length 9 lines.—Head and thorax closely punctured; black; abdomen, tibiae, and tarsi ferruginous. The mandibles reddish yellow, their apex and inner margin rufo-piceous; the clypeus truncate, its margin yellow, and emitting upward a yellow triangular mark in the middle. The posterior margin of the prothorax and the tegulæ ferruginous; the metathorax with white woolly pubescence; wings pale fulvo-hyaline, the nervures dark ferruginous; beneath with white pubescence; legs fringed with the same. Abdomen with the extreme

black; the apical margins of the segments slightly constricted and more or less fuscous in the middle, where the fuscous colour widens into a triangular shape; beneath, the segments are black laterally and ferruginous in the middle; the apical segment above longitudinally striated, the ventral segment triangular, its margins black.

*Hab.* Swan River.

#### 19. *Thynnus nigropectus*.

*Male.* Length 8 lines.—Yellow, with black markings; the head above the antennæ, the latter, and the tips of the mandibles black; between the antennæ is a yellow triangular-shaped spot that runs up to the anterior ocellus; a yellow line above the antennæ at the inner margin of the eyes, not extending to their summit. A transverse line in the middle of the prothorax, the mesothorax, the base of the scutellum, and the pectus, black; two abbreviated lines, and also a line over the tegulæ, yellow; the tarsi black; the wings hyaline, with the nervures black. Abdomen truncate at the base, the apical margins of the first and second segments black; the following segments black, with a broad yellow fascia on the third, fourth, and fifth, interrupted in the middle; the sixth has a lateral yellow spot; the apical segment truncate above, and with longitudinal irregular striae, beneath the produced truncated portion it is smooth and shining, and has laterally two short acute spines; the apical ventral plate trifid; the basal margin of the ventral segments narrowly black.

*Hab.* Swan River.

#### 20. *Thynnus vespoides*.

*Male.* Length  $8\frac{1}{2}$  lines.—Black; the abdomen with yellow fasciæ, the tibiæ and tarsi ferruginous. The clypeus truncate, and, as well as the mandibles, yellow, the latter black at their tips; the cheeks and inner margin of the eyes with white pubescence. Thorax closely punctured; the metathorax densely clothed with long white pubescence, on the sides and beneath it is shorter and less dense; the femora fringed with the same beneath; wings faintly fulvo-hyaline, the nervures black. Abdomen truncate at the base; the first, second, third, and fourth segments with the margins narrowly black; the segments pale yellow, and with a small ovate black spot laterally; the fifth segment with a narrow pale yellow fascia, interrupted laterally in a line with the black spots; the sixth and seventh segments black; the apex produced in the lower plate into a trifid appendage.

*Hab.* South Australia.



21. *Thynnus molestus*.

*Male*. Length  $7\frac{1}{2}$  lines.—Black, marked with yellow on the head and sparingly so on the abdomen; the tibiæ and tarsi ferruginous. The mandibles, clypeus, a line from it that unites with a broad line at the inner margin of the eyes, as high as the antennæ, a minute spot above them, and a broad stripe behind the eyes, yellow. Thorax closely punctured; the wings subhyaline, the nervures yellowish at the base of the wings. Abdomen shining, finely and closely punctured; a minute yellow macula at the lateral margin of the second, third, and fourth segments.

*Hab.* South Australia.

22. *Thynnus strangulatus*.

*Male*. Length 4 lines.—Shining black, the segments deeply constricted. Head punctured; the clypeus much produced, its anterior margin truncate, its extreme lateral margins narrowly white, a spot at the base of the mandibles white. Thorax sparingly punctured; the wings hyaline and iridescent; the anterior tibiæ purish, rufo-testaceous. Abdomen shining and impunctate.

*Female*. Ferruginous and shining; the metathorax dark fuscous, the apex of the abdomen black; the head compressed, smooth and shining, widest anteriorly.

*Hab.* South Australia.

23. *Thynnus pavidus*.

*Male*. Length 5 lines.—Black; the head and thorax with yellow markings; the base of the antennæ and the legs ferruginous. The clypeus and mandibles reddish yellow; the former, with the tip and two minute spots, black; the tips of the mandibles black. The margins of the prothorax yellow, the hinder margin broad, so, and uniting with the anterior margin, which is slightly interrupted in the middle; the scutellum, postscutellum, and a narrow line from the latter to the base of the posterior wings, yellow. Mesothorax finely punctured; the metathorax transversely striated beyond the base, which is smooth and shining; wings hyaline, the nervures dark fuscous, becoming ferruginous towards their base, the coxæ black. Abdomen shining black, impunctate, with the margins of the segments depressed.

*Female*. Black; the head smooth and shining; the mandibles, antennæ, legs, and second segment of the abdomen ferruginous. The latter transversely grooved; the apex of the abdomen ferruginous.

*Hab.* South Australia.

24. *Thynnus nubilipennis*.

*Male*. Length 7 lines.—Black and shining, variegated with yellow, the wings fulvo-hyaline, the nervures ferruginous, a fuscous cloud occupying the marginal and a portion of the second submarginal cell. The mandibles, clypeus, orbits of the eyes, interrupted at their summit, and a V-shaped spot above the antennæ, bright yellow; the tips of the mandibles and a transverse spot on the clypeus black. Prothorax with a broad interrupted fascia at the posterior margin, the fascia narrowed towards the tegulæ, a quadrate spot on the disk of the mesothorax, the scutellum, and a narrow line running to the insertion of the wings, a large irregularly shaped spot beneath them, the metathorax with an oblique stripe on each side, which runs to its apex and curves up its lateral margins, yellow; the legs pale ferruginous. All the segments of the abdomen with a lateral oblong-ovate yellow spot; beneath entirely black.

*Female*. Length  $5\frac{1}{2}$  lines.—Black; the mandibles, anterior tibiæ, and all the tarsi ferruginous; the flagellum pale ferruginous; the tibiæ spinose. The thorax and legs sprinkled with pale hairs. The margin of the basal segment of the abdomen, and a large, oblong, transverse, subovate lateral macula yellow; the fifth segment with a narrow, lateral, transverse macula; the second segment transversely grooved.

*Hab.* Queensland.

25. *Thynnus perelegans*.

*Male*. Length  $3\frac{1}{2}$  lines.—Black; the head, thorax, and abdomen with bright yellow markings. The mandibles, the clypeus, two united spots above the antennæ, and a narrow line round the orbits of the eyes, interrupted at their summit, yellow; the head closely punctured. Thorax closely and more strongly punctured than the head on the pro- and mesothorax; the metathorax more distantly punctured; the margins of the prothorax broadly yellow; a quadrate spot on the disk of the mesothorax, the scutellum, and post-scutellum, yellow, as well as the apical portion of the metathorax, which has a narrow black line in the centre; the legs pale ferruginous, with the tips of the joints yellow, and the base of the posterior tibiæ black; wings hyaline, the nervures pale ferruginous. Abdomen shining, the margins of the segments depressed; the first to sixth segments with a large lateral, oblong-ovate, yellow macula, the maculæ with a small notch on their upper margins.

*Hab.* Queensland.

26. *Thynnus simplex*.

*Male*. Length  $6\frac{1}{4}$  lines.—Black; the abdomen with a double row

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of yellow maculæ; the apical segment ferruginous. The mandible and clypeus yellow, the latter truncate and longitudinally striated; the cheeks with white pubescence. Thorax closely punctured above, and thinly covered with white pubescence; the legs ferruginous; the femora more or less blackish beneath; the coxæ and trochanters black; wings subhyaline, the nervures black. Abdomen with the basal segment black, the five following with a large, ovate, transverse macula on each side; the upper plate of the terminal segment ferruginous and longitudinally striated, the inferior plate forming a lanceolate process transversely striated.

*Hab.* Champion Bay.

#### 27. *Thynnus rixosus*.

*Male.* Length  $3\frac{3}{4}$  lines.—Black and shining, with the wings fusco-hyaline. Head strongly but not very closely punctured; the clypeus with a sharp central, longitudinal carina, and pointed at the apex, and, as well as the face below the antennæ, covered with white pubescence. The pro- and mesothorax strongly punctured; the metathorax smooth and shining, with the apex finely punctured; wings fusco-hyaline, palest at their base, the nervures black; the legs obscurely rufo-piceous beneath. Abdomen sessile, petiolate, smooth, shining, and impunctate.

*Hab.* Champion Bay.

#### 28. *Thynnus morosus*.

*Male.* Length  $9\frac{1}{2}$  lines.—Black; the clypeus, labrum, the mandible, and a narrow line behind the eyes, yellow. Head rugose; the cheeks with white pubescence, that on the margin of the vertex and prothorax pale ochraceous. The thorax closely punctured above; the metathorax with dense white pubescence; wings fusco-hyaline, the nervures black; beneath with a dense white pubescence; the anterior coxæ enlarged into large circular flat lobes. Abdomen rounded at the base, covered with fine sharp punctures, and having an obscure prismatic iridescence; the apical segment with a short spine at its base laterally; the apical ventral plate with a trifid process, which has also a stout tooth at the base laterally.

*Hab.* Champion Bay.

#### 29. *Thynnus impatiens*.

*Male.* Length  $6\frac{1}{2}$  lines.—Black; the head and thorax opaque variegated with yellow; legs ferruginous; abdomen smooth, shining, impunctate, and having six yellow maculæ. The head and thorax very closely punctured; the anterior margin of the elytra

and the mandibles yellow, the latter black at their apex. The margins of the prothorax yellow, the hinder one broadly so, the anterior one interrupted in the middle; the tegulae, an ovate spot on the scutellum, and the postscutellum yellow; wings subhyaline, pubescent, and with black nervures; the coxae and trochanters black. Abdomen impunctate, and with a large ovate macula on the second, third, and fourth segments laterally.

*Hab.* Champion Bay.

### 30. *Thynnus deceptor*.

*Male.* Length  $7\frac{1}{4}$  lines.—Head, thorax, and base of the abdomen black, the rest of the abdomen and the legs more or less ferruginous. Head closely punctured; the mandibles, except the extreme base, ferruginous. Thorax with the disk and the scutellum strongly punctured, otherwise less coarsely and more closely punctured; beneath, and also the metathorax, with short white pubescence; wings fulvo-hyaline, the nervures ferruginous; the coxae black; the femora and tibiae with more or less of dark stains. Abdomen with the segments slightly constricted, their apical margins with a narrow fringe of white pubescence.

*Female.* Length 5 lines.—Black; the head very smooth and shining, and with an obscure ferruginous tint. Thorax smooth above; legs obscurely rufo-piceous; the intermediate tibiae much swollen. Abdomen with the basal segment longitudinally striated, its apical margin smooth and shining; the second segment with deep transverse grooves above, the rest of the segments smooth and with scattered punctures.

*Hab.* Champion Bay.

### 31. *Thynnus indistinctus*.

*Male.* Length  $7\frac{1}{2}$  lines.—Black; the segments of the abdomen with indistinct reddish fasciae. Head finely rugose; the cheeks and face at the sides with white pubescence; the clypeus convex, produced over the labrum, and, as well as the mandibles, yellow. The thorax with white pubescence, which is sparing on the disk and dense and longest on the metathorax; the legs have a similar pubescence, which is longest on the femora beneath; the apical joints of the tarsi obscurely rufo-piceous; wings fusco-hyaline, the nervures black. Abdomen truncate at the base, covered with fine shallow punctures; the basal and four following segments with indistinct fasciae of a reddish yellow, the fasciae most distinct laterally; the apical segment terminates in a lanceolate process, very acute at the apex, and with two small teeth at its base.

*Hab.* Western Australia.

32. *Thynnus medius*.

*Male*. Length  $6\frac{1}{4}$  lines.—Black; the clypeus and mandibles yellow, a transverse black line on the former, and the tips of the latter black. Thorax very closely punctured; the elevated anterior margin of the prothorax, the tegulæ, a spot on the scutellum, and the postscutellum, yellow; the legs ferruginous; the pubescence beneath, and also that on the metathorax, thin and hoary; wings hyaline, the nervures ferruginous. Abdomen shining and with shallow punctures; the apical margins of the segments depressed: the first segment with a minute lateral pale yellow spot; the four following with oblong lateral maculæ about the middle of the segments, those on the second segment are largest and irregularly ovate; on the two following segments the maculæ taper inwardly, those on the fifth segment are very narrow; the apical ventral segment is lanceolate, and has a minute tooth at the apex; beneath the second, third, and fourth segments have two central, subluminate pale yellow spots, and also a minute subovate spot laterally.

*Hab.* Australia.

33. *Thynnus flavovariegatus*.

*Male*. Length  $5\frac{1}{2}$  lines.—Black, and much variegated with yellow: the anterior wings clouded at their apex. The mandibles, clypeus, orbits of the eyes (interrupted above), a spot above each antenna, and two small ovate ones on the vertex, yellow; the clypeus be dentate anteriorly; the scape in front, and the apex of the joint of the antennæ, yellow. The margins of the prothorax, the tegulæ, a fuscate spot on the mesothorax, two ovate ones on the scutellum, the postscutellum, and two longitudinal stripes on the metathorax, which curve up its lateral margins, yellow; a large oblong space beneath the wings, and the coxæ beneath, yellow; the legs ferruginous; wings hyaline and iridescent, the nervures ferruginous. The first four segments of the abdomen with a yellow fascia: their apical margins, each fascia with a transverse dark line that is interrupted in the middle: beneath, the second, third, and fourth segments with yellow fasciæ.

*Hab.* Australia.

34. *Thynnus fastuosus*.

*Male*. Length  $4\frac{1}{2}$  lines.—Black; the head and thorax variegated with yellow, a fuscous cloud in the marginal cell of the anterior wings, and the abdomen with five yellow fasciæ. The clypeus, inner orbits of the eyes, a line behind them which runs to the hinder margin of the vertex, and two minute spots above the antennæ, yellow. The margins of the prothorax (the anterior slightly interrupted), a square spot on the mesothorax, a line on the margin on the scutellum, the postscutellum, a line continuing

wings, and the metathorax posteriorly, yellow: a large yellow oblong macula beneath the wings: wings pale fulvo-hyaline, the nervures ferruginous, the tegulae yellow. Abdomen narrowed at the base: the first and four following segments with narrow yellow line: the three apical ones slightly interrupted beneath, black.

*Hab.* Australia.

### 35. *Thynnus nanus*.

*Male.* Length 3 lines.—Black and shining, the wings hyaline and iridescent, having white spots and lines. A spot at the base of the mandibles, the margin of the clypeus, a line at the inner orbits of the eyes as high as the antennae, a short line behind the eyes, and a spot above each antenna, white. The margins of the prothorax (the anterior one slightly interrupted), a spot on the scutellum, the postscutellum, and the tegulae, white: the wings hyaline and iridescent, the nervures ferruginous: a line beneath the wings white. Abdomen smooth and shining: the basal segment with an impressed longitudinal line: the four following segments with a lateral, oblique, longitudinal spot.

*Hab.* Tasmania.

### 36. *Thynnus candidus*.

*Male.* Length  $6\frac{1}{2}$  lines.—Black: head and thorax closely punctured: abdomen smooth and shining: head and thorax with yellow markings: legs ferruginous. The base of the mandibles and the clypeus yellow, the latter strongly punctured and with an anchor-shaped black mark. The margins of the prothorax, the tegulae, a small oblong spot on the disk of the mesothorax, two minute spots on the scutellum, a similar spot on each side of it at its basal angles, the postscutellum, and the lateral apical angles of the metathorax, yellow: two ovate spots beneath the wings yellow: the coxae and trochanters, the anterior and intermediate femora behind, and the posterior pair at their apex above, black. The segments of the abdomen slightly constricted, and having an oblong pale yellow macula laterally: the apical ventral segment triangular, with a sharp spine at each angle.

*Hab.* Morty Island, Eastern Archipelago.

### 37. *Thynnus strenuus*.

*Male.* Length  $6\frac{1}{2}$  lines.—Black: head and thorax closely punctured, and thinly sprinkled with black pubescence: the second and four following segments with white lateral oblong maculae pointed within. Head with a minute spot at the base of the mandibles, and also a similar one in the middle of the posterior margin of the

vertex. The anterior margin of the thorax white, slightly interrupted in the middle; a spot on the tegulæ, another on the scutellum, and on the postscutellum, also white; the wings hyaline, the nervures ferruginous. Abdomen with the lateral maculæ placed near to the posterior margins of the segments; beneath, the second and three following segments with interrupted white fasciæ.

*Hab.* Chili.

### 38. *Thynnus nigrofasciatus*.

*Male.* Length  $4\frac{1}{2}$  lines.—Head and thorax shining black; legs and abdomen ferruginous, the latter with the basal and the fifth segments black. The mandibles pale ferruginous. The mesothorax and scutellum finely and not very closely punctured; wings hyaline and iridescent, the nervures black; the coxæ and trochanters black; the abdomen smooth, shining, and impunctate.

*Hab.* Chili.

### 39. *Thynnus nigripennis*.

*Male.* Length 9–10 lines.—Jet-black; head and thorax opaque, the abdomen shining. The joints of the antennæ subarcuate; pubescence on the head, thorax, and legs black; the head and thorax closely punctured; wings dark fuscous, and with a very iridescent; the mesothorax with two deep longitudinal channels and two abbreviated narrower ones towards the tegulæ; the scutellum elevated, forming a prominent tubercle. Abdomen narrow at the base, subpetiolate, and very smooth and shining.

*Female.* Black, with the flagellum, anterior tibiæ in front, and tarsi fulvous; above the insertion of each antenna is a broad, orange-yellow macula: the head and thorax not closely punctured; the basal segment of the abdomen strongly punctured, and with a little of fulvous pubescence at its base; the second segment rugose; the following segments finely and distantly punctured; the apex ferruginous.

*Hab.* Chili.

### 40. *Thynnus macilentus*.

*Male.* Length 5 lines.—Head and thorax shining black, legs and antennæ ferruginous. Head finely but not very closely punctured; the mandibles and palpi white. Thorax not strongly punctured; the margins of the prothorax white, and slightly interrupted in the middle; wings hyaline and iridescent, the nervures black; the coxæ and trochanters black. Abdomen shining, and having a black macula on the basal segment.

*Hab.* Chili.

**41. *Thynnus intaminatus*.**

*Male*. Length 5 lines.—Shining jet-black; the head and thorax only sprinkled with black hairs, finely but not very closely punctured; wings fusco-hyaline, and having a violet iridescence; abdomen with the segments slightly constricted, and smooth, shining, and impunctate; the prothorax has beneath a central sharp, longitudinal carina.

*Hab.* Chili.

**42. *Thynnus albofasciatus*.**

*Male*. Length  $8\frac{1}{2}$  lines.—Black; head and thorax very closely punctured; abdomen closely but much more finely so, and with an impunctate white fascia on the second, third, and fourth segments; the fasciæ attenuated in the middle and near the apical margins of the segments. The anterior margin of the prothorax white; the legs ferruginous; wings fulvo-hyaline, the anterior pair with a fuscous cloud in the marginal cell and extending a little below it, this part of the wings with a violet iridescence; the nervures from the base of the wings to the marginal cell ferruginous, beyond the stigma they are black.

*Hab.* Chili.

**43. *Thynnus ingenuus*.**

*Male*. Length 7 lines.—Black, much adorned with yellow markings; the head and thorax closely punctured; abdomen more strongly but more distantly punctured. The clypeus and a spot at the base of the mandibles yellow. The margins of the prothorax, which unite in the middle and have a central black spot, the tegulae, a macula on the mesothorax at the base of the scutellum, the hinder portion of the latter, the postscutellum, and two broad stripes on the metathorax, which curve round to its lateral posterior angles, yellow; an oblong spot beneath the wings, the anterior femora in front, and the intermediate and posterior pairs towards their apex beneath, yellow; the wings hyaline, their nervures ferruginous. All the segments of the abdomen with a large, oblong, lateral macula, the macula with a small ovate notch in their outer margin; beneath, the second, third, and fourth segments with a small lateral yellow macula.

*Hab.* Bay of St. Blas, North Patagonia.

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**ÆLURUS, Klug.****1. Ælurus anthracinus.**

*Male.* Length 7 lines.—Jet-black; the head closely and rather strongly punctured, the metathorax closely and finely so; wings subhyaline, the nervures black; a fusco-ferruginous cloud occupying the first and second submarginal and the third discoidal cell; abdomen smooth and shining and subpetiolate. The face and mandibles with griseous pubescence, the cheeks with a long curl fringe of the same; the margin of the cheeks behind the eye more or less testaceous. The metathorax with erect, thin, griseous pubescence. The apex of the abdomen with griseous pubescence and terminating in a trispinose appendage.

*Female.* Of an obscure dark reddish brown; the head subopaque and strongly and very closely punctured; the thorax less closely punctured; the two basal segments of the abdomen rugose, the rest with oblong shallow punctures; the apical segment ferruginous, its margin rounded; the legs and antennæ ferruginous.

*Hab.* Queensland.

**ANTHOBOSCA, Guérin.****1. Anthobosca errans.**

*Male.* Length 7 lines.—Black; the head and thorax shining, closely and finely punctured, and, as well as the thorax, with pale yellow markings; the legs ferruginous. Head subrotundate; the clypeus and a spot at the base of the mandibles pale yellow; antennæ extending to the base of the scutellum. Two transverse maculae on the prothorax, a spot on the mesothorax, a small one at the base of the scutellum and the postscutellum, pale yellow; wings hyaline and iridescent, the nervures black; the apex of the anterior wing whitish. Abdomen slightly shining, and having a thin cinereous pile.

*Hab.* Zulu and Port Natal.

**2. Anthobosca antennata.**

*Male.* Length  $5\frac{3}{4}$  lines.—Black; the antennæ incrassate, extending to a point at the apex, not extending beyond the tergite. Head and thorax finely and closely punctured and with white markings. The mandibles, clypeus, and scape in front of the flagellum fulvous beneath; the mandibles black at the apex. The posterior margin of the prothorax, the tegulae, a spot on the mesothorax, one on the scutellum, and the postscutellum,

the anterior femora in front, the tarsi, and coxæ yellow; the intermediate and posterior trochanters, the extreme apex of the femora beneath, their tarsi, and the posterior tibiæ at their base and also outside, yellow. Abdomen with a thin grey pile.

*Hab.* Brazil.

### 3. *Anthobosca æthiops*.

*Male.* Length  $6\frac{1}{2}$  lines.—Black; the head and thorax strongly punctured. The head a little wider than the thorax, with a very narrow white line at the inner orbits of the eyes; the face and cheeks with griseous pubescence; the antennæ incrassate, extending to the scutellum. The sides of the thorax parallel; the metathorax transversely quadrate; wings subhyaline; the calcaria pale testaceous. The abdomen with delicate shallow punctures, and having a thin cinereous pile.

*Hab.* West Australia, Champion Bay.

This species is separated from *A. nigra* by the square form of the metathorax, and by having a white line at the margin of the eyes; its legs are also totally black.

## RHAGIGASTER, Guérin.

### 1. *Rhagigaster æthiops*.

*Male.* Length  $8\frac{1}{2}$  lines.—Black, shining, punctured, the mesothorax and scutellum coarsely so; wings hyaline, with black nervures. The tips of the mandibles ferruginous; the clypeus shining and finely punctured, its anterior margin emarginate, the lateral angles of the emargination acute. The prothorax not very strongly punctured, its anterior margin acute and somewhat raised; the sides, beneath, and the metathorax with thin hoary pubescence. The segments of the abdomen constricted, the apical margins of the segments depressed, with scattered shallow punctures.

*Female.* Length 6 lines.—Black, with the meso- and metathorax and legs ferruginous. The head smooth and shining above, anteriorly rugose; the antennæ and mandibles rufo-piceous; the thorax smooth and shining, and, like the head, with a few scattered punctures; the abdomen smooth and shining, with the extreme apex rufo-piceous.

*Hab.* Adelaide.

### 2. *Rhagigaster fuscipennis*.

*Male.* Length  $6\frac{1}{2}$  lines.—Black, shining, sparingly punctured on the thorax and abdomen; wings fusco-hyaline, with a violet irides-

cence, the nervures black. Head closely and strongly punctured, except the hinder portion of the vertex, which has distant punctures; a transverse carina in front of the ocelli; the mandibles black, with the extreme apex ferruginous; the face, below the antennæ, with white pubescence. Thorax with strong but distant punctures; the anterior margin of the prothorax raised and acute; the sides of the prothorax somewhat rounded to the wings. Abdomen with the segments constricted, sparingly punctured; beneath the base of the segments closely punctured, their apical half with stronger but distant punctures.

*Hab.* Queensland.

### 3. *Rhagigaster rugosus*.

*Male.* Length 5 lines.—Black; the head and thorax rugose; the tibiæ, tarsi, and two apical segments of the abdomen ferruginous. The head and thorax with thin hoary pubescence; wings hyaline; the nervures black. Abdomen closely punctured and shining; the recurved spine black.

*Female.* Length  $2\frac{3}{4}$  lines.—Black; the antennæ pale ferruginous; the mandibles and tarsi ferruginous, the tibiæ obscurely so; the prothorax ferruginous, the meso- and metathorax obscurely so; the second segment of the abdomen bright ferruginous and deeply transversely grooved; the extreme apex ferruginous.

*Hab.* Adelaide.

This species is closely allied to *R. hæmorrhoidalis* of Guérin, but is distinguished from it by its smaller size and by the colour of its legs.

### 4. *Rhagigaster lævigatus*.

*Male.* Length 10 lines.—Black, shining, thorax impunctate; wings dark brown-black, lightest towards their apical margins. The head with a few scattered fine punctures, the vertex impunctate; the face on each side of the clypeus with cinereous pubescence. The scutellum prominent. The abdomen smooth and shining; the margins of the segments depressed; the depression at the apex of the third, fourth, and fifth segments finely punctured.

*Female.* Length  $7\frac{1}{4}$  lines.—Ferruginous, the abdomen, legs, and antennæ obscurely so; the head subquadrate, and, as well as the thorax above, with strong oblong punctures; the apical margin of the segments with a row of punctures; the apical segment with oblong punctures.

*Hab.* N.W. coast of Australia, Champion Bay.

5. *Rhagigaster clypeatus*.

*Male*. Length 8 lines.—Black; the head and thorax closely punctured and subopaque; abdomen shining, and more finely and distantly punctured; the clypeus yellow, truncate anteriorly, and longitudinally striated; the base of the mandibles with an indistinct yellow spot. The wings subhyaline, and having a violet iridescence; the metathorax more finely punctured than the mesothorax, and with a little hoary pubescence at the sides. The basal margins of the segments of the abdomen depressed; the sixth ventral segment with a short lateral spine, the seventh with a recurved spine that has a short tooth or spine at its base.

*Hab.* Australia.

## ELAPHROPTERA, Guérin.

1. *Elaphroptera carbonaria*.

*Male*. Length 12–12½ lines.—Shining black, closely and finely punctured; wings hyaline, with their apical portion clouded. Head transversely subquadrate; the clypeus carinate, its anterior margin deeply emarginate and acutely bidentate; the sides of the face, below the antennæ, concave; the antennæ extending to the middle of the first segment of the abdomen, the joints of the antennæ arcuate. The anterior margin of the prothorax acute, the scutellum forming an elevated tubercle; the wings hyaline from the base to the marginal cell, in which is a dark fuscous cloud, which extends thence to the apex of the wings, but of a lighter tint; the nervures brown-black, those of the anterior wings margined with fuscous; the apex of the wings with a violet iridescence. Abdomen subpetiolate, the margins of the segments depressed; the apical segment impunctate at the base and rugose at the apex, and, as well as the ventral segment, rounded at the apex.

*Hab.* Rio.

## SCOLIIDÆ, Leach.

## MYZINE.

*Scolia* (pt.), *Fabr. Ent. Syst.* ii. 236.

*Elis* (pt.), *Fabr. Syst. Piez.* 232.

*Tiphia* (pt.), *Fabr. Syst. Piez.* 232.

*Sapyga* (pt.), *Panz. Faun. Germ.* 87. 19.

*Myzine*, *Latr. Hist. Nat. des Ins.* xiii. 269.

*Plesia*, *Jurine, Hym.* (1817).

1. *Myzine ruficornis*.

*Male*. Length 3-3 $\frac{1}{4}$  lines.—Black; the flagellum of the antennæ and apical segment of the abdomen ferruginous; the segments of the abdomen constricted, and, as well as the thorax and head, variegated with yellow. The mandibles yellow, with their tips ferruginous. The margins of the prothorax, the tegulæ, scutellum, tibiæ, tarsi, and tips of the femora, yellow; wings subhyaline. Abdomen with yellow marginal fasciæ that are expanded laterally beneath black.

*Hab.* Sicily.

2. *Myzine nigrifrons*.

*Male*. Length 6-6 $\frac{1}{2}$  lines.—Head and thorax black, the latter with yellow markings, and the tibiæ and tarsi yellow; abdomen with yellow fasciæ. The mandibles yellow at their base; the face and cheeks with white pubescence, that at the insertion of the antennæ pale ochraceous. The margins of the prothorax yellow; a spot beneath the wings, the femora beneath and at their apex, as well as the tibiæ and tarsi, yellow; wings hyaline, nervures fuscous, ferruginous, the stigma ferruginous. Abdomen shining and finely punctured; the apical margins of the segments with yellow fasciæ that gradually widen laterally, the fasciæ continued beneath the abdomen, and are abruptly widened in the middle.

*Var.* The spot on the mandibles and the yellow margins of the prothorax obsolete.

*Hab.* Sicily.

3. *Myzine torrida*.

*Female*. Length 6 lines.—Head and thorax black, legs and abdomen ferruginous. Head strongly but not very closely punctured, most densely so on the face; the mandibles and tips of the antennæ and flagellum ferruginous. The prothorax, the hinder margin of the mesothorax, and the scutellum punctured; the metathorax somewhat obliquely truncate, but not abruptly so, and having a central longitudinal channel that terminates at the verge of truncation; wings hyaline, with a slight fuscous cloud in the marginal cell; the tibiæ and tarsi with pale glittering lines. Abdomen smooth and shining, the apical segment longitudinally striated.

*Hab.* The Gambia.

4. *Myzine insularis*.

*Female*. Length 10 $\frac{1}{2}$  lines.—Shining black, with fulvous wings, the nervures ferruginous, tegulæ rufo-testaceous. The antennæ fulvous beneath; the mandibles thickly fringed with

with dark brown pubescence; the clypeus obscurely ferruginous; the head with fine scattered punctures. Thorax finely punctured, constantly so on the mesothorax and scutellum; the hinder margin of the prothorax obscurely ferruginous, the metathorax opaque; the apical joints of the tarsi obscurely ferruginous. The basal segment of the abdomen with a somewhat obscure lunate, ferruginous, transverse spot; the apical margins of the segments slightly depressed, the depressions with a row of fine punctures; the apical segment rugose and covered with blackish-brown pubescence.

*Hab.* Madagascar.

##### 5. *Myzine combusta*.

*Male.* Length  $8\frac{1}{2}$  lines.—Head and thorax black, legs and abdomen ferruginous. Head below the ocelli with rough confluent punctures; above, the vertex smooth and shining; the antennæ and mandibles ferruginous. The prothorax strongly punctured generally, as are also the sides and beneath; the metathorax truncate, with one or two deep transverse grooves at the verge of the truncation; the tibiæ and tarsi with dense ferruginous setæ; the mesothorax with two deep longitudinal grooves on each side of the disk; the disk between the inner grooves yellow, between the grooves themselves it is ferruginous; wings hyaline, the nervures ferruginous. Abdomen smooth and shining, the apical segment longitudinally rugose; beneath, the segments are punctured at their apical margins.

*Hab.* India (?) or Africa.

##### 6. *Myzine pallida*.

*Male.* Length  $3\frac{1}{2}$ –4 lines.—The head black, the rest of the insect pale testaceous with pale rufous markings. The scape of the antennæ, the clypeus, and mandibles pale testaceous, nearly white; the flagellum fulvous. The thorax and legs whitish, with a pale ferruginous tint at the sides and in front of the mesothorax; sometimes the metathorax is more or less tinted with pale ferruginous; wings hyaline, the nervures testaceous, the stigma fuscous. Abdomen with pale, waved, ferruginous fasciæ.

*Hab.* India, North-west Provinces.

##### 7. *Myzine orientalis*.

*Male.* Length  $5\frac{1}{2}$  lines.—Black and much variegated with pale yellowish-white. The scape of the antennæ in front, the clypeus, and mandibles pale yellow; the antennæ longer than the thorax, the flagellum fulvous beneath. The prothorax, the tegulae, a spot on the mesothorax, the scutellum, postscutellum, and legs pale

yellowish white; wings hyaline and iridescent, the nervures rufotestaceous. All the segments of the abdomen, except the apical one, with broad pale fasciæ, leaving the apical margins narrowly fuscous and the basal margins narrowly black; beneath rufotestaceous, with angular fasciæ on the second, third, and fourth segments.

*Hab.* Beloochistan.

#### 8. *Myzine simillima*.

*Female.* Length  $7\frac{1}{2}$  lines.—Black; head and thorax strongly not very closely punctured, variegated with yellow; abdomen smooth and shining. The face closely punctured, with a red yellow spot above each antenna, and an abbreviated line opposite to them close to the eyes, also a line behind them. Thorax shining above, and with rather strong punctures, which are sparing on the mesothorax; a transverse fascia on the metathorax near its lateral margin, the postscutellum, and a spot on the posterior coxæ yellow; the metathorax truncate, the truncation with radial striæ, punctured above, and with a smooth shining space on the side; the sides of the metathorax longitudinally striated; the abdomen subhyaline, with dark brown nervures. Abdomen smooth and shining, and having a few fine scattered punctures; the first segment very finely longitudinally striated; a yellow macula on each side of the first and second segments, that on the second near its basal margin; the three following segments with narrow widely interrupted, yellow fasciæ.

*Hab.* St. Paulo.

This species somewhat resembles *M. flavopicta* from Santa Catarina, but is quite distinct, differing both in sculpturing and coloration.

#### 9. *Myzine jucunda*.

*Female.* Length  $8\frac{1}{2}$  lines.—Head, thorax, and legs black; abdomen blue-black, and with narrow pale yellow fasciæ. Head closely punctured, most closely so on the face; the mandibles black; the labra rufo-piceous; the flagellum fulvous beneath. The prothorax closely punctured; the mesothorax with scattered punctures; the metathorax impunctate at the base, the truncation punctured with radial striæ that radiate laterally from the centre; a fureate puncture on the mesothorax, a short stripe over the tegulæ, the scutellum, the postscutellum, and a longitudinal stripe in the middle of the metathorax that narrows to its apex, also a line at the lateral margin of the metathorax, yellow; the posterior coxæ with a yellow spot in front; the tibiæ and tarsi obscurely rufo-piceous; the abdomen with a dark fuscous stain on the anterior margin of the first segment. The basal segment of the abdomen with a lateral angular yellow spot; the basal margins of the first to fourth segments with narrow

pale yellow; the terminal segment longitudinally striated, its apical margin rufo-testaceous.

*Hab.* Brazil, St. Paulo.

#### 10. *Myzine albomaculata*.

*Male.* Length 6 lines.—Black, shining, and sparingly punctured. Head with a few fine punctures, the cheeks and clypeus having a little hoary pubescence. Two small subovate maculæ on the prothorax above, a similar one on its sides, a small transverse one on the mesothorax at the margin of the scutellum, a small spot at the basal margin of the metathorax in the middle, and a subovate one at its posterior lateral angles, white; the posterior tibiæ with a row of spines on their outer margin; wings subhyaline, the nervures black, the tegulæ pale testaceous. Abdomen with a subovate macula on the second and third segments laterally; the apical segment densely covered with short brown pubescence; its margin pale testaceous or white.

*Female.* Length 4 lines.—Black, shining, the head and thorax finely punctured and variegated with yellow; the segments of the abdomen not constricted. The clypeus, mandibles, and scape of the antennæ in front, white; the flagellum fulvous beneath towards the base. Two subovate spots on the prothorax, a smaller one on the mesothorax at the base of the scutellum, a spot on the latter, the postscutellum, and a minute spot at the base and also at the apex of the metathorax, yellowish white; the tibiæ, tarsi, and apex of the four anterior legs, pale yellow; the anterior and intermediate tibiæ behind, and the posterior pair at their apex, black; the claw-joint of the tarsi black or fuscous; wings hyaline and iridescent. Abdomen smooth and shining.

*Hab.* Para; Tunantins and Ega on the Amazons.

The sexes taken *in coitû* by Mr. H. W. Bates.

#### 11. *Myzine iridipennis*.

*Male.* Length  $5\frac{1}{2}$  lines.—Black, shining, and very finely punctured. Head narrowed behind the eyes; the anterior margin of the clypeus, and of the face to the eyes, and also the mandibles, white, the last black at their apex; antennæ entirely black; two minute spots between the antennæ, sometimes obsolete. A narrow interrupted line on the anterior margin of the prothorax; the metathorax with white pubescence at the sides; wings hyaline at the base, nearly to the extremity of the externo-median cell, from there fuscous with a brilliant violet iridescence. Abdomen with the apical margins of the segments very narrowly and indistinctly rufo-testaceous.

*Hab.* Amazons, Ega.



12. *Myzine confusa*.

*Male*. Length 4 lines.—Head and thorax black, abdomen ferruginous. The mandibles ferruginous, the flagellum fulvous beneath, the vertex smooth, shining, and impunctate. The pro- and mesothorax with fine scattered punctures, smooth and shining; the metathorax coarsely rugose; the tibiae and tarsi ferruginous; wings hyaline and iridescent, the nervures rufo-testaceous, the stigmalia fuscous. Abdomen subpetiolate, smooth, and shining; the basal half of the first segment black.

*Hab.* Amazons, Ega.

13. *Myzine agilis*.

*Female*. Length 8 lines.—Black, shining, and punctured, variegated with pale yellow markings; wings fulvous, their apex fuscous and iridescent, nervures ferruginous. The antennæ, two spots between them, the clypeus, and mandibles ferruginous, the tip of the latter black; a narrow yellow line at the inner orbits of the eyes towards their summit, with scattered punctures above the antennæ. The pro- and mesothorax with strong but not numerous punctures; the metathorax truncate, the base rugose; at the vertex of the truncation transversely carinate, the truncation with radiating striae; the margins of the prothorax yellow, the anterior interrupted; the postscutellum and a spot beneath the wings yellow; the legs ferruginous. Abdomen smooth and shining; a large ovate macula on the basal segment; the second segment with a short lateral line near the middle and a short one at its base; the third and fourth segments with transverse narrow fasciae, that on the latter slightly interrupted, and the fifth segment with a widely interrupted narrow fascia, pale yellow beneath black.

*Male*. Length  $7\frac{1}{2}$  lines.—Black; the clypeus, mandibles, scapulae, front, and a spot above each antenna yellow. The prothorax with tegulae, a V-shaped spot on the mesothorax, a lunate one on the scutellum, the postscutellum, a spot beneath the wings, the tarsi, and apex of the femora, yellow; wings hyaline, the nervures ferruginous. The segments of the abdomen with uninterrupted yellow fasciae; beneath, the fasciae are narrower, attenuated, and interrupted in the middle.

*Hab.* Nicaragua.

14. *Myzine bicincta*.

*Female*. Length  $5\frac{1}{2}$  lines.—Black; the metathorax yellow, the abdomen with a violet iridescence, and with a narrow yellow fascia at the base of the third and fourth segments. The mandibles, and antennæ ferruginous, the latter more or less

above; punctured. Thorax closely punctured anteriorly, but more finely and distantly so behind; a quadrate macula on the mesothorax, a line over the tegulae, the scutellum, and postscutellum pale yellow, the latter with an angular black spot at the base laterally, and also two oblong ones on the truncation; wings hyaline and iridescent, the nervures ferruginous, with a fuscous cloud in the marginal cell; the legs ferruginous, the posterior pair with the coxæ and the femora above yellow. The second, third, and fourth segments of the abdomen beneath with interrupted yellow fasciæ, the first broadest.

*Hab.* Brazil?

Believed to be from Swainson's collection.

#### 15. *Myzine fallax*.

*male*. Length 6 lines.—Black: the abdomen with shades of blue and violet, and having two uninterrupted yellow fasciæ. Head strongly punctured; the mandibles ferruginous towards their apex; a narrow ferruginous line at the inner orbits of the eyes, and an abbreviated one behind them. The pro- and mesothorax strongly punctured, the metathorax semiopaque; an interrupted fascia on the anterior margin of the prothorax, a line beneath the wings, and the lateral margins of the metathorax, ferruginous; wings subhyaline, with a fuscous stain on the anterior margin of the fore wings. Abdomen with an ovate lateral macula on the basal segment; the third and fourth segments with a yellow fascia towards their basal margins, the fifth segment with a narrow interrupted fascia; the apical segment longitudinally striated, and obscurely ferruginous at its apex; beneath with a lateral macula on the second and third segments.

*female*. Length  $6\frac{1}{2}$  lines.—Black, and with orange-coloured spots and fasciæ. The clypeus, mandibles, and two spots at the insertion of the antennæ ferruginous. The margins of the prothorax, the anterior one interrupted, a quadrate spot on the disk of the mesothorax, the scutellum, postscutellum, and lateral margins of the metathorax, orange-yellow; the anterior and intermediate tibiae and tarsi and the apex of the femora, yellow; the intermediate tibiae black behind; the posterior tibiae at their base yellow, as well as the tarsi. The apical margins of the segments with orange fasciæ, those on the first and second segments emarginate in the middle, and also notched laterally.

*Hab.* Mexico.

#### 16. *Myzine flavicornis*.

*female*. Length 7 lines.—Black, punctured, the flagellum of the antennæ orange-yellow; the wings dark brown, with violet iridescence. Head with the vertex shining and not very closely

punctured; the face and cheeks with a little black pubescence. The mesothorax shining and sparingly punctured, the scutellum more closely so; the metathorax opaque and rather finely rugulose. Abdomen smooth and shining, and with very fine scattered punctures; beneath sparingly but more strongly punctured.

*Hab.* Chili.

### TIPHIA, Fabr.

#### 1. *Tiphia fulvipennis*.

*Female.* Length 6–7 $\frac{3}{4}$  lines.—Black, shining, and punctured; wings fulvous, with ferruginous nervures, the stigma obscure. The head strongly punctured; the flagellum fulvous beneath, obscurely so above; mandibles obscurely rufo-piceous. The pro- and mesothorax strongly punctured; the metathorax opaque and truncate with two longitudinal carinæ above, slightly approximating at the verge of the truncation, and having a short carina between them at the base of the metathorax. Abdomen with fine punctures which are closest towards the apex; the margins of the segments with a thin fringe of white hairs; similarly punctured and fringed beneath.

*Male.* This sex strongly resembles the female, but is more finely punctured.

*Hab.* Albania, Servia.

#### 2. *Tiphia consueta*.

*Female.* Length 4 lines.—Black, shining, and punctured, the abdomen impunctate at the base, and very finely punctured beyond the second segment. The face closely punctured, the vertex less closely so. Thorax closely punctured, the metathorax impunctate, with three longitudinal subparallel carinæ; the apical half of the wings slightly fuscous.

*Hab.* Ceylon.

#### 3. *Tiphia natalensis*.

*Female.* Length 4 lines.—Shining black, punctured, and with hyaline wings, nervures brownish black. Head not very closely punctured; antennæ ferruginous beneath and fuscous above; mandibles ferruginous. The pro- and mesothorax punctured, the metathorax impunctate, with three longitudinal carinæ, the first ones slightly approximating towards the verge of the truncation. The tibiæ obscurely rufo-piceous, the tarsi paler. Abdomen

punctured, the apical segment more strongly and closely so and ferruginous at its apex.

*Hab.* Natal.

#### 4. *Tiphia rugosa*.

*Female.* Length  $6\frac{1}{4}$  lines.—Black; the head and pro- and mesothorax coarsely punctured, the abdomen rather finely so, the wings dark fuscous. The antennæ fulvous beneath, the mandibles obscurely ferruginous. The hinder margin of the prothorax smooth and shining; the metathorax semiopaque, and having three longitudinal carinæ, the lateral ones slightly converging to the verge of the truncation; the anterior tarsi and the apex of the joints of the intermediate and posterior pairs rufo-testaceous. The punctures on the third and following segments of the abdomen oblong and with a tendency to run into striæ.

*Hab.* Zulu.

#### 5. *Tiphia penetratrix*.

*Male.* Length  $2\frac{1}{2}$  lines.—Black and punctured, with ferruginous antennæ. The face closely punctured, the vertex more distinctly so and shining; the scape black; the mandibles ferruginous. The pro- and mesothorax punctured; the metathorax with three subparallel carinæ; the sides delicately aciculate; wings hyaline and iridescent, the nervures testaceous, the stigma black; the anterior and intermediate tibiæ and tarsi, and the posterior at the apex of the joints, pale ferruginous. Abdomen smooth and shining, pubescent towards the apex.

*Hab.* Sierra Leone.

#### 6. *Tiphia solitaria*.

*Male.* Length 5 lines.—Black, the abdomen very smooth and shining, and having only a few delicate scattered punctures; wings fusco-hyaline, clear towards their base. Head closely punctured, the pro- and mesothorax less closely so; the metathorax impunctate, and having three subparallel carinæ; the anterior tibiæ ferruginous in front, and the apical joints of the tarsi rufo-testaceous.

*Hab.* Ega, on the Amazons.

This is probably the male of *T. parallela*.

#### 7. *Tiphia parallela*.

*Female.* Length  $5-6\frac{1}{2}$  lines.—Black and shining, punctured, except the metathorax above, which has three longitudinal parallel

carinæ, the two outer ones extending from the base to the apex, the central one not quite running to the apex; a carina runs along the margin of the truncation and up the lateral margins. The head strongly punctured; the face with fine white downy pile; the mandibles ferruginous, with the base and apex obscurely so. The pro- and mesothorax with strong punctures; wings fuscous, somewhat paler at their apex. Abdomen with fine scattered punctures, most closely punctured on the apical segments, the terminal segment rugose; the segments fringed at the sides and beneath with thin white pubescence.

*Hab.* Amazons, Ega.

#### 8. *Tiphia salutatrix*.

*Female.* Length  $3\frac{1}{2}$  lines.—Black and shining, punctured, except the two basal segments of the abdomen, the scutellum, and the metathorax, which are smooth and shining, the latter with three central longitudinal carinæ that are nearly parallel, very slightly converging towards the verge of the truncation, which has a raised carina that runs up the lateral margins. The head, pro- and mesothorax with fine distant punctures; the mandibles ferruginous, the antennæ very obscurely so. The anterior and intermediate tibiæ and tarsi, and the tips of the femora, dark ferruginous; wings subhyaline, the nervures and outer margin of the tegulae rufo-testaceous. The third and following segments of the abdomen finely punctured; the apex ferruginous.

*Male.* The size of the female.—The head and thorax more closely punctured; the flagellum of the antennæ fulvous beneath; the mandibles ferruginous towards their apex. The wings subhyaline, with the nervures and stigma black; the scutellum punctured, the apical margins of the segments distinctly punctured.

*Hab.* Amazons, Ega.

#### 9. *Tiphia campanula*.

*Male.* Length  $3\frac{3}{4}$  lines.—Black and shining, punctured, except the two basal segments of the abdomen and the metathorax, the latter with three subparallel carinæ, the middle one with a deep groove on each side. The head finely punctured, the face with a few downy pile; the pro- and mesothorax finely punctured; wings subhyaline, becoming hyaline towards the base, the nervures and stigma black. Abdomen with the first segment bell-shaped, much narrower than the second segment, beyond which it is cylindrical but not closely punctured; beneath finely punctured.

*Hab.* Ega.

This species resembles the male of *T. salutatrix*, from which it

differs in being a more slender insect, in having the second submarginal cell much narrowed towards the discoidal cells, and in having the first segment of the abdomen as long as broad: in *T. salutatrix* the segment is short and transverse.

#### 10. *Tiphia oblonga*.

*Female*. Length 5½ lines.—Black, with fusco-hyaline wings: the metathorax oblong, more so than usual. Head closely punctured and gradually narrowed behind the eyes. The pro- and mesothorax punctured the same as the head: the scutellum sparsely punctured; the metathorax impunctate, with three longitudinal parallel carinae, the middle one short and not distinctly formed. The two basal segments of the abdomen impunctate and shining, the following segments finely so; the terminal segment with pale pubescence, its apical margin rufo-testaceous.

*Hab.* Columbia.

#### 11. *Tiphia clypeata*.

*Male*. Length 4 lines.—Black, with the clypeus and mandibles white. Head and thorax closely punctured; the metathorax longitudinally rugose; the usual three carinae not distinctly observable, but are parallel and rather wide apart; wings hyaline, the nervures black. Abdomen finely punctured, the segments with a fringe of pale fulvous pubescence above and beneath.

*Hab.* Mexico, Oajaca.

#### 12. *Tiphia subspinosa*.

*Male*. Length 5 lines.—Black, punctured; the wings hyaline, iridescent, and faintly clouded at their apex. The head closely punctured; the antennae as long as the thorax; the face and cheeks with thin white pubescence. The thorax closely punctured; the metathorax rugose and with three longitudinal carinae, the lateral ones approximating towards the verge of the truncation; the prothorax narrowed towards the head; the lateral angles of the anterior margin subspinose; the tegulae smooth and shining. Abdomen rather strongly punctured; the first segment longer than broad, and having a central impressed line.

*Hab.* Mexico.

This differs from the male of *T. parallela* and *T. inornata* in having the angles of the prothorax subspinose, and in the strongly punctured abdomen.

13. *Tiphia intricata*.

*Female*. Length  $5\frac{1}{2}$ –7 lines.—Black. The head, pro- and mesothorax with strong confluent punctures; the metathorax smooth and shining, and with three longitudinal carinæ, the lateral ones approximating to the verge of the truncation; the wings subhyaline, the nervures brownish black, the tegulæ smooth and shining; the legs with glittering white pubescence. Abdomen shining, with scattered, shallow, rather fine punctures; the apical segment with strong confluent punctures.

*Male*. Length  $4\frac{1}{2}$ –5 lines.—Resembles the female in having confluent punctures on the head and thorax; the head, thorax, and legs are much more pubescent.

*Hab.* South Mexico, the eastern slope of the mountains, and Oajaca.

## DIMORPHOPTERA, Smith.

1. *Dimorphoptera cognata*.

*Female*. Length 5 lines.—Black and shining; punctured, sparingly pubescent, and having the mandibles and legs ferruginous. The clypeus shining, smooth, with the sides punctured; the face closely punctured, the vertex sparingly so. The prothorax, the disk of the mesothorax, and the metathorax finely punctured, the two former with distant strong punctures; wings fusco-hyaline, the nervures and stigma black; a little white pubescence at the sides of the metathorax; the coxæ and trochanters black. Abdomen very finely and closely punctured, and with a downy pile at the base of the segments laterally; beneath, the second segment with a few scattered punctures, the rest closely and finely punctured, their margins fringed with white pubescence.

*Hab.* Swan River.

Has a general resemblance to *Tiphia femorata*, but the basal segment is not constricted.

2. *Dimorphoptera lævifrons*.

*Female*. Length  $3\frac{1}{4}$  lines.—Black and shining. The head impunctate; the antennæ fulvous beneath; the mandibles ferruginous. The prothorax smooth, except in front, where it is finely punctured; wings fusco-hyaline, the nervures and stigma black; the legs obscurely rufo-piceous, the apical joints of the tarsi palest. Abdomen impunctate.

*Hab.* South Australia.

**SCOLIA**, Fabr.*(Dielis, Sauss.)***1. Scolia albofimbriata.**

*Female.* Length  $9\frac{1}{2}$  lines.—Black, with fulvo-hyaline wings. Front of the head, as high as the emargination of the eyes, closely punctured, above with a few scattered punctures, the vertex being impunctate. Thorax strongly punctured, the disk, and also the scutellum, sparingly so; the wings with violet iridescence; the pubescence black, but with a thin fringe of white hairs on the legs beneath. Abdomen with a very obscure violet or blue tinge; the base punctured; the second and third segments with a few very fine distant punctures, the following segments with strong punctures at their apical margins; the terminal segment rugose; a thin short white fringe on the apical margins of the first, second, and third segments.

*Male.* Of the same colour as the female, but the first segment of the abdomen is much narrower than the second, with a short petiole and clavate.

*Hab.* Costa Rica, Cache.

**MUTILLIDÆ**, Leach.**MUTILLA.**

Mutilla, *Linn. Syst. Nat.* i. 966.  
Tiphia, pt. *Rossi, Faun. Etrus.* ii. 68.

## AFRICAN SPECIES.

Div. I. *With the thorax ferruginous.* (Sp. 1–12.)**1. Mutilla obtusa.**

*Female.* Length 4 lines.—Black; the thorax ferruginous above; the abdomen with a spot of pale yellowish-white pubescence on the basal segment, two on the second segment, and the third covered with similar pubescence. Head nearly as wide as the thorax, rugose, with the antennæ obscurely ferruginous; the mandibles ferruginous, with their tips black. Thorax quadrate and longitudinally rugose, abruptly truncate behind; the tarsi ferruginous. Abdomen short, subglobose; the basal segment with a pubescent



spot, two on the second, and the third covered with white; the erect pubescence on the insect beneath is white.

*Hab.* Cape of Good Hope.

## 2. *Mutilla angulata*.

*Male.* Length 7 lines.—Black; the mesothorax and scutellum ferruginous. The head very closely punctured, the eyes emarginate. wings with two submarginal cells. The thorax rugose-punctate, the mesothorax most coarsely so and widest posteriorly; wings brown, palest towards their base, the tegulæ ferruginous. The first and second segments of the abdomen strongly punctured, the first with a patch of white pubescence on its apical margin laterally, the third segment with a broad slightly interrupted white fascia; the entire insect thinly sprinkled with erect white pubescence, except that on the second and apical segments of the abdomen, which is fuscous.

*Hab.* Cape of Good Hope?

This species resembles *Mutilla miranda* in having the posterior lateral angles of the metathorax produced; but that insect has the head ferruginous, and is from India; the present species is believed to be from the Cape. It is from the Shuckardian collection.

## 3. *Mutilla purpurata*.

*Male.* Length  $5\frac{1}{2}$  lines.—Head, antennæ, the thorax at the sides beneath, the metathorax, and legs black; the abdomen dark purple; the thorax ferruginous above. The head very closely and strongly punctured. The thorax rugose, the metathorax coarsely so; wings dark fuscous, subhyaline at their extreme base; the legs with thin white pubescence. The apical margins of the first and second segments of the abdomen with a white pubescent fascia, the third segment covered with the same, the second segment finely punctured.

*Hab.* Natal.

## 4. *Mutilla dolosa*.

*Female.* Length 4 lines.—Head and abdomen black, the thorax ferruginous, the legs obscurely so; two small ovate spots on the second segment, and the third with a fascia of bright white pubescence. Head large, much wider than the thorax, and strongly and closely punctured; the tubercles at the base of the antennæ bright ferruginous, and each having a short black tooth above. The scape of the antennæ obscurely ferruginous; the mandibles ferruginous in the middle. Thorax oblong-quadrate, slightly narrowed in the middle, very coarsely rugose, irregularly sculptured.

ordinally, the grooves with oblong punctures. The abdomen with erect white pubescence, very thinly scattered above, more dense at the sides beneath and at the apex above.

*Hab.* Natal.

#### 5. *Mutilla comparata*.

*Female.* Length 5-5½ lines.—Black; thorax dark red; abdomen with two yellowish-white spots on the first segment, the third covered with similar pubescence, but slightly interrupted in the middle. The head wider than the thorax, and coarsely rugose. The thorax nearly as wide anteriorly as long, more coarsely rugose than the head, being sculptured with deep oblong punctures, narrowed towards the metathorax, somewhat abruptly so a little beyond the middle; the legs with thin erect white pubescence. The second segment of the abdomen with a narrow smooth space at its base, which has deep rounded punctures beyond, covered with deep elongate punctures, which are more or less confluent, thinly sprinkled with erect black hairs, those on the white spots are white and erect.

*Hab.* Natal.

This species resembles the *M. bilamata* of Gerstaecker; but the thorax is of a different form, the spots on the first abdominal segment occupy its sides, and there are no spots on the apical margin of the second segment.

#### 6. *Mutilla prædatrix*.

*Female.* Length 3½ lines.—Head, legs, and abdomen black, thorax ferruginous; a pubescent macula on the first segment, another in the middle of the second, and the third segment with a broad fascia of bright yellowish-white pubescence. The head about the same width as the thorax, rugose, and, in some examples, very indistinctly ferruginous on the vertex. Thorax oblong-quadrate, the sides parallel; the truncation of the metathorax, as well as thorax above, rugose-punctate, the punctures oblong and running into irregular striæ. The second segment of the abdomen punctured in a similar manner to the thorax, but less coarsely so.

*Hab.* Natal.

#### 7. *Mutilla inconspicua*.

*Female.* Length 3 lines.—Head, legs, and abdomen black, the former rather wider than the thorax, which is red above; the abdomen with two white fasciæ. Head rugose, having long confluent punctures; the mandibles ferruginous at their tips. Thorax oblong, narrowed behind and covered with irregular rows of coarse

oblong confluent punctures above, smooth and shining at the side. Abdomen oblong-ovate, covered with oblong, irregular, confluent punctures; the apical margin of the first segment with a narrow fascia of white pubescence, the third covered with similar pubescence; beneath, evenly punctured.

*Male.* The size of the female, but differs in colouring, having the metathorax black and covered with large coarse punctures. Head not wider than the thorax; the eyes emarginate. The wings fulvous, and with three distinct submarginal cells. The abdomen with the first segment strongly, and the second finely, punctured with white fasciæ similar to those of the female.

*Hab.* Natal.

#### 8. *Mutilla stimulatatrix.*

*Female.* Length 5 lines.—Black, with the thorax ferruginous above. The head with golden-yellow pubescence above. Thorax oblong, much narrowed behind and rugose above; the legs with short glittering white pubescence, and, as well as the head and thorax, sprinkled with long black hairs. Abdomen deep velvet-black; silvery-white pubescent spot on the basal segment, an ovate one on the base of the second, and also a larger transverse spot near the apical margin, on each side, with a spot also at the apex of the abdomen, which is thinly sprinkled with black erect pubescence above and with white beneath; the second segment beneath rugose and the margins of all the segments fringed with white pubescence.

*Var.?* With the antennæ, tibiæ, and tarsi ferruginous, of the same form, and with similar markings.

*Hab.* South Africa.

#### 9. *Mutilla petulans.*

*Female.* Length  $2\frac{1}{2}$  lines.—Head, abdomen, and legs black; the thorax ferruginous and oblong-quadrate. Head as wide as the thorax, rugose, with the mandibles ferruginous in the middle. Thorax rugose, truncate anteriorly and posteriorly, the sides parallel. Metathorax, the sides beneath, and the legs with erect scanty pale fulvous pubescence. The abdomen with two ovate spots on the second segment of pale fulvous pubescence, an interrupted one of the same on the third; the apical segment longitudinally smooth and fringed at the sides with pale pubescence.

*Hab.* West Africa.

#### 10. *Mutilla horrida.*

*Female.* Length  $5-5\frac{1}{2}$  lines.—Coarsely rugose, the head and abdomen

black; the thorax obscure pink-red. The head narrower than the thorax, which is a little longer than broad, subquadrate, and widest in the middle, having a thinly-scattered short black pubescence above, on the sides and beneath it is cinereous; the legs have but a few scattered pale hairs. Abdomen with the second segment coarsely rugose, but less so at its apical margin; two pale gold-coloured ovate pubescent spots on the basal segment; the third segment covered with similar pubescence, but interrupted in the middle; beneath, the segments fringed with pale pubescence.

*Hab.* Zambesi, Lake Nyassa.

#### 11. *Mutilla guttata*.

*Female.* Length  $4\frac{1}{2}$  lines.—Black, with the thorax ferruginous above. The head with pale golden-coloured pubescence; the antennae and the base of the mandibles obscurely ferruginous. The thorax oblong, rounded in front, and narrowed to the metathorax, coarsely rugose, and sprinkled with pale glittering golden-coloured pubescence; the legs have a similar pubescence. The basal segment of the abdomen subglobose and covered with silvery pubescence; the second segment with three large ovate, bright gold-coloured pubescent maculae, a similar macula at the apex of the abdomen; beneath, the second, third, and fourth segments are fringed with white pubescence.

*Hab.* Madagascar.

#### 12. *Mutilla penetrata*.

*Female.* Length 5 lines.—Head a little wider than the thorax, black, with the vertex obscurely ferruginous, and covered with large deep oblong punctures that are more or less confluent. Thorax ferruginous, quadrangular, truncate anteriorly and posteriorly, coarsely rugose, the punctures large, oblong, and running into irregular striae; the legs with glittering white pubescence. The abdomen with an ovate pubescent macula at the apical margin of the first segment, two placed laterally towards the apical margin of the second segment, one in the middle of its apical margin, and a similar spot on the margins of the three following; these unite, forming a central line; beneath, the second and following segments are fringed with white pubescence.

*Hab.* Madagascar.

### Div. II. *Head and thorax ferruginous.* (Sp. 13-17.)

#### 13. *Mutilla decipiens*.

*Female.* Length  $2\frac{3}{4}$ - $3\frac{1}{2}$  lines.—Head, scape, two or three of the basal joints of the antennae, the mandibles, palpi, thorax, and legs

ferruginous. The head rugose. The thorax oblong, narrowed posteriorly, rugose, and not so wide as the head; the tips of the femora more or less fuscous. The margin of the basal segment of the abdomen, an ovate spot in the middle of the second segment its apical margin, and the third segment covered with pale gold-coloured pubescence; beneath dark rufo-piceous, the second segment punctured, and all the segments fringed with pale pubescence.

*Hab.* Natal.

#### 14. *Mutilla imitatrix*.

*Female.* Length 2 lines.—Ferruginous, with a black fascia on the apical margins of the first and second segments. Head strongly and closely punctured, wider than the thorax; the tips of the mandibles and apical joints of the antennæ black. Thorax oblong-quadrate, and with strong confluent punctures above, truncated posteriorly, the truncation strongly punctured. Abdomen closely punctured; the third and following segments with pale pubescence.

*Hab.* Natal.

This species has a strong general resemblance to *M. ferruginea* of North America, but is distinguished from it by its quadrate thorax.

#### 15. *Mutilla specularis*.

*Female.* Length 3–3½ lines.—Black; the vertex of the head, the tubercles at the base of the antennæ, the mandibles in the middle, and the thorax ferruginous. The head rugose, the thorax coarsely so and oblong-quadrate; the head and thorax sprinkled with erect fuscous pubescence, beneath, as well as the legs, white. The second segment of the abdomen with two pale gold-coloured pubescent maculæ, and the third and following segments covered with similar pubescence, interrupted in the middle.

*Hab.* Natal.

#### 16. *Mutilla crudelis*.

*Female.* Length 8 lines.—Black, with the head and thorax ferruginous above; the former large, subquadrate, much wider than the thorax, and coarsely rugose; the flagellum of the antennæ and base of the mandibles ferruginous. The thorax quadrate and deeply longitudinally grooved; the metathorax black, and opaque; the sides concave and shining; the legs cinereous pubescence; the apical joints of the tarsi ferruginous. An ovate bright gold-coloured pubescent macula on the first segment of the abdomen, two on the second, a spot on the third.

margin, in the middle, which unites with a broad fascia on the third segment; dark rufo-piceous beneath, the margins of the segments fringed with pale yellowish pubescence.

*Hab.* Africa.

#### 17. *Mutilla irritabilis*.

*Female.* Length  $6\frac{1}{2}$  lines.—Black, with the head and thorax above ferruginous, and both coarsely rugose; the scape and mandibles at their base ferruginous. The thorax sculptured above with irregular longitudinal grooves, oblong-quadrate, and with an obtuse tubercle on each side a little before the middle; truncate behind; the legs with golden-yellow pubescence. The abdomen with a broad golden-yellow fascia at the base of the second segment, its hinder margin bisinuate; the third and fourth segments with golden pubescence, interrupted in the middle; the basal segment truncate; beneath, all the segments fringed with golden pubescence.

*Hab.* Egypt.

Div. III. *Head and thorax black.* (Sp. 18–25.)

#### 18. *Mutilla exaltata*.

*Male.* Length 7–8 lines.—Black, with the first and second segments of the abdomen ferruginous. The head rugose-punctate; the eyes emarginate; the vertex with thinly scattered black pubescence, that on the face, below the antennæ, and also that on the cheeks cinereous. Thorax coarsely punctured; the prothorax and scutellum with fulvous pubescence; the metathorax coarsely reticulate, the lateral margins crenulated; wings dark brown, the tegulæ strongly punctured. The apical margin of the second abdominal segment, and the third entirely, covered with pale fulvous pubescence; the two basal segments closely punctured; the first segment beneath with a sharp carina, which is produced into an acute spine or tooth; the second segment punctured, and the following fringed with pale pubescence.

*Hab.* Natal.

#### 19. *Mutilla conspicua*.

*Female.* Length 6 lines.—Black; the abdomen with a broad band in the middle of bright coppery-red pubescence, an ovate spot of the same at the base, and a quadrate one near the apex; the basal segment, which is small and subglobose, with silvery-white pubescence. The head small, much narrower than the thorax, and with an ovate silvery-pubescent spot on the vertex. Thorax oblong-quadrate, slightly narrowed posteriorly, coarsely rugose, and, in some examples, of a very obscure reddish huc above; the legs with more or

less of short silvery-white pubescence; the entire insect thinly sprinkled with erect long black hairs. The apical margin of the second segment of the abdomen fringed with white pubescence; the erect hairs on the body beneath are white.

*Hab.* Damara Land and Namaqua Land.

#### 20. *Mutilla atrata*.

*Male.* Length  $4\frac{1}{2}$  lines.—Black; the pubescence white; the clypeus emarginate; the anterior wings with three submarginal red veins. Head strongly and closely punctured, and covered with pubescence that on the clypeus dense; the scape of the antennæ also pubescent. The mesothorax and tegulæ of the wings rugose; the wings fuscous with their base subhyaline; the metathorax with large deep punctures; the postscutellum and the base of the metathorax, in the middle, with dense short white pubescence, the rest of the thorax and the legs with thin erect pubescence. Abdomen punctured not strongly so, and the base of the second segment with dense silvery-white pubescence, all the segments thinly fringed with white pubescence.

*Hab.* Lake Ngami.

#### 21. *Mutilla deformis*.

*Female.* Length 4 lines.—Black; the head much larger than the thorax and nearly twice the width, subquadrate, and very closely punctured; mandibles porrect, bidentate, and slightly ferruginous at their base and apex. Thorax longitudinally rugose, narrow anteriorly, truncate posteriorly, with the margin of the truncation tridentate. Abdomen pyriform; the margins of the second and third segments with narrow fasciæ of yellowish-white pubescence; the fascia on the second segment widens abruptly in the middle into an angular shape; there is also a similar patch in the middle of the margin of the first segment.

*Hab.* Zambesi.

#### 22. *Mutilla fossulata*.

*Female.* Length 7 lines.—Black; the abdomen with two broad yellowish-white fasciæ. The head and thorax very coarsely punctured with elongate deep foveæ, each being filled with short white pubescence; the second segment with a broad fascia of yellowish-white pubescence; the antennæ and legs with cinereous pubescence. The thorax oblong-ovate. The abdomen coarsely sculptured, particularly so at the base, clothed with black pubescence; the second segment with a broad fascia of yellowish-white pubescence; beyond the base of the segment, its anterior margin slightly

in the middle; the third segment covered with similar pubescence; beneath, the segments are fringed with pale pubescence; the second segment with a central longitudinal carina.

*Hab.* Angola.

### 23. *Mutilla rufofemorata*.

*Male.* Length  $8\frac{3}{4}$  lines.—Head, antennæ, thorax, tibiae, and tarsi black; femora ferruginous, coxæ black; abdomen dark purple. The head and thorax rugose; the latter with a central longitudinal carina, an abbreviated channel on each side, not extending to the anterior margin, and a short carina near the tegulæ; the scutellum produced into an obtuse tubercle; wings dark brown, with a bright violet iridescence, the metathorax with the sides rounded and slightly widened posteriorly, with a longitudinal channel in the centre and an abbreviated lateral one. The abdomen finely and distantly punctured. The insect sprinkled with erect black pubescence.

*Hab.* Western Africa.

### 24. *Mutilla versuta*.

*Male.* Length  $6\frac{3}{4}$  lines.—Black, with the pro- and mesothorax and scutellum ferruginous; eyes emarginate; wings with three submarginal cells. Head the same width as the thorax, strongly punctured, most closely so on the face, which, as well as the mandibles, has a thin, erect white pubescence, that on the vertex black. The mesothorax and scutellum closely punctured; the metathorax with large, very shallow punctures; wings dark fuscous, and with a purple iridescence; the tegulæ smooth, shining black; the thorax has on the sides beneath, and also on the legs, a thin, erect, white pubescence. Abdomen subpetiolate, smooth and shining, and with a few fine scattered punctures; the apical segment strongly punctured, with a smooth central longitudinal line.

*Hab.* Fernand Vaz River, West Africa.

### 25. *Mutilla ignava*.

*Female.* Length 7 lines.—Black; the head very large, wider than the thorax, and coarsely rugose; the eyes placed forwards, near the insertion of the mandibles. The thorax oblong, narrower behind and coarsely rugose, and, as well as the head and legs, sprinkled with erect cinereous pubescence. Abdomen slightly shining and rather finely longitudinally rugulose; the first segment with two pale gold-coloured pubescent maculæ; the second segment with a similar macula in the middle of its apical margin; the third segment with a broad interrupted fascia of the same colour, which



nearly occupies the entire segment; thinly sprinkled with erect black pubescence, that on the maculæ is pale.

*Hab.* Lake Nyassa.

This species is allied to *M. bilunata* of Gerstaecker, but differs from it in the form of the thorax, and also in the markings of the abdomen.

#### ASIATIC SPECIES.

Div. I. *Head and thorax ferruginous.* (Sp. 26, 27.)

##### 26. *Mutilla placida.*

*Female.* Length  $5\frac{1}{2}$  lines.—Head, thorax, and legs ferruginous; abdomen black, with the first segment, the apical margin of the second, and the third segment covered with golden-coloured pubescence. The head small, narrower than the thorax, and rugose [the antennæ wanting]. Thorax narrowed from the middle anteriorly and posteriorly; the middle produced at the sides into a tubercle or blunt tooth; rugose above; the legs with fulvous pubescence. Abdomen longitudinally coarsely rugulose; the basal segment small and campanulate.

*Hab.* Bombay Presidency.

##### 27. *Mutilla aurifex.*

*Female.* Length 6 lines.—Head and thorax ferruginous and coarsely rugose, the latter oblong, slightly narrowed behind, and having on each side, a little before the middle, a stout tooth; legs black; the tibiae and tarsi with golden-coloured pubescence. Abdomen black with black pubescence; the basal segment with a small triangular spot of golden pubescence; the second segment with a broad band of golden pubescence, its hinder margin being emarginate on each side; the third and fourth segments covered with golden pubescence, with a narrow longitudinal line in the middle of the third; beneath, the segments are fringed with golden pubescence.

*Male.* Length  $7\frac{1}{2}$  lines.—Coloured like the female, and the head and thorax similarly sculptured; the eyes emarginate. The head and thorax black and covered with golden pubescence, its posterior lateral angles slightly produced and subacute; wings dark fuscous and subhyaline at their base; the tegulæ large and acute; the legs black, the tibiae and tarsi with golden pubescence. Abdomen with similar pubescence to that of the female, but the spot on the basal segment wanting.

*Hab.* Bombay Presidency.

Div. II. *Thorax ferruginous.* (Sp. 28-33.)28. *Mutilla rufitarsis.*

*Female.* Length  $4\frac{1}{2}$  lines.—Head, legs, and abdomen black, thorax ferruginous; an ovate macula of white pubescence at the base of the abdomen, and a fascia towards its apex. The scape, first joint of the flagellum, and base of the mandibles obscurely ferruginous. Thorax oblong-quadrate, slightly widened posteriorly, and coarsely rugose; the tarsi obscurely ferruginous. Abdomen with an ovate silvery-white pubescent macula at the base of the second segment, a small one, which unites with a narrow white fascia on its apical margin; the third segment covered with white pubescence; the apical segment longitudinally striated, and fringed at the sides with pale pubescence; beneath, the segments are fringed with white pubescence.

*Hab.* India.

29. *Mutilla argenteomaculata.*

*Female.* Length  $5\frac{3}{4}$ – $7\frac{1}{2}$  lines.—Black, with the thorax ferruginous above; the vertex of the head and the abdomen with fine silvery-white pubescent ovate maculae. On the cheeks and below the antennae a little white pubescence; the head narrower than the thorax. The thorax oblong and narrow, coarsely rugose above, and having a short, bright rufo-fulvous pubescence; on each side, before the middle, a stout angular tooth; on the sides, beneath, and on the legs a mixture of short silvery-white and long black pubescence; the anterior margin of the thorax more or less black. The second segment of the abdomen with large, deep, coarse punctures; the first segment covered with fulvous pubescence; the second with an ovate silvery-white pubescent macula in the middle of its apical margin, extending onto the base of the following segment; on the margin of the second segment is also a similar white spot on each side of the central one; the fifth segment has a smaller central white spot; all the maculae are thinly sprinkled with white erect hairs, the rest of the abdomen with black; beneath, the pubescence is entirely white.

*Male.* Adorned with silvery-white spots, but has the thorax black, the second segment of the abdomen being more or less ferruginous; the head and the metathorax and the first segment of the abdomen with white pubescence; an ovate spot at the middle of the apical margin of the second, the third with a lateral spot, and a central one on the fifth and sixth; the wings fuscous, becoming subhyaline towards their base; the eyes ovate.

*Hab.* Bombay Presidency.

30. *Mutilla decora*.

*Female*. Length  $2\frac{1}{2}$  lines.—Head black; thorax, antennæ, mandibles and legs ferruginous; abdomen dark purple, observable in certain lights, the basal segment ferruginous. The head very closely punctured, and a little wider than the thorax. The thorax very closely punctured, narrow, and slightly wider anteriorly; the tips of the femora fuscous. The second segment of the abdomen with an ovate spot of white pubescence towards its basal margin; its apical margin, as well as that of the third segment, with a broad fascia of white pubescence.

*Hab.* Pulo Penang.

31. *Mutilla strangulata*.

*Female*. Length  $3\frac{3}{4}$  lines.—Black, with the thorax, legs, and extreme base of the abdomen ferruginous. Head rugose, the punctures being confluent; a little wider than the thorax; the scape base of the flagellum, and the mandibles ferruginous. Thorax rugose, not coarsely so, oblong, strangulated in the middle at the sides, the margins crenulated; the apex of the joints of the legs fuscous. An ovate spot of fulvous pubescence on the first segment of the abdomen, and a fascia of the same on the apical margin of the second segment: beneath, all the segments have a thin fulvous fringe.

*Hab.* North China.

32. *Mutilla deserta*.

*Female*. Length  $3\frac{1}{2}$  lines.—Head and abdomen black, thorax quadrangular and ferruginous. The head and thorax of the same width, the former closely punctured; the mandibles ferruginous in the middle. The thorax of a bright light ferruginous and rather finely rugose; the lateral margins of the metathorax crenulate; the coxae ferruginous. The basal segment of the abdomen with a central ovate spot of white pubescence; the second segment with a white fascia on its apical margin, and the three following segments each with a minute white spot in the middle of their apical margin, the apex white.

*Hab.* Celebes.

33. *Mutilla basalis*.

*Female*. Length  $3\frac{1}{2}$  lines.—Head and abdomen black; the scape, thorax, legs, and basal segment of the abdomen ferruginous. The head finely rugose, rather wider than the thorax; the latter oblong, rugose, the margins finely crenulated, and sprinkled with pale hairs; the tarsi fuscous. Abdomen with an ovate spot of

white pubescence at the base of the second segment, and a fascia of the same on its apical margin; the third segment has also a similar fascia; the apical segment smooth and shining, and fringed at the sides with pale fulvous pubescence.

*Hab.* Sarawak.

This species is very like *Mutilla deidamia* of Borneo, but that species has three ovate white spots on the second segment.

Div. III. *Black, with the legs ferruginous.* (Sp. 34.)

34. *Mutilla exacta.*

*Male.* Length 7 lines.—Black, the legs ferruginous, the abdomen with golden-coloured pubescent fasciae. The vertex of the head longitudinally irregularly punctate-striate; the face with pale golden pubescence; the inner orbits of the eyes slightly notched. The thorax coarsely punctured; the sides, the metathorax, and beneath with thin bright golden-coloured pubescence, that on the tibiae and tarsi of the same colour; the coxae black; the wings fuscous. Abdomen punctured, not very closely so on the second segment; the apical margins of the first, second, and third segments with fasciae of gold-coloured pubescence, that on the following segments is black.

*Hab.* Shanghai.

AUSTRALIAN SPECIES.

Div. I. *The thorax black.* (Sp. 35-41.)

35. *Mutilla auriceps.*

*Female.* Length 6-7 lines.—Black, coarsely punctured; the vertex with bright golden-coloured pubescence, that on the cheeks silvery white. Thorax oblong, its anterior margin slightly rounded, the lateral angles acute, widened nearly to the middle, then narrowed to the metathorax, rugose-punctate; beneath, and also the legs, with scattered white pubescence. The second segment of the abdomen with coarse, irregular, elongate punctures; a spot of silvery-white pubescence in the middle of the basal segment, an oblong one at the base of the second segment, a third at its apical margin, and two smaller ones in a line beyond; at the extreme lateral margins of the second, third, and sometimes of the fourth segment a tuft of white pubescence; beneath, usually more or less obscurely ferruginous.

*Hab.* Australia.

This species is closely allied to *M. formicaria*; but it appears to

be more than a variety, since, independent of the colour of the pubescence of the head being different, its thorax is narrower and more elongate.

### 36. *Mutilla scabrosa*.

*Female*. Length  $4-5\frac{1}{2}$  lines.—Black; the head and thorax with coarse confluent punctures; the flagellum beneath and the mandibles at their base obscurely ferruginous; the entire insect with thinly scattered erect pale pubescence; the legs rufo-piceous, the tarsi ferruginous. The sides of the thorax parallel anteriorly, thence abruptly narrowed to the truncation of the metathorax; the truncation opaque and not visibly punctured. The first and second segments of the abdomen with strong elongate punctures that are more or less confluent and running into striae; in the middle of the margin of the basal segment a little bright pubescence, the second segment fringed with the same.

*Hab.* Swan River.

### 37. *Mutilla pallidicornis*.

*Female*. Length 6 lines.—Black; the head and thorax closely and strongly punctured, the latter most deeply and coarsely so, the punctures becoming confluent and running into irregular striae; the apical margins of the first and second segments of the abdomen with a narrow white pubescent fascia; the fourth and following segments with pale yellowish-white pubescence. The antennae pale ferruginous, and the mandibles ferruginous towards their base. The thorax narrowed beyond the middle to the truncation of the metathorax; the tarsi ferruginous, as well as the coxæ, trochanters, and base of the femora beneath. The entire insect, beneath, with thin white scattered pubescence.

*Hab.* New South Wales.

### 38. *Mutilla hospes*.

*Female*. Length  $4\frac{1}{4}$  lines.—Black; the head rounded behind strongly punctured, the punctures more or less confluent. Thorax anteriorly rounded, narrowed behind the middle; covered above with coarse punctures that run into striae; the intermediate and posterior tibiae with three or four spines exteriorly, the calcanei white. Abdomen finely rugose; a transverse silvery-white pubescent macula at the apical margin of the first and second segment and a central line of the same on the three following segments above, with scattered erect black pubescence, at the sides and beneath with white.

*Hab.* Western Australia, Champion Bay.

39. *Mutilla depressa*.

*Female*. Length 5-6 lines.—Blackish brown, more or less inclining to red-brown; antennæ and legs black. The head small in proportion to the thorax; the vertex with silvery-white, or, in some examples, with pale golden pubescence; rounded behind and strongly punctured. Thorax transverse in front, widened nearly to the middle, then narrowed to the metathorax; coarsely punctured above, and with thinly scattered erect black hairs. Abdomen with strong oblong punctures; the second segment with a central longitudinal depression; a transverse spot of silvery-white pubescence at the margin of the basal segment, and two spots of the same at the apical margin of the second; with scattered black erect hairs above and with white beneath.

*Hab.* Champion Bay.

This species resembles *Mutilla ferruginata*, but the head is longer behind the eyes; the thorax is also longer in proportion. It appears to be more than a variety.

40. *Mutilla jucunda*.

*Female*. Length  $2\frac{1}{2}$  lines.—Head and thorax black, legs and abdomen ferruginous. The vertex of the head with golden pubescence; the antennæ and mandibles ferruginous, the latter black at their tips. The thorax closely punctured; short, rounded anteriorly, narrowed behind the middle and truncate. The basal segment of the abdomen pale rufo-testaceous, a broad elongate patch of bright gold-coloured pubescence extending from the base nearly to the apex; the third, fourth, and fifth segments with black pubescence laterally; beneath, the second and following segments fringed with white pubescence.

*Hab.* Adelaide.

41. *Mutilla fragilis*.

*Male*. Length 3-4 lines.—Black; the metathorax, antennæ, mandibles, legs, and petiole of the abdomen ferruginous. Head transverse; eyes prominent and ovate, punctate and slightly shining. Thorax punctured, the metathorax most strongly so; wings hyaline from the base to the second submarginal cell, and having a fuscous cloud beyond. Abdomen with a short petiole, the first segment with a broad black apical margin, punctured and shining; the apical segment ferruginous; the second, third, and apical segments thinly fringed with white pubescence.

*Hab.* Champion Bay.

Div. II. *Thorax ferruginous.* (Sp. 42-44.)42. *Mutilla pacificatrix.*

*Female.* Length 4 lines.—Head, legs, and abdomen black; the thorax ferruginous. The head with pale golden-coloured pubescence above, that beneath is white. Thorax oblong-quadrate, coarsely punctured, covered with short decumbent pale golden pubescence, and having also erect pale fulvous hairs thinly sprinkled above; the pubescence on the legs white. The abdomen with thin, erect, black pubescence; the basal segment margined with white pubescence; there are two ovate pubescent spots in the middle of the second segment, a little white pubescence in the middle of its apical margin, and a similar minute spot in the middle of the apical margin of the fifth segment; beneath, the segments are fringed with white pubescence.

*Hab.* Champion Bay.

43. *Mutilla auropilosa.*

*Female.* Length  $2\frac{1}{4}$  lines.—The head, femora, apical margin of the second abdominal segment, and the following segments entirely black, otherwise ferruginous; the apical joint of the flagellum black; the head, thorax, and two basal segments of the abdomen covered with short gold-coloured pubescence, and thinly sprinkled with erect pale hairs; the apical margins of the second, third, fourth, and fifth segments black, interrupted in the middle by a line of gold-coloured pubescence; the apical segment black and longitudinally aciculate.

*Hab.* Champion Bay.

44. *Mutilla notabilis.*

*Female.* Length  $3\frac{1}{4}$  lines.—Ferruginous, with the head and anterior margin of the thorax black. The antennæ and mandibles ferruginous; the vertex of the head densely covered with gold-coloured pubescence. Thorax oblong-ovate, closely and rather finely punctured; the sides with dense short whitish pubescence. The abdomen finely rugulose; the second segment with two small oblong pubescent spots towards the base; a broad stripe of gold-coloured pubescence on each side from the apical margin of the second segment to the apex; between the stripes the abdomen is blackish.

*Hab.* Tasmania.

Div. III. *Head and thorax ferruginous.* (Sp. 45-49.)45. *Mutilla albolineata.*

*Female.* Length  $3-3\frac{1}{2}$  lines.—Head and the thorax above ferruginous; the latter beneath, the legs, and abdomen black. The head with golden-coloured pubescence; the antennæ and mandibles ferruginous, strongly punctured. Thorax oblong-quadrate, slightly wider anteriorly; roughly punctured, covered with golden-coloured pubescence, and thinly sprinkled with erect pale fulvous hairs; the legs ferruginous, with the apex of the femora, tibiæ, and of the joints of the tarsi more or less fuscous. Abdomen thinly sprinkled with erect black hairs; a line of white pubescence extending from the base to the apex.

*Hab.* Champion Bay.

46. *Mutilla bipartita.*

*Female.* Length  $2\frac{3}{4}-3\frac{1}{4}$  lines.—The head, thorax, legs, base of the abdomen, and a longitudinal line that widens to the apical margin of the second segment, and then narrows to a point before the apical segment, red. The antennæ fuscous towards the apex; the head with shallow punctures; the mandibles black at their apex; the vertex of the head with erect black pubescence, that on the hinder margin of the vertex and on the cheeks white. The thorax somewhat heart-shaped, transverse in front, slightly widened at the sides, then narrowed to the apex of the metathorax; closely punctured, and sprinkled with erect black pubescence. The sides of the abdomen above black and with black pubescence; that on the basal segment and on the central line white.

*Var. β.* The anterior legs and all the femora dark fuscous:  $2\frac{3}{4}$  lines long.

*Var. γ.* The thorax more elongate, and the femora and anterior tibiæ fuscous: the same size as var. β.

*Hab.* Champion Bay.

47. *Mutilla nitida.*

*Female.* Length 3 lines.—Ferruginous and shining; the flagellum thickened in the middle and black; the head not very closely punctured. The thorax more strongly punctured than the head, the metathorax most strongly so; the apex of the tibiæ and of the joints of the tarsi fuscous. The abdomen finely but not closely punctured; the second segment with a central longitudinal, fuscous, narrow macula; at the base of the abdomen there is a little erect



white pubescence, the segments with a few black hairs on their apical margins.

*Hab.* Champion Bay.

#### 48. *Mutilla quadriceps*.

*Female.* Length  $2\frac{3}{4}$  lines.—Black, with the sides of the head beneath, and also the sides of the thorax anteriorly, the middle of the thorax longitudinally, the legs, and an ovate spot on each side of the second segment of the abdomen more or less obscurely ferruginous. Head wider than the thorax, subquadrate, with the angles rounded; evenly punctured, not strongly so; the anterior margin of the head, the mandibles, and basal portion of the antennæ ferruginous. The thorax short, rounded in front, and narrowed posteriorly, punctured in a similar manner to the head; the apex of the tibiae black. The apical margin of the basal segment of the abdomen with a fascia of white pubescence, two large subovate spots at the apical margin of the second, and a central spot beyond of white pubescence.

*Hab.* Adelaide.

#### 49. *Mutilla scrutata*.

*Female.* Length  $2\frac{2}{3}$  lines.—Head and abdomen ferruginous; the antennæ, legs, and abdomen black. Head and thorax of the same width, the former moderately and closely punctured; the mandibles ferruginous at their base. The thorax covered above with strong confluent punctures; oblong and narrowed behind. The abdomen shining, covered with fine oblong punctures; the margin of the basal segment pale, testaceous; a line of white pubescence from the apical margin of the second segment to the apex of the abdomen; a thin erect black pubescence above, at the sides and beneath it is also thin and white.

*Hab.* Melbourne.

### Div. IV. *Body more or less metallic.* (Sp. 50–53.)

#### 50. *Mutilla bicolorata*.

*Female.* Length  $4\frac{1}{2}$  lines.—Head and thorax green, abdomen purple. The mandibles and antennæ obscurely ferruginous; the legs black behind and the cheeks fringed with white pubescence; the thorax closely and strongly punctured. The thorax oblong, widest at the base before the middle, narrowed to the metathorax, which is truncate above with large confluent punctures; the legs ferruginous, more or less obscurely so above. Abdomen strongly punctured.

punctures on the second segment large and confluent, the segment with two pale yellow ovate maculae towards the apical margin; a line of white pubescence in the centre of the three following segments; beneath ferruginous, and with large oblong punctures on the second segment, the apical margin of the three following segments with a series of fine punctures.

*Hab.* Victoria.

#### 51. *Mutilla æruginosa*.

*Male.* Length  $3\frac{1}{2}$  lines.—Blue-green, varying in tint; the thorax usually blue, with the metathorax more or less green. The antennae, black with the scape blue or green; the head closely punctured, the eyes ovate. The thorax widest a little before the middle; strongly punctured above, the metathorax coarsely so; wings subhyaline, the nervures black; legs blue, and, as well as the head and thorax, thinly sprinkled with white pubescence. Abdomen closely punctured, subpetiolate, and the segments thinly fringed with long white pubescence above and also beneath.

*Hab.* Moreton Bay.

#### 52. *Mutilla vivida*.

*Male.* Length  $4\frac{1}{2}$  lines.—Head and thorax dark blue; abdomen black, with the first segment, which is petiolate, as well as the legs, ferruginous. The head closely punctured, the eyes ovate; the antennae black, thinly sprinkled with erect black hairs above, and with white beneath. The thorax closely punctured, the metathorax coarsely so; wings fuscous, subhyaline towards their base; the tarsi black, with the basal joint of the posterior pair ferruginous; the calcaria white; the coxae and trochanters black. The second, third, and fourth segments of the abdomen fringed with long white pubescence; the tip also white; beneath, the second and third segments fringed with white.

*Hab.* Champion Bay.

#### 53. *Mutilla splendida*.

*Male.* Length 4 lines.—Brilliant green, with golden tints in different lights; the abdomen towards the apex, and also beneath, with burnished coppery effulgence. The head, thorax, and abdomen punctured, the metathorax most strongly so; the mandibles, palpi, tibiae, and tarsi pale ferruginous. The entire insect thinly sprinkled with erect pale fulvous pubescence, most densely so on the apical segments of the abdomen. Wings fuscous, becoming subhyaline towards their base. Eyes large and ovate.

*Hab.* New Guinea.

This species resembles *Mutilla mirabilis*, described in the seventh volume of the Proceedings of the Linnean Society, from Waigiau but that species has the scape and legs entirely ferruginous.

#### SOUTH-AMERICAN SPECIES.

Div. I. *The thorax ferruginous.* (Sp. 54-68.)

##### 54. *Mutilla crassicornis.*

*Female.* Length 2-2½ lines.—Ferruginous, not shining; legs palest. Head, thorax, and abdomen evenly and very closely punctured. The head covered with pale gold-coloured pubescence; the apical margin of the second segment of the abdomen, and the rest of the segment entirely, with similar pubescence to that on the head; the antennæ short and incrassate, darkest towards their apex. The whole insect is clothed with thin, scattered, pale, erect pubescence.

*Hab.* Ega, St. Paulo and Obydos, on the Amazons.

##### 55. *Mutilla ambigua.*

*Female.* Length 3¾ lines.—Black, very closely punctured; the thorax ferruginous and black anteriorly and posteriorly above. The apex of the scape and also of the flagellum ferruginous, and both obscurely so beneath; mandibles ferruginous in the middle. Thorax oblong-ovate; the coxæ ferruginous, the femora obscurely so beneath. Abdomen with the first segment cylindrical, ferruginous and with an acute tooth at the base beneath; its apical margin above with whitish pubescence; the apical margin of the second segment with a fascia of pale yellowish-white pubescence, and the following segments covered with the same; the apex ferruginous.

*Hab.* Obydos.

##### 56. *Mutilla subtilis.*

*Female.* Length 4 lines.—Black; the thorax ferruginous, the apical margins of all the segments of the abdomen with yellowish-white fasciæ. Head large, wider than the abdomen; subquadrate, with a line of pale golden-yellow pubescence running obliquely from the insertion of the antennæ to the eyes and thence to the vertex, then inwardly, where the lines unite. Thorax oblong, very closely punctured, slightly contracted towards the apex; the lateral margins of the metathorax finely crenulated; the tibiæ and tarsi with short whitish pubescence, most dense on the anterior and intermediate pairs; the intermediate and posterior tibiæ spinose anteriorly. The fasciæ on the abdomen continued on the margins of the segments beneath.

*Hab.* Ega.

57. *Mutilla investigatrix*.

*Female*. Length 4 lines.—Black: the head large, subquadrate, much larger than the thorax, the posterior lateral angles produced into a sharp spine: the antennae and mandibles ferruginous. The thorax ferruginous; the lateral margins and the metathorax fuscous or black, widest in front, then somewhat abruptly narrowed, with the sides of the metathorax rounded and denticulate, having also two or three teeth on the margins anteriorly; the legs ferruginous, with the tibiae and tarsi more or less fuscous. The basal segment of the abdomen with white pubescence, which forms a triangular patch, the apex of which extends a little into the base of the second segment, which has a fascia of similar pubescence a little before its apical margin; in the middle the fascia is produced into a triangular shape, which extends to the apical margin; a line of white pubescence continues to the apex. In some examples there is a little white pubescence on the vertex and also on the metathorax.

*Var.* The thorax entirely ferruginous and the legs black.

*Hab.* Ega.

58. *Mutilla detracta*.

*Female*. Length 3 lines.—Black, with the antennae, thorax, legs, and basal segment of the abdomen ferruginous; four or five of the apical joints of the antennae fuscous; the mandibles and palpi ferruginous; the entire insect very closely punctured. Thorax oblong-ovate, the apical joint of the tarsi black. The second segment of the abdomen with two indistinct ferruginous maculae at the base, its lateral and apical margins with a fascia of bright golden-coloured pubescence: the rest of the segments with similar pubescence, their lateral margins black.

*Hab.* St. Paulo.

59. *Mutilla vivax*.

*Female*. Length  $3\frac{1}{4}$ – $4\frac{1}{4}$  lines.—Black, the thorax and legs ferruginous, the former oblong-ovate and with four oblong black maculae, two at the sides anteriorly, and two in a line with them posteriorly. The tubercles at the base of the antennae, the base of the antennae, and middle of the mandibles ferruginous; the head and thorax very closely punctured. The tibiae and tarsi, in small examples, more or less fuscous. Abdomen velvet-black; the basal segment, two large somewhat triangular maculae at the base, and the apical margin of the second segment with a broad fascia of pale golden-yellow pubescence; the other segments covered with the same. A minute tubercle on each side of the thorax a little beyond the middle.

*Hab.* Ega.

60. *Mutilla vindex*.

*Female*. Length  $3\frac{1}{3}$  lines.—Head, and second segment of the abdomen above, black, the latter with two large oblique oblong ferruginous maculæ, which are nearly united anteriorly at the base of the segment; the scape of the antennæ, flagellum beneath, apex of the mandibles, thorax, legs, basal segment of the abdomen, and all the third and following segments ferruginous; the basal segment small and forming a short petiole. The insect closely punctured the head with a central longitudinal carina; the thorax oblong-ovate, the apical margin of the second segment and all the following segments covered with dense short golden-coloured pubescence.

*Hab.* Ega.

61. *Mutilla venatrix*.

*Female*. Length 3 lines.—Pale ferruginous, with the head, flagellum above, and the second segment of the abdomen above, black; the insect very closely punctured. The face with very short golden pubescence; the head with scattered black pubescence, that on the thorax and legs pale fulvous. The thorax oblong-ovate, narrower behind than in front. The lateral and apical margins of the second segment of the abdomen pale ferruginous, and, as well as the following segments, covered with short golden-coloured pubescence interspersed with longer pale hairs; the basal segment of the abdomen small, quadrate, and forming a short petiole.

*Hab.* Ega.

Very like *M. vindex*, differing in the form of the thorax and in having oblique pale maculæ on the second segment of the abdomen.

62. *Mutilla discursa*.

*Female*. Length  $3\frac{1}{4}$  lines.—Head and abdomen black; antennæ, thorax, mandibles, and legs pale ferruginous. The head covered with golden-coloured pubescence; the flagellum incrassate. The thorax and abdomen punctured; the former with a transverse line on the prothorax, two on the mesothorax, and the scutellum. The first segment of the abdomen pale ferruginous, narrow, forming a short petiole; the second segment thinly covered with golden pile, the other segments densely covered with golden-coloured pubescence.

*Hab.* Para.

63. *Mutilla armanda*.

*Female*. Length 3–4 lines.—Head and abdomen black; thorax and legs pale ferruginous. The scape and first joint of the antennæ ferruginous. Thorax about the same width as the head, widened anteriorly to about the middle, thence emarginate.

slightly narrowed to the apex; truncate posteriorly, the margin of the truncation with a row of six or eight spines, sprinkled above with erect fuscous pubescence. The basal segment of the abdomen ferruginous, the second with a broad interrupted fascia in the middle, and the third, fourth, and fifth segments with pale yellowish-white pubescence.

*Hab.* Brazil, Constancia.

#### 64. *Mutilla insidiosa*.

*Female.* Length  $3-3\frac{1}{2}$  lines.—Head and abdomen black, thorax and legs ferruginous. The antennæ and mandibles obscurely ferruginous, the former fuscous above towards the apex, the latter black at the tips. Thorax the width of the head, rather short and fiddle-shaped, very closely punctured, the margins crenulated; legs fusco-ferruginous. Abdomen with the extreme base ferruginous; the second segment with two large transverse, yellowish-red, united maculæ near the apical margin; the following segments ciliated with short white pubescence above and beneath.

*Hab.* St. Paulo and Ega.

#### 65. *Mutilla pectoralis*.

*Female.* Length  $3\frac{1}{4}$  lines.—Head and abdomen black; the base of the antennæ, thorax, and legs ferruginous. The mandibles ferruginous, with their tips black. Thorax narrower than the head, very closely punctured and attenuated behind; above, slightly curved from the front to the apex. Abdomen with the basal segment ferruginous; the second with two oblong-ovate yellowish-white maculæ at the base, its apical margin and the following segments covered with similar coloured pubescence.

*Hab.* Rio de Janeiro.

#### 66. *Mutilla crenulata*.

*Female.* Length  $4\frac{1}{4}$  lines.—Black; the head anteriorly and the thorax above ferruginous, and having short ferruginous pubescence. The head about the same width as the thorax, rounded at the lateral angles of the vertex; the mandibles ferruginous in the middle. Thorax oblong-quadrate, emarginate at the sides towards the apex, rugose above, and with the margins crenulated. Abdomen with a narrow longitudinal line from the base to the apex of silvery-white pubescence, crossed by a similar line on the second segment towards its apical margin; this segment has also a line of the same at the extreme lateral margins; beneath, the segments are fringed with white pubescence.

*Hab.* Venezuela.

*Mutilla crax* resembles this species: but that insect has the scape of the antennæ and legs ferruginous, and the thorax is elongate, black, and with a central line of golden pubescence.

#### 67. *Mutilla auromaculata*.

*Female*. Length 6 lines.—Black; two pale golden pubescent spots on the vertex, extending from the eyes to the posterior margin of the vertex; four spots on the thorax and two on the basal segment of the abdomen. The head as wide as the thorax; the mandibles ferruginous in the middle. Thorax rugose, a little wider in the middle than at the anterior margin, with a short, recurved, lateral tooth at the widest part; there is also a second small tooth halfway towards the anterior margin, behind the widest part it is obliquely and suddenly narrowed; above there is an oblique golden spot on each side at the widest part; the metathorax subparallel with a golden stripe on each side. The second segment of the abdomen with ovate, glabrous, testaceous spots at about the middle of the segments; the third, fourth, and fifth segments with a lateral longitudinal line of pale golden pubescence.

*Hab.* Venezuela.

This species is closely allied to *M. spinosa*, but, independent of its smaller size, its vertex is more quadrate, and the glabrous spots on the abdomen are proportionately smaller. I think it must be more than a local variety.

#### 68. *Mutilla pertinax*.

*Female*. Length  $5\frac{1}{2}$ –6 lines.—Black; a longitudinal macula on the disk of the thorax, an ovate one on the basal segment of the abdomen, and also one on the second segment of ferruginous pubescence. Head very large, wider than the thorax, and rugose punctate. Thorax oblong, narrowed posteriorly; the metathorax truncate, rugose-punctate. Abdomen shining, rather finely punctured, and having a thin black pubescence.

*Hab.* Mendoza.

### DIV. II. *The thorax black.* (Sp. 69–80.)

#### 69. *Mutilla mansueta*.

*Female*. Length 3 lines.—Black, finely rugose, covered with short black pubescence, and sprinkled with erect long black hairs. The head with a short thin hoary pile. The thorax as wide as the head, narrowed behind, and with a little hoary pile near the apex. The

apical margin of the basal segment of the abdomen, and a small triangular spot at the base of the second in the middle, of white pubescence; the apical margin of the second segment has a fascia of white pubescence.

*Hab.* Ega.

#### 70. *Mutilla parasitica*.

*Female.* Length  $5\frac{1}{2}$  lines.—Black, with two large ovate golden-yellow maculae on the second segment of the abdomen. Head wider than the thorax, subquadrate, finely granulated, and with scattered erect black hairs. Thorax granulated, the sides parallel to one third of its length, where there is a small tooth, thence narrowed to the base of the metathorax, which is covered with long silvery-white pubescence and has the lateral margins rounded. The third, fourth, and fifth segments of the abdomen with white pubescence; the apical segment rugose, and with a mixture of black and brown pubescence.

*Hab.* Brazil, Constancia.

#### 71. *Mutilla spinifera*.<sup>†</sup>

*Female.* Length  $4\frac{1}{2}$  lines.—Black; the head and thorax very closely punctured. Head rather wider than the thorax, subquadrate, slightly narrowed from the eyes to the posterior lateral angles, which are acute. Thorax constricted at the base of the metathorax, having four small blunt teeth at the anterior lateral margins, and four acute teeth, or spines, on each lateral margin of the metathorax. The apical margin of the basal segment of the abdomen, and the third and following segments, with silvery-white pubescence; two large, uniting, ovate, pale ferruginous maculae on the second segment.

*Hab.* Para.

#### 72. *Mutilla simulatrix*.

*Female.* Length 3–4 lines.—Black, and with two large, united, ovate, reddish-yellow maculae on the second segment of the abdomen. Head and thorax rugose, the former as wide as the thorax, and thinly sprinkled with white pubescence, as is also the thorax above; the latter has the anterior margin slightly arched, and from thence gradually narrowed to the apex; the tarsi and the posterior tibiae with fine silvery-white pubescence. The first, second, and third segments of the abdomen with silvery-white pubescence; the apical segment with a little long pale fulvous pubescence.

*Hab.* Ega.

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73. *Mutilla solitaria*.

*Female*. Length 3-3½ lines.—Black; head, thorax, and abdomen closely and strongly punctured, the pubescence pale yellowish white. The head with a smooth shining carina running from the margin of the vertex to the insertion of the antennæ. The anterior margin of the thorax, which is oblong and semiovate, the mesothorax posteriorly, the metathorax, and sides of the thorax with fine, thin, short pubescence; the metathorax with a central sharp carina and also a small tubercle at its base laterally. The first segment of the abdomen cylindrical, forming a stout petiole; the apical margin of the second segment, and the following segments entirely, covered with short pubescence; beneath, the second segment fringed with snow-white pubescence.

*Hab.* Obydos.

74. *Mutilla vagabunda*.

*Female*. Length 6 lines.—Black, with four orange-red maculae on the second segment of the abdomen. The head the width of the thorax; the vertex with silvery-white pubescence. Thorax much narrowed posteriorly; a silvery-white pubescent stripe on each side, extending from the point from which the thorax narrows to the apex; the sides silvery; the legs with scattered silvery-white hairs. A row of silvery-white pubescent spots down the middle of the abdomen, commencing at the apical margin of the second segment, a similar row at the extreme lateral margins; the apical segment longitudinally striated.

*Hab.* Santarem.

75. *Mutilla albata*.

*Female*. Length 4 lines.—Black; the head, thorax, and abdomen clothed above with white pubescence, the thorax in front and the second segment of the abdomen with yellowish-white; the legs with a thin white pubescence; the apical joints of the tarsi ferruginous; two ovate denuded spots on the second segment of the abdomen obscure reddish brown.

*Hab.* Ega.

76. *Mutilla diligens*.

*Female*. Length 7 lines.—Black; the vertex covered with silvery pubescence; the abdomen with four orange-yellow maculae. The head much narrower than the thorax, which is oblong, narrow behind, without spines or tubercles, covered with black pubescence, and with longer erect black pubescence at the sides.

legs with black pubescence, on the tibiae and tarsi it is mixed with white. The basal segment of the abdomen very short, forming a flattened scale, the second segment with two ovate maculae at the base, and two that are rather larger towards its apical margin; the third, fourth, and fifth segments fringed with white pubescence at their extreme lateral margins; the apex with white pubescence.

*Hab.* Venezuela.

#### 77. *Mutilla perfidiosa*.

*Female.* Length  $5\frac{3}{4}$  lines.—Black; the abdomen with two large pale ferruginous maculae. Head quite as wide as the thorax, rather finely rugose; a patch of bright silvery pubescence on the vertex; the tubercles at the base of the antennae, the clypeus, and mandibles ferruginous, the latter black at their tips; the flagellum, except two or three of the basal joints, fulvous beneath. Thorax oblong-quadrate, rugose, with the sides slightly rounded anteriorly, then abruptly narrowed, the sides thence parallel to the apex; the metathorax truncate, the truncation with silvery-white pubescence at its lateral margins; a silvery spot on the sides above the intermediate and posterior coxae; the legs with thin white pubescence, the apical joints of the tarsi obscurely ferruginous. The basal segment of the abdomen with two silvery-white pubescent spots; the third and following segments with white pubescence laterally.

*Hab.* Venezuela.

#### 78. *Mutilla sociata*.

*Female.* Length 9 lines.—Black, and clothed with black and silvery-white pubescence. Head not quite as wide as the thorax; the vertex with white pubescence; the face and cheeks with scattered white hairs; the scape with white pubescence. The lateral angles of the prothorax acute, below the angles a short acute tooth; the thorax with a large tooth about midway at its lateral margins; a curved band of white pubescence crosses the thorax about the middle, and the metathorax has on each side a longitudinal stripe of the same. The margins of the basal segment of the abdomen with a broad band of bright white pubescence, interrupted in the middle above; the segment has also a transverse crenulated acute carina before the apical one; the second segment with two ovate pale maculae; the third and following segments with short pale pubescence, more or less interrupted in the middle.

*Hab.* Ecuador.

This species resembles *M. insignis* both in size and general markings, but it differs in having black antennae, in *M. insignis* they are yellow; the head is proportionately considerably smaller, and the metathorax is longer and narrower.

79. *Mutilla albomaculata*.

*Female*. Length  $3\frac{1}{4}$ -4 lines.—Black; the head clothed with white pubescence, and of the same width as the thorax. The thorax clothed above and at the sides with white pubescence; the metathorax black; the legs with white pubescence above. Abdomen with a spot on the basal segment, which is small and subpetiolate, the second segment with four oblong-ovate spots, placed transversely in the middle, the lateral ones longest, and a central spot on the three following segments, of snow-white pubescence; beneath, the second and third segments fringed with similar pubescence.

*Hab.* Chili.

80. *Mutilla erratica*.

*Female*. Length 3 lines.—Black, and adorned with silvery-white markings. The head and scape of the antennæ with white pubescence. Thorax above, the sides, and hinder portion with white pubescence; the truncation black; the legs thinly sprinkled with white. The basal segment of the abdomen with a patch of white pubescence on each side, that on the apical segment, on the apical margin of the second, and also that on the third segment white, the two latter more or less interrupted in the middle. The white pubescence is intermixed with long white hairs, the black with long black hairs.

*Hab.* Mendoza.

Div. III. *Males with two submarginal cells in the anterior wings*  
(Sp. 81-86.)

81. *Mutilla rufoscutellata*.

*Male*. Length  $6\frac{1}{2}$  lines.—Black, pubescent, very closely punctured, the metathorax most strongly so; the scutellum convex, prominent, and ferruginous. Head very large, quite as wide as the thorax, and subquadrate; the scape fringed beneath with white pubescence. The wings dark fuscous, the anterior pair with two submarginal cells, the second incomplete, the second transverso-medial nervure only commenced. Abdomen with the basal segment small and subpetiolate, its apical margin fringed with white pubescence, the second segment, as well as the head and thorax, having a little scattered white pubescence at the sides.

*Hab.* Parana.

The form of this species resembles that of the Vespid *Tamorio*.

82. *Mutilla sordidula*.

*Male*. Length 6 lines.—Black; the pubescence black, except that on the scutellum, the first segment of the abdomen, the apical margin of the second, and the third segment (the two latter more or less interrupted) white. The head the width of the thorax, rounded at the sides. The wings dark fuscous, the anterior pair with two submarginal cells; a minute hyaline spot just beyond the second submarginal cell. The interrupted white pubescent band on the abdomen continued beneath; the apical segments of the abdomen fringed with long black pubescence; the basal segment narrow and subpetiolate.

*Hab.* Mendoza.

83. *Mutilla fascinata*.

*Male*. Length 8 lines.—Black, and clothed with black and white pubescence. Head much narrower than the thorax; the vertex with white pubescence. Thorax with black pubescence, except a little on the scutellum and the thin pubescence on the metathorax, which is white; the intermediate and posterior femora and tibiae, as well as the inside of the basal joint of the posterior tarsi, with white pubescence; wings fuscous, their base, as well as the second submarginal and half of the second discoidal cell, hyaline. Abdomen with the basal segment small, narrow, and subpetiolate; its apical margin and the base of the second segment laterally with white pubescence; the third and fourth segments densely covered with white pubescence.

*Hab.* Peru.

84. *Mutilla marginipennis*.

*Male*. Length 5 lines.—Black; the anterior wings margined with fuscous, and having a hyaline space beneath the marginal cell, which extends a little beyond and also includes the second submarginal and the second discoidal cells. The anterior wings with two submarginal cells. Head narrower than the thorax, subquadrate, and closely punctured. Thorax strongly and closely punctured, the metathorax rugose; the legs with black pubescence, that on the tarsi short and white. Abdomen subpetiolate, the basal segment clavate, closely punctured; the first and second segments with a narrow white marginal fringe; the third and following segments fringed with long black pubescence.

*Hab.* Para.

85. *Mutilla tenuis*.

*Male*. Length 3½ lines.—Black; head and thorax closely punc-

tured, the metathorax with large shallow punctures; abdomen shining, the basal segment with strong punctures. The extreme base and apex of the scape, and the mandibles in the middle, ferruginous; the head as wide as the thorax, transverse, and with griseous pubescence on the face and cheeks. The metathorax, the tibiae, and tarsi with silvery-white pubescence; wings subhyaline and iridescent, palest at their base. Abdomen with the basal segment clavate; the apical margins of the second, third, and fourth segments thinly fringed with long white pubescence, that on the apical segments black.

*Hab.* Ega.

#### 86. *Mutilla irregularis*.

*Male.* Length  $4\frac{1}{2}$  lines.—Black, shining; head and thorax strongly but not closely punctured. Head large, quadrate, rather wider than the thorax, both thinly covered with erect griseous pubescence; wings with two submarginal cells fuscous, palest at their base, the nervures black; the legs with black pubescence, the tarsi fuscous. Abdomen moderately punctured; the first, second, and third segments with their apical margins fringed with white pubescence; the apical segments fringed with black.

*Hab.* South America.

#### Div. IV. *Males with three submarginal cells in the anterior wing* (Sp. 87–100.)

#### 87. *Mutilla oblita*.

*Male.* Length 6–7 lines.—Black; the head and thorax closely punctured, the abdomen more finely so and shining. The head, behind the antennæ, with silvery pubescence; on the vertex it is longer, thin, and scattered. The pro- and mesothorax with short black pubescence, that on the metathorax is short, dense, and silvery-white; wings dark fuscous, with their base hyaline, the anterior pair with three submarginal cells; the legs with white pubescence, the calcaria white. The basal segment of the abdomen bordered with white pubescence, the margins of the other segments with thin fringe of the same; the lateral margins of the second segment towards its apex have also a little white pubescence.

*Var. a.* The head greenish, thorax obscure purple, and the abdomen blue.

*Hab.* Villa Nova, on the Amazons.

88. *Mutilla maculipennis*.

*Male*. Length 7 lines.—Black, closely punctured. Head wider than the thorax; the face with silvery-white pubescence. The metathorax with dense silvery pubescence, the first segment of the abdomen and the base of the second with similar pubescence; the wings dark fuscous and with a purple iridescence, their base hyaline, some hyaline spots in the submarginal and also in the discoidal cells; the anterior wings with two submarginal cells. The second segment of the abdomen has a fringe of white pubescence; the following segments are fringed with black in the middle and with white laterally.

*Hab.* Ega.

This species closely resembles *M. nigrella*, but is separated from it by its mottled wings and much more strongly punctured thorax.

89. *Mutilla excellens*.

*Male*. Length 8 lines.—Head and thorax closely and strongly punctured; abdomen blue, finely and distantly punctured. The head, below the insertion of the antennæ, the cheeks, and hinder margin of the vertex with white pubescence. The prothorax obscurely blue; the mesothorax black, with a purple tinge; the scutellum produced into a prominent conical shape; wings dark fuscous; the anterior pair with three submarginal cells; the metathorax with dense short silvery-white pubescence above. The first segment of the abdomen margined with silvery-white pubescence, and the third and fourth broadly margined with the same, but interrupted in the middle.

*Hab.* Ega.

90. *Mutilla dentata*.

*Male*. Length 6 lines.—Black, punctured; the face below the antennæ, the prothorax, metathorax, the basal segment of the abdomen, and the basal margin of the second segment, its apical margin, as well as that of the third segment, with silvery-white pubescence. The mesothorax strongly punctured; the scutellum produced and triangular, with a large blunt tooth on each side, being a prolongation of the mesothorax, the teeth with deep punctures; wings dark fuscous; the anterior wings with three submarginal cells, the second with a narrow hyaline line, also a small hyaline spot on the third discoidal cell.

*Hab.* St. Paulo.

91. *Mutilla maligna*.

*Male*. Length  $4\frac{1}{2}$  lines.—Black; head and thorax strongly and closely punctured; the abdomen shining and very finely punctured. The head as wide as the thorax, transverse; the face below the antennæ with a little long white pubescence. The metathorax with large shallow punctures, and having posteriorly a fine white pubescence; wings dark fuscous, subhyaline towards the base; the anterior pair with three submarginal cells. Abdomen subpetiolate, narrow, and with white pubescence at the apical margin of the first segment; the other segments with a mixture of black and white pubescence, the white being sparing above, but beneath the abdomen the margins are fringed with white.

*Hab.* Ega.

92. *Mutilla impetuosa*.

*Male*. Length 5 lines.—Black; the head and thorax strongly punctured, the former small and not so wide as the thorax. The metathorax with the sides parallel, truncate behind, and covered with white pubescence; wings dark fuscous and subhyaline at the base, the anterior pair with three submarginal cells, and a small hyaline spot in the first and second submarginal; the posterior tibiae with white pubescence beneath. The first segment of the abdomen subpetiolate, punctured, and with white pubescence at its apex; the second segment with white pubescence at its base laterally; the rest of the segments with the apical margins fringed with black pubescence; the second and third segments beneath fringed with white pubescence.

*Hab.* Para.

93. *Mutilla fugax*.

*Male*. Length 4 lines.—Black, punctured, with the face, metathorax, basal segment of the abdomen, and the apical margin of the second with silvery-white pubescence. The mesothorax and scutellum strongly punctured; wings with three submarginal cells, fusco-hyaline and palest at their base; the tegulae large, with the outer margin rufo-piceous; the sides of the metathorax parallel, the lateral angles acute, subdentate. The basal segment of the abdomen forming a stout petiole. The eyes emarginate.

*Hab.* Para.

94. *Mutilla proxima*.

*Male*. Length  $4\frac{1}{2}$  lines.—Head, thorax, legs, and basal segment of the abdomen black, the rest of the abdomen ferruginous. The head, prothorax, and metathorax with long silvery-white pubescence.

cence; wings hyaline from the base to the apex of the second submarginal cell, beyond they are fuscous, the anterior pair with three submarginal cells. Abdomen subpetiolate, with thinly scattered long white pubescence; the basal segment strongly punctured, its apical margin narrowly ferruginous; the apical segment black.

*Hab.* Para.

This species has a great resemblance to *M. rufiventris*; but it differs from that species in not having the eyes notched, and the venuration of the wings is different, the second submarginal is shorter, and the third is much narrowed towards the third discoidal cell.

#### 95. *Mutilla midas*.

*Male.* Length  $5\frac{1}{4}$  lines.—Black; head and thorax strongly punctured, the metathorax coarsely so; the abdomen clothed with gold-coloured pubescence; the head, pro- and metathorax, as well as the legs, with white pubescence, that at the base of the metathorax dense; the wings subhyaline from the base to the apex of the enclosed cells, beyond the latter they are dark fuscous. Abdomen subpetiolate, strongly punctured, the apical margin only with golden pubescence; the apical segment with black pubescence.

*Hab.* Para.

#### 96. *Mutilla mandibularis*.

*Male.* Length 5 lines.—Black, the mandibles ferruginous. Head large, closely punctured, subquadrate, and having a short thin cinereous pubescence. Thorax shining above, more strongly punctured than the head, the metathorax rugose; the latter, the sides, and also beneath with thin cinereous pubescence; wings fuscohyaline, and with three submarginal cells. Abdomen shining and punctured; the basal segment small and campanulate; the apical margins of the segments with a few pale fuscous hairs.

*Hab.* Ega.

#### 97. *Mutilla hæmarioides*.

*Male.* Length  $8\frac{3}{4}$  lines.—Black, punctured, and with black and white pubescence. Head and thorax with black pubescence, mixed on the vertex, prothorax, and scutellum with a little white; the tibiae and tarsi have a thin white pubescence; the metathorax with large shallow punctures; wings hyaline from the base to the apex of the second submarginal cell, beyond which they are dark fuscous; the nervures black; the anterior wings with three submarginal cells. Abdomen subpetiolate; the apical margin of the first segment with white pubescence, a large patch of the same on each



side of the second segment at its base; the third and fourth segments with white pubescence, more or less interrupted in the middle; the apical segments with black pubescence; beneath, the second and third segments with a narrow fringe of white pubescence.

*Hab.* Uruguay.

#### 98. *Mutilla gracilescens*.

*Male.* Length  $5\frac{3}{4}$  lines.—Head, legs, and abdomen black; thorax and first segment of the abdomen ferruginous; the apical margin of the latter black. Head small and finely punctured, shining and with a little long white pubescence. The mesothorax not very strongly punctured, the metathorax reticulated; the coxæ reticulated; wings with two submarginal cells, subhyaline, pubescent and with the nervures testaceous; the tibiæ and tarsi with white pubescence. Abdomen shining, not very closely punctured; the second and following segments ciliated with long white pubescence.

*Hab.* Uruguay.

#### 99. *Mutilla pubescens*.

*Male.* Length  $5\frac{1}{2}$  lines.—Black, and clothed with black and white erect pubescence. Head small, narrower than the thorax; the pubescence black, with a mixture of white on the vertex. Thorax with short black pubescence in front; the scutellum and the metathorax with longer white pubescence; the intermediate and posterior femora and tibiæ with a little thin white pubescence; the anterior wings with three submarginal cells, subhyaline from base to the marginal cell, the apical portion beyond dark fuscous. Abdomen subpetiolate; the first segment small, campanulate, covered with white pubescence, as is also the base of the second segment, but narrowly so in the middle; the third and fourth segments with white pubescence, interrupted in the middle; the rest of the abdomen with shorter black pubescence.

*Hab.* Mendoza.

#### 100. *Mutilla incana*.

*Male.* Length  $4\frac{1}{2}$  lines.—Black; the head, prothorax, scutellum, apical margin of the first segment of the abdomen, and also the second and third, with long white pubescence; wings hyaline, the anterior pair with three submarginal cells, the nervures fusco-testaceous, the stigma and costal nervure black; the second segment of the abdomen shining, and with thin, short white pubescence; the fifth and following segments with black pubescence.

*Hab.* Mendoza.

## SPECIES FROM CENTRAL AMERICA AND ST. DOMINGO.

Div. I. *With the thorax black.* (Sp. 101-111.)101. *Mutilla melancholica.*

*Female.* Length  $5-7\frac{1}{2}$  lines.—Black, with the thorax more or less obscurely red above, and with black and white pubescence. The head with black pubescence. The thorax and abdomen rugose, the former bidentate on each side; the metathorax clothed with long white pubescence, as well as the intermediate and posterior legs. The basal segment of the abdomen, the apical margin of the second segment, and the third entirely, with long white pubescence; the second segment with a large black tuft; the apical segments entirely clothed with black pubescence.

*Hab.* St. Domingo.

102. *Mutilla araneoides.*

*Female.* Length 6 lines.—Black; the vertex and a semicircular spot on the thorax in front of bright rufo-fulvous pubescence; the head and thorax beneath with white pubescence; a spot on each side of the metathorax, two ovate ones on the second segment of the abdomen, a narrow fascia on its apical margin, the third segment and the fourth laterally covered with bright pale yellowish-white pubescence; the rest of the thorax and abdomen with black pubescence; the legs have a bright pale pubescence, the posterior femora with black pubescence at their apex.

*Hab.* Nicaragua, St. Juan del Sur.

103. *Mutilla macrocephala.*

*Female.* Length  $6\frac{1}{4}$  lines.—Clothed with ferruginous pubescence; head and abdomen obscure ferruginous, thorax black. Head wider than the thorax, subquadrate, the cheeks armed with a sharp spine. The thorax short, narrowed behind; the metathorax with black pubescence. The basal segment of the abdomen and the legs with black pubescence, the second and following segments fringed with black pubescence.

*Hab.* Orizaba.

104. *Mutilla munifica.*

*Female.* Length  $4\frac{1}{2}-7$  lines.—Black, with pubescent rusty-golden spots. Head narrower than the thorax, and covered above with rusty-golden pubescence; beneath, and also on the thorax and abdomen beneath, the pubescence is pale yellowish-white. Thorax

with black pubescence in front and with rusty-golden behind, the latter partly covering the sides of the truncation, which is black in the middle; the legs with a whitish pubescence. Abdomen with black pubescence, and with two ovate, deep, ochraceous maculae at the base of the second segment, and two larger ones towards its apical margin; the maculae with rusty-golden pubescence; the fourth and fifth segments with ochraceous pubescence in the middle.

*Hab.* Mexico.

A smaller example in the collection has the markings clothed with golden-yellow pubescence.

#### 105. *Mutilla ducalis*.

*Female.* Length 7-9½ lines.—Black, clothed with black pubescence; the head above and a broad transverse band on the thorax, which curves slightly backwards, of bright gold-coloured pubescence; the second segment of the abdomen ferruginous above, and having at its base a large, subovate, black pubescent macula; also a smaller ovate macula, placed laterally about the middle of the segment, the apical margin of the segment, and also the third segment, black; the black bands not usually extending to the lateral margin, which have silvery-white pubescence, similar to that which clothes the thorax beneath and fringes the segments of the abdomen; the fourth, fifth, and sixth segments have golden-coloured pubescence above, the fifth with more or less of black laterally.

*Hab.* Orizaba and South America.

A variety from S. America has the two lateral ovate black maculae united with the central black macula, and is full 2 lines larger than the Mexican specimens.

#### 106. *Mutilla luxuriosa*.

*Female.* Length 5½ lines.—Black; the legs ferruginous, adorned with bright golden-yellow pubescent markings. Head large, wider than the thorax and subquadrate; above, covered with golden-coloured pubescence; the antennae obscurely ferruginous. Thorax slightly narrowed behind, above with golden pubescence; the truncation of the metathorax, and a subtriangular space in front black; the coxæ and tips of the femora and tibiæ black. Abdomen with the basal segment black; the second with golden pubescence, a semicircular spot at its basal margin in the middle, a somewhat angular one on each side, and its apical margin, with a broad fascia that is widest in the middle, black; the following segments with pale golden-yellow pubescence.

*Hab.* Mexico.

107. *Mutilla vulpina*.

*Female*. Length  $6\frac{1}{2}$  lines.—Black and densely pubescent; the head with long, suberect, yellowish-white pubescence; the thorax covered with similar pubescence, and having an ovate tuft of black on the disk. The abdomen with a large, semicircular, black pubescent space at the base, then a broad band of yellowish white, followed by one of black, the apex being whitish, except the apical segment, which is black.

*Hab.* Mexico, Oajaca.

108. *Mutilla sapiens*.

*Male*. Length  $3\frac{1}{2}$  lines.—Black; the head and thorax coarsely punctured; the abdomen shining and more finely punctured. The head covered with white pubescence. The metathorax, the basal segment of the abdomen, and the apical margin of the second segment with a fascia of silvery-white pubescence, the basal segment forming a short petiole; wings hyaline, faintly clouded at their apical margins, the nervures black; the tegulae large, testaceous at their tips. Anterior wings with three submarginal cells; the eyes emarginate.

*Hab.* Mexico, Orizaba.

109. *Mutilla ordinaria*.

*Male*. Length  $4\frac{1}{4}$ –7 lines.—Head, thorax, legs, and basal segment of the abdomen black, the other segments ferruginous; wings fuscous and more or less hyaline at their base. The head and thorax strongly punctured; the eyes emarginate; the face and the metathorax with thin white pubescence, the latter with large shallow punctures; a little silvery pile at the basal margin of the metathorax and also behind the wings, the latter with three submarginal cells. Abdomen with fine scattered punctures, and the segments fringed with ferruginous pubescence.

*Hab.* Mexico, Orizaba.

110. *Mutilla terminata*.

*Male*. Length  $4\frac{1}{2}$  lines.—Head, thorax, legs, and the base and apex of the abdomen black, the latter otherwise clothed with bright scarlet pubescence. The eyes ovate; the head, thorax anteriorly, and the scutellum with pale fulvous pubescence; wings with two submarginal cells, dark fuscous at their apex, paler towards their base. The abdomen more or less ferruginous beneath.

*Hab.* Mexico, Oajaca.

111. *Mutilla nana*.

*Male*. Length 3 lines.—Black, punctured, with the disk of the thorax and abdomen shining. Head the width of the thorax, thinly covered with white pubescence; the eyes ovate; the scape of the antennæ and the mandibles obscurely ferruginous. The metathorax with large shallow punctures; the anterior wings fuscous, darkest in the marginal cell, with three submarginal cells; legs fusco-ferruginous. Abdomen finely punctured; the apical margins of the segments thinly fringed with white pubescence.

*Hab.* Mexico, Orizaba.

Div. II. *With the thorax ferruginous.* (Sp. 112-116.)112. *Mutilla derelicta*.

*Female*. Length 6 lines.—Head, antennæ, legs, and abdomen black; thorax ferruginous. Head and thorax rugose, the former the same width as the latter, which is elongate, with the lateral margin nearly parallel, being very slightly narrowed in the middle and rounded anteriorly and posteriorly; the legs with a thin, pale pubescence; the spines at the apex of the tibiæ, and also those at the apex of the joints of the tarsi, pale ferruginous. The apical margin of the basal segment of the abdomen, a large oblong patch on each side of the second segment at its base, a broad fascia on the apical margin, and the following segments covered laterally with yellowish-white pubescence.

*Hab.* Acceytuno, Central America.

113. *Mutilla ferruginea*.

*Female*. Length 6 lines.—Ferruginous, rugose; the head wider than the thorax, subquadrate, the hinder angles acute, the posterior margin nearly straight, densely covered above with pale golden-coloured pubescence, that on the cheeks is thin and silvery-white. Thorax oblong, pyriform, with a thin, short, pale golden pubescence, and, as well as the head, thinly sprinkled with fine pale hairs; the legs with thin pale pubescence; the intermediate and posterior tibiæ with black spines. The first segment of the abdomen small, and with a spot of silvery-white pubescence; the second segment with a subovate patch of black pubescence in the middle towards its basal margin, its apical margin with black pubescence; the third, fourth, and fifth segments with silvery-white pubescence in the middle, that at the sides of the apical segment being black; beneath, the segments are fringed with white.

*Hab.* Mexico, Orizaba.

114. *Mutilla salutatrix*.

*Female*. Length 3-4 lines.—Black, with the thorax and legs ferruginous, the antennæ and mandibles obscurely so. Head much wider than the thorax, subquadrate, the posterior angles acute; with golden-yellow pubescence above, and a black semicircular spot on the vertex anteriorly. Thorax narrowed behind, constricted about the middle; the margins with a series of compressed teeth, closely and strongly punctured above. Abdomen with the margin of the first segment, a triangular spot at the base of the second, from which a narrow line emanates and unites with a broad fascia near the apical margin of the same segment, of bright golden-coloured pubescence; from the transverse fascia a line of similar pubescence runs longitudinally to the apex.

*Hab.* Mexico, Orizaba.

115. *Mutilla separata*.

*Female*. Length 3-4 lines.—Head and abdomen black; thorax and legs ferruginous. The head a little wider than the thorax, slightly narrowed and rounded behind. The thorax somewhat fiddle-shaped and finely rugulose; legs obscurely ferruginous. Abdomen with a sharp carina in the middle from the base to the apex of the second segment; the margin of the basal segment and an elongate angular spot at the base of the second segment of silvery-white pubescence; the second segment with two, ovate, pubescent, pale-yellow maculae; the following segments with white pubescence.

*Hab.* Mexico, Orizaba.

116. *Mutilla blandina*.

*Female*. Length 3-3½ lines.—Ferruginous; the head and thorax finely rugulose; the flagellum of the antennæ and the tips of the mandibles black. The head wider than the thorax and subquadrate; the latter fiddle-shaped, its margins crenulated. The apical margin of the basal segment of the abdomen, and the middle of the basal margin of the second, with bright golden-coloured pubescence, with two ovate spots of the same colour near the apical margin of the second segment; the apical margin and the rest of the segments with bright golden pubescence; a black spot between the ovate maculae.

*Hab.* Mexico, Orizaba.

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**METHOCA.****1. Methoca nigriceps.**

*Female.* Length 4 lines.—Ferruginous, with the head and four fasciæ on the abdomen black. The clypeus, mandibles, and antennæ ferruginous; the head smooth and shining, with fine distant punctures. The thorax smooth and shining; the tibiæ and tarsi finely spinose. Abdomen very smooth and shining; the second and third segments with a broad black fascia near to their apical margins; the fasciæ are broadest in the middle and taper to a point laterally, but do not extend to the lateral margins; the fasciæ on the third and fourth segments are at their basal margins.

*Hab.* Brazil (?).

Obtained from Mr. W. Shuckard, by exchange, the locality being uncertain.

**2. Methoca constricta.**

*Male.* Length  $3\frac{1}{2}$  lines.—Black, the abdomen shining, the segment deeply constricted. The antennæ obscurely fulvous beneath, above fuscous; the mandibles ferruginous; the face closely punctured, the vertex shining and less closely so. The prothorax closely punctured, the mesothorax and scutellum more strongly so; the metathorax coarsely punctured; wings hyaline and iridescent, the nervures and stigma rufo-testaceous; legs dark rufo-piceous, with the articulations and the tarsi, as well as the anterior tibiæ, rufo-testaceous. The margins of the segments of the abdomen with a thin hoary pile; beneath, there is an impressed longitudinal line in the middle of each segment.

*Hab.* Ega.

**PONERIDÆ, Smith.****LEPTOGENYS, Roger.****1. Leptogenys insularis.**

*Worker.* Length  $3\frac{1}{2}$  lines.—Opaque black, and thinly covered with ashy pile. Head widest anteriorly; the eyes ovate, placed forward at the sides near the base of the mandibles, which are falcate and pointed at their apex, which is ferruginous; the flagellum of the antennæ rufo-testaceous, obscurely so above; the clypeus produced, the antennæ inserted at the sides of a prominence above the clypeus. Thorax oblong, compressed from the prothorax to the base of the metathorax; the tarsi more or less rufo-testaceous.

men oblong, narrowed posteriorly to the apex; the node of the peduncle subglobose, of the width of the metathorax, but narrower than the first segment of the abdomen, which is slightly constricted; the apical segment pale ferruginous, and with a few fulvous hairs.

*Hab.* Island of Oahu.

Not rare. According to Mr. Blackburn it forms its nest under stones; workers only have been taken.

## ICHNEUMONIDÆ.

### PIMPLA, Fabr.

#### 1. *Pimpla lævigata*.

*Female.* Length  $6\frac{1}{4}$  lines.—Head and thorax black, very smooth and shining; tip of the abdomen black, the four basal segments ferruginous, the first palest. Head with a narrow line at the inner orbits of the eyes below the antennæ, the clypeus, and palpi white; a triangular fuscous spot on the clypeus. The legs ferruginous, with the coxæ, intermediate and posterior trochanters, the apex of the posterior tibiæ and tarsi black. Wings pale fulvo-hyaline; the anterior pair with a broad dark fuscous fascia between the stigma and the arcole; the apex of all the wings fuscous, the nervures ferruginous. The ovipositor black and the length of the abdomen.

*Hab.* Costa Rica, Cache.

#### 2. *Pimpla coxata*.

*Female.* Length 5 lines.—Black and shining, the mesothorax bright ferruginous; the legs pale ferruginous, with the coxæ and trochanters white; the palpi and scape of antennæ in front white; the scutellum and a spot at the sides of the metathorax ferruginous; wings pale fulvo-hyaline, iridescent, the nervures fuscous, the stigma pale testaceous. Abdomen black, with an obscure castaneous tinge; the ovipositor nearly as long as the abdomen.

*Hab.* Costa Rica, Irazu.

#### 3. *Pimpla molesta*.

*Female.* Length 5 lines.—Black and shining; the legs ferruginous, with the apical joint black; antennæ black, the scape ferruginous, the flagellum obscurely so beneath. The scutellum white; the metathorax transversely irregularly striated; wings hyaline and iridescent, the nervures black. The first segment of the abdomen



deeply excavated longitudinally at the base; the ovipositor black, and less than half the length of the abdomen.

*Hab.* Costa Rica, Irazu.

#### 4. *Pimpla lineata*.

*Female.* Length  $5\frac{1}{2}$  lines.—Pale yellow, the mesothorax with three longitudinal black lines; the margins of the segments of the abdomen have narrow black fasciæ; the ovipositor is also black, and scarcely half the length of the abdomen; the insect smooth, shining and impunctate; the antennæ black, with the scape yellow in front; wings hyaline, the apex of the anterior pair slightly fuscous; the posterior tarsi, and the apical joints of the intermediate pair, black.

*Hab.* Costa Rica, Irazu.

### THYREODON, Brullé.

#### 1. *Thyreodon morosus*.

*Female.* Length 11 lines.—Black, with the wings dark brown, and having a brilliant violet and purple iridescence. The front with a minute tubercle between the antennæ; the face closely punctured; the scape and two minute joints at the base of the flagellum black, the following two thirds of the flagellum white, the apical portion black; the mesothorax with two deeply impressed channels that run longitudinally and unite at the scutellum, the channels crenulated; the metathorax with a longitudinal channel, on each side of which it is obliquely striated and pubescent. The abdomen smooth and shining, and having an obscure violet tinge.

*Hab.* Costa Rica, Cache.

#### 2. *Thyreodon principalis*.

*Female.* Length 11–13½ lines.—Black, with the third and fourth segments of the abdomen yellow. The clypeus slightly elevated and pointed at the apex; the mesothorax with two longitudinal furrows that are crenulated and unite at the base of the scutellum; the metathorax with a central longitudinal depression, on each side of which it is obliquely striated; wings dark brown with a splendid violet and purple iridescence. Abdomen very smooth and shining.

*Hab.* Costa Rica, Cache.

**CRYPTUS, Fabr.****1. Cryptus ferrugineus.**

*Female.* Length 5 lines.—Ferruginous, shining and impunctate; wings hyaline and iridescent, the nervures and stigma black; their apical margins narrowly fuscous, with a dark fuscous macula at the apex of the marginal cell and extending beyond it; antennæ black, two or three of its basal joints ferruginous beneath; the posterior tarsi black; the metathorax very smooth and shining, truncate, with the margin of the truncation acute and laterally subdentate. The apical margins of the abdominal segments slightly constricted; the ovipositor black, and about half the length of the abdomen.

*Hab.* Costa Rica, Cache.

**2. Cryptus bicolor.**

*Female.* Length 5 lines.—Head and thorax black; abdomen ferruginous; wings fuscous, with a violet iridescence. Thorax semi-opaque, the scutellum shining; the metathorax finely rugulose, posteriorly truncate, the margin of the truncation acute and slightly raised, laterally produced into a small tooth. Abdomen smooth and shining; the first segment petiolated, expanding into a quadrate shape, its anterior angles dentate.

*Hab.* Costa Rica, Irazu.

**MESOSTENUS, Grav.****1. Mesostenus nigerrimus.**

*Female.* Length 6 lines.—Jet-black, with the abdomen shining. The antennæ with the apex of the fifth and the seven following joints white above; the mesothorax longitudinally striated on the disk; an elevated carina runs from the anterior wings obliquely to the scutellum, which is elevated into a conical tubercle; the metathorax is rugose behind and has a longitudinal striation at the base, and on each side has a blunt tooth or tubercle; the anterior wings with a large dark fuscous cloud in the middle, the apex also fuscous. Abdomen with the two first segments very smooth and shining, the rest with a fine grey pile.

*Hab.* Costa Rica, Cache.

2. *Mesostenus intrudens*.

*Female*. Length  $5-5\frac{1}{2}$  lines.—Yellowish white, variegated with black. The head behind and a line from the vertex to the antennæ black; the mesothorax black, with two short longitudinal white lines on the disk; the tegulæ, a line from them to the base of the scutellum, a line from the apex of the scutellum to the base of the wings, also a line from the postscutellum to the wings white; the scutellum at its apex and the postscutellum white; the metathorax black at the base, and with three black lines from there to the apex, the base longitudinally and the apical portion transversely striated; the two intervening yellow spaces each with a stout yellow spine; wings hyaline; the tibiæ black above, the coxæ also with black markings. The abdomen with black fasciæ; the ovipositor black. The antennæ with a white annulus.

*Hab.* Costa Rica, Cache and Irazu.

## JOPPA, Fabr.

1. *Joppa hilaris*.

Length  $4\frac{1}{2}$  lines.—Pale yellow, with the vertex, the antennæ, the mesothorax, scutellum, postscutellum, base of the metathorax, a spot beneath the wings, the tibiæ and tarsi, and the fourth and following segments of the abdomen black; wings black at the base and apex, the intermediate space flavo-hyaline.

*Hab.* Costa Rica, Cache.

2. *Joppa variolosa*.

Length 5 lines.—The vertex and thorax above fulvo-ferruginous, the head in front, the thorax beneath, and the first and second segments of the abdomen nearly white; the antennæ and a spot on the vertex closing the ocelli black. Wings fulvo-hyaline, the nervures ferruginous, the apex dark fuscous; legs black; the anterior pair, with the tibiæ, tarsi, tips of the femora, and the coxæ whitish; the intermediate pair with the coxæ, trochanters, base and apex of the femora, and the tibiæ, except their apex, whitish; the posterior pair have the base of the femora and the tibiæ, except their apex, whitish. Abdomen with the first to fourth segments longitudinally striated.

*Hab.* Costa Rica, Cache.

3. *Joppa pulchripennis*.

*Female*. Length  $7\frac{1}{2}$  lines. Black; the wings hyaline from the base to the areolet, beyond which they are blackish brown.

also the apex of the posterior pair; the hyaline portion with a light-blue iridescence, that on the apical portion is violet; a line at the inner orbits of the eyes, two ovate spots on the clypeus, and a short line behind the eyes, white. The scutellum elevated into a conical tubercle; the posterior tarsi white, with the claws black. The abdomen petiolated, longitudinally striated; two ovate white maculae at the apex of the first segment.

*Hab.* Costa Rica, Cache.

#### 4. *Joppa elegantula*.

*Female.* Length 7-8 lines.—Black; the anterior wings hyaline, with a dark brown fascia before the stigma, the apex being dark brown beyond the arcole; the posterior pair lighter fuscous at their apex. The front, below the antennae, white, with two triangular black maculae; a white line at the inner margin of the eyes as high as the ocelli, the line expanding at its apex into a white macula, also a narrow line behind the eyes; the antennae with three or four white joints a little beyond the middle, beyond the white joints they are slightly thickened, and then taper to a point. The scutellum elevated into a conical tubercle, the base of the metathorax also elevated; the posterior tarsi white, with the two apical joints black. Abdomen longitudinally striated, the apical margin of the first and second segments with a white macula laterally. The anterior and intermediate coxae and legs beneath more or less white, and in some examples a few joints of the antennae are white beneath.

*Hab.* Costa Rica, Cache.

#### 5. *Joppa modesta*.

Length  $5\frac{1}{4}$  lines.—Yellow, with the vertex, the metathorax, the scutellum and postscutellum, the fourth and following segments of the abdomen, the intermediate and posterior tarsi, with the apex of the posterior femora and the base of the tibiae, black. The three basal segments of the abdomen finely striated; wings hyaline, slightly fuscous at their base, their apex and the anterior pair beyond the arcole dark fuscous.

*Hab.* Costa Rica, Cache.

#### 6. *Joppa maculosa*.

*Male.* Length 8 lines.—Head, thorax, and three basal segments of the abdomen pale yellowish white, with black markings above; the three apical segments of the abdomen ferruginous; the scape of the antennae black above; antennae black, slightly thickened in the middle, where are three or four white joints. Thorax black above;

the mesothorax with two triangular whitish spots anteriorly, a quadrate white spot on the disk, and a line close to the tegula; the scutellum, postscutellum, and a quadrate spot beneath it, also the metathorax laterally, the sides of the thorax beneath the coxae, also the trochanters of the anterior and intermediate legs, with the tibiae and femora beneath, whitish; the posterior femora are all pale beneath; the legs partly ferruginous and partly black above, wings pale fulvo-hyaline. Abdomen with the three basal segments black above, with their margins whitish and longitudinally striated, the three apical segments smooth, shining, ferruginous.

*Hab.* Costa Rica, Irazu.

### BRACON, Fabr.

#### 1. *Bracon lævis*.

*Female.* Length 5 lines.—Head, thorax, and legs black, the abdomen pale yellow-ferruginous, and entirely smooth and shining; wings dark fuscous, with three small hyaline spots across the anterior wings, opposite the base of the stigma, which is black. The second segment of the abdomen with the lateral angles elevated, subtuberculate in the middle, whence a shining carina extends to the apical margin; there is a depression on the segment laterally; the ovipositor as long as from its base to that of the anterior wings.

*Hab.* Costa Rica, Cache.

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