

28. **Polycyrtus erythrosterus.** (Tab. IX. fig. 20.)

Rufus, nitidus; capite, pronoto, mesonoto antennisque, nigris; annulo antennarum, orbitis, linea pronoti, tegulis, lineis 2 mesonoti, scutelli apiceque, flavis; abdominis dorso fusco variegato; alis hyalinis, stigmatibus testaceo.

Long. 14 millim.

Hab. PANAMA, Bugaba (*Champion*).

Antennæ longer than the body, a little thickened and compressed towards the apex; the annulus broad. Front projecting, the projecting part narrowed towards the apex and depressed below the antennæ; the spine conical, semi-obtuse at the apex; a tubercle at its base. Orbits from the middle to the back broadly white; a whitish mark in the centre of the clypeus at the apex; sides of the mandibles yellowish; palpi reddish yellow. The mesosternum is reddish yellow, black in front; the yellow line on the edge of the pronotum is broad; the carinæ in front of the scutellum yellow. Scutellum black on the top, reddish at the sides, and yellow at the apex. Transverse keel on the metathorax acute, a little curved upwards in the middle; the base of the metanotum somewhat depressed in the centre. Tubercles large, curved, semi-acute at the apex. Metapleuræ with scattered punctures. The ground-colour of the abdomen is obscure red; the sides incline to yellow, and the back, from the second segment, is fuscous, the apices of the segments being much lighter, almost reddish, in tint. The scutellum and metathorax are sparsely covered with long pallid red hair; the apex more densely with fuscous hair. Sheath of the ovipositor black, microscopically pilose. The hind tarsi are yellow, black at the apex; the four anterior ones black, except the basal joint, which is reddish.

Allied to *P. rufiventris*, Brullé, from Brazil; but may be known from it by the fuscous colour of the abdomen, the absence of white marks on the mesothorax (except the scutellar keels), and the reddish post-scutellum, while the metathorax is differently formed.

29. **Polycyrtus atriceps.**

Polycyrtus atriceps, Cresson, Proc. Acad. Phil. 1873, p. 148 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

30. **Polycyrtus tinctipennis.** (Tab. IX. fig. 19.)

Rufus; capite (ore excepto) antennisque nigris, flagello antennarum annulo albo; tarsis posticis pallide flavis; alis flavo-hyalinis, stigmatibus rufo-testaceo. ♀ et ♂.

Long. 13-14 millim.; terebra 4½ millim.

Hab. PANAMA, Volcan de Chiriqui, 2000 to 6000 feet (*Champion*).

Smooth, shining, impunctate; thorace sparsely covered with long reddish hairs; apex of the abdomen densely covered with longer hairs, also red. Antennæ a little longer than the body, thickened and compressed towards the apex, covered with a microscopic

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pile; third joint much longer than the fourth. Clypeus rounded at the apex, projecting, reddish, as also are the palpi; mandibles reddish yellow, the apices piceous; frontal spine $2\frac{1}{2}$ times longer than broad, obtuse at the apex. Transverse keel on the metathorax large, sharp, turned a little upwards in the middle; above it is a large, somewhat triangular depression (broadest at the base) which is a little raised in the centre. Tubercles large, a little curved, indistinctly keeled on the sides above, and hollowed at the base, compressed laterally towards the apex. Between the tubercles are three, not very distinct, longitudinal carinæ. The sides of the metathorax are obscurely punctured. Petiole curved, a little longer than the second segment. Areolet longer than broad, the outer nervure distinct.

The male has the antennæ longer than in the female; the thorax is not so shining, being almost aciculate, and the clypeus is yellowish.

This species is closely related to *P. atriceps*, which differs from it in having the hind tibiæ yellow, the wings hyaline, the basal margin of the third and following abdominal segments blackish. The tubercles on *P. atriceps* are described as "robust and obtuse." *P. nigriceps*, Brullé (from Brazil), also agrees with the present species in coloration, except that the keels in front of the scutellum are yellow, and the legs pale yellow, while the metathoracic tubercles are short and conical, the upper region, too, having two tubercles; *P. curvispina* is readily distinguished from it by the large areolet and clear hyaline wings.

31. *Polycyrtus chiriquensis*.

Ferrugineus; antennis, vertice, pronoto mesonotoque (scutello excepto), nigris; facie, orbitis, linea pronoti, lineis 2 mesonoti annuloque antennarum, flavis; alis hyalinis, stigmatate nigro-fusco. ♀.
Long. 14 millim.; terebra 5 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 5000 feet (*Champion*).

Smooth, shining, impunctate. Antennæ stout, a little longer than the body, closely pilose. The head is yellow, except behind, a small conical mark below the antennæ, and the vertex in the centre; clypeus scarcely transverse, the sides rounded, the foveæ deep; tips of the mandibles black; the frontal spine moderately long and acute. The lower part of the prothorax is ferruginous; the edges broadly lined with yellow. On the mesonotum the middle lobe is bounded by yellow at the apex. Scutellar carinæ yellow. The metanotum is slightly depressed in the middle at the base; the transverse keel is not very well developed, and is a little curved up in the middle. Tubercles short (not being much longer than broad), and obtuse at the apex. Abdomen shining, impunctate; ovipositor scarcely half its length, the sheath black, pilose. Legs longish, the tarsi inclining to yellowish. Areolet narrow, nearly twice as long as wide, closed at the apex, the outer nervure nearly interstitial.

A larger species than *P. erythrosterneus*, and easily known from it by the yellow face, entirely red scutellum, and much shorter and more obtuse metathoracic tubercles.

32. **Polycyrtus curviventris.** (Tab. X. fig. 28, ♀.)

Rufus; antennis, capite, femoribus posticis, abdominis dorsis pro parte terebraque, nigris; annulo antennarum, clypeo, labro mandibulisque, albis; alis hyalinis, fere fumatis, nervis nigris. ♀.

Long. 21–22 millim.; terebra 11 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Smooth, shining, impunctate, sparsely pilose. Lobes of the mesonotum well developed. Frontal spine conical, short. Transverse keel on the metanotum slightly curved backwards in the middle. Tubercles longish, slightly curved, of nearly equal thickness throughout, rounded at the apex. Petiole not defined from the postpetiole. Apex of the abdomen clavate, oblique. Petiole entirely reddish; the other segments black above, the second and third broadly red at the apex. Areolet longer than broad, dilated at the apex, closed, the recurrent nervure interstitial.

The largest of the Central American species.

33. **Polycyrtus xanthothorax.** (Tab. X. fig. 12, ♀.)

? *Mesostenus xanthothorax*, Brullé, Hist. Nat. Ins. Hymén. iv. p. 213 (♂); Taschenberg, Zeits. f. d. gesammten Naturwiss. xlvi. p. 77 (♀)¹.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).—BRAZIL¹.

As I am not quite certain that the Bugaba example (a female) is identical with the species described by Brullé and Taschenberg, I give a full description of it:—

Antennæ scarcely so long as the body, black, a broad white ring beyond the middle; moderately stout, covered with a microscopic pile. Head black, the labrum, clypeus, and mandibles white; frontal spine shortish, thick, conical. Thorax red; pronotum in front, and the mesonotum (but not the scutellum), black. Lobes of the mesonotum well developed. Metathorax longish, with a nearly gradual slope to the apex; the centre very slightly hollowed, and there is a shallow furrow between the tubercles, which are short, being not more than twice as long as wide. The upper transverse keel straight; the other obsolete. Abdomen black, the upper side of the postpetiole black; the second segment broadly white at the apex, the other segments narrowly white, the ventral surface obscure white. The apex of the abdomen decidedly clavate, compressed laterally, the extreme apex oblique; the ovipositor issuing from the lower side and projecting upwards, its sheath black and hairy, about half the length of the abdomen. Petiole longish, slender; second segment nearly as long as the petiole, and longer than the following segments together. Legs reddish; posterior femora, and the greater part of the hinder trochanters, black; posterior tibiæ and tarsi whitish yellow, the apex of the latter black. Wings scarcely so long as the thorax and abdomen together, hyaline; areolet small, a very little longer than broad, the apical nervure bullated, the recurrent nervure recurved in the middle.

Brullé describes the tubercles in his species as “longues et arquées,” and Taschenberg

says there is "a triangular central white spot on the abdominal segments"; but the description of the abdominal coloration given by Brullé agrees with our specimen.

34. *Polycyrtus curvispina*.

Ferrugineus, nitidus; antennis capiteque nigris, ore albo; antennis annulo albo, tarsis posticis flavis; alis hyalinis, stigmatibus testaceo.

Long. 13 millim.

Hab. COSTA RICA, Cache (*Rogers*).

Smooth, shining, impunctate. Antennæ much longer than the body, pilose; third joint longer than the fourth. Front depressed between the eyes, the spine stout, longish, conical; eyes distinctly margined; face covered with long white hair. Thorax covered with long reddish hair; mesonotal sutures deep; a triangular depression at the base of the metanotum in the middle, a transverse keel in the centre; tubercles long and curved. Abdomen slender, covered (especially at the sides) with long fuscous hair. Areolet large, one half longer than broad, the outer nervure bullated.

In this species the areolet is much larger than in the other species of *Polycyrtus* or *Mesostenus*, but in other respects it agrees with *Polycyrtus*. If, however, it had not the frontal spine I should almost have placed it in *Cryptus*. *P. atriceps* agrees with it in coloration; but has the metathoracic tubercles "robust and obtuse," the areolet closed, and is only four lines in length. *P. nigriceps*, Brullé, also agrees with it in coloration; but differs, *inter alia*, in having the tubercles short and conical.

POLYÆNUS.

Polyænus, Cresson, Proc. Acad. Phil. 1873, p. 149.

This section differs from *Polycyrtus* in the front having two small spines, often united at the base, instead of one only. In some species of *Mesostenus* there are slight indications of these spines, while *Polyænus* agrees with the latter in the lobes of the mesonotum not being well developed as in *Polycyrtus*. The known species are comparatively few in number.

1. *Polyænus ectypus*.

Polyænus ectypus, Cresson, Proc. Acad. Phil. 1873, p. 149 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. *Polyænus ablatus*.

Polyænus ablatus, Cresson, Proc. Acad. Phil. 1873, p. 149 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

3. *Polyænus championi*. (Tab. IX. fig. 23.)

Niger, flavo varius; sterno, pleuris proparte, apice scutelli pedibusque, flavis, femoribus supra nigris; alis lenissime fumatis. ♀.

Long. 16 millim.; terebra 6 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 6000 feet (*Champion*).

Antennæ stout, longer than the body; a yellow line on the scape beneath, the ring on the flagellum narrow. Head punctured; behind the centre of the vertex, and the mandibles, black. Thorax punctured; the pleuræ obliquely striated, the metanotum below the first transverse keel longitudinally, the rest transversely, striated. Base of the metanotum smooth, impunctate, the part next to the transverse keel punctured. The spiracles placed in an oval area, the part surrounding it finely and closely reticulated. The prothorax in front, a broad line on its edge, the tegulæ, the tubercle beneath them, a large oblique mark on the lower part of the mesopleuræ, the mesosternum, the greater part of the metapleura, two lines on the disc of the mesonotum, the carinæ in front of the scutellum, a large triangular mark on the apex of the scutellum, the postscutellum, and two large marks on the metanotum covering the tubercles, yellow. First segment of the abdomen yellow, a large black mark covering the apex of the petiole and the base of the postpetiole; the second segment with a yellow spot covering the gastrocœli, its apex yellow; the other segments black, broadly yellow at the apex. Legs yellow, the femora lined with black above; a minute black spot on the middle coxæ, a broad black line on the hind pair; hind trochanters black above. Apices of the tarsi black. Areolet distinct, longer than broad, closed at the apex.

4. *Polyænus nitidiusculus*.

Niger, flavo varius, nitidus; pedibus flavis, supra nigro lineatis, tarsis posticis læte flavis.

Long. 15 millim.; terebra 6 millim. ♂.

Hab. GUATEMALA, Las Mercedes 3000 feet (*Champion*).

Head yellow, the middle of the vertex behind, and the apex of the mandibles, black; face transversely striated. Thorax smooth, shining, impunctate, black; the prothorax in front, a broad line on its edge, the tegulæ, the tubercles beneath them, the greater part of the meso- and metapleuræ, a large mark beneath the hind wings, the edges of the middle lobe of the mesonotum, a line joined to it in front of the yellow edge of the pronotum, the carinæ in front of the scutellum, the scutellum (except a large black mark at the base), the postscutellum, a mark on either side of the metanotum, a large mark covering the tubercles and extended above them, yellow. Metathorax shining, impunctate; tubercles large, slightly curved. First abdominal segment broad; the petiole not clearly separated from the postpetiole, black; the base largely and a broad band on the apex, yellow. The other segments black, yellow at the apex and beneath. Legs yellow, the four anterior trochanters, the femora, tibiæ, and tarsi, black above; a small black mark on the apex of the four anterior coxæ; two large marks, joined at the

apex, on the top of the hind coxæ; hind trochanters and femora broadly above, the hind tibiæ almost entirely, and the base and apex of the tarsi, black. The antennæ are broken off beyond the base of the flagellum; the scape is yellow in the centre beneath. Areolet longer than broad, narrow, open at the apex.

5. *Polyænus orizabensis*.

Niger; facie, orbitis, tegulis, linea pronoti, maculis pleuratis, maculis 2 mesonoti, apice scutelli, postscutello, maculis 2 metanoti abdominisque segmentis apice, flavis; pedibus flavis, coxis, trochanteribus, femoribus supra apiceque tibiæ posticarum, nigris; alis hyalinis, stigmatibus nigro. ♀.
Long. 17 millim.; terebra 5 millim.

Hab. MEXICO, Orizaba (*Bilimek*).

Antennæ black, covered with microscopic down (broken off beyond the tenth joint). Head yellow, the apex of the mandibles, the vertex above the antennæ in the centre, and the occiput, black. Face, especially the sides, transversely striated. Frontal spines small, united at the base. Thorax strongly punctured; the pleuræ (especially the metapleuræ) obliquely striated, except the tubercles below the tegulæ, and a shining impunctate projecting point in the centre of the mesopleuræ. Base of the metanotum irregularly reticulated, the apex transversely striated, and with a rather abrupt slope. Scutellum opaque, aciculate. The lobes of the pronotum project, and are broadly yellow; the mesonotal sutures are not deep, the middle lobe not being much elevated above the lateral ones, and they are lined for three fourths of their extent by a narrow yellow line. Prosternum broadly, a broad oblique mark on the mesopleuræ, the tubercles under the tegulæ, a somewhat triangular mark immediately under the hind wings, a large oblique mark on the metapleuræ, two longish marks on the apex of the metanotum covering the tubercles (which are longish, stout, and slightly curved), the keels in front of the scutellum, the apex of the latter, and the sutures, yellow. The two transverse keels on the metanotum are distinct, and there is a square area, raised in the centre, at the base in the middle. Petiole dilated laterally at the extreme base and becoming widened towards the apex, black; the under side and apex yellow; the other segments black, yellow at the sides, beneath, and at the apex above. Legs yellow, all the femora lined above with black; two black lines (united at the apex) on the sides of the hind coxæ; the basal joint of the hind trochanters, the extreme apex of the apical joint, and the base and apex of the hind tibiæ (the apex not all round), black. Areolet longer than broad, narrow, the outer and inner nervures bullated.

6. *Polyænus basimacula*. (Tab. IX. figg. 24 ♀, 25 ♂.)

Niger, albo varius; abdomine rufo, basi nigro; pedibus fulvo-rufis, femoribus nigro lineatis, coxis anterioribus flavis.

Long. 14 millim.; terebra fere 4 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Antennæ stout, longer than the body, the yellow ring on the flagellum broad. Head punctured, except behind, the middle of the vertex, and the mandibles. Thorax strongly punctured; the pleuræ longitudinally, the apex of the metanotum transversely, striated; base of the metanotum impunctate, behind the transverse keel punctured, before it, in the centre, reticulated. Metathoracic tubercles large, stout, a little curved. Thorax black; the collar in front, a line on the edge, the tegulæ, a large mark on the mesopleura, the tubercles, a mark under the hind wings, the greater part of the metapleura, a mark at the apex of the middle lobe, the carinæ in front of the scutellum, the scutellum, two large marks on the metanotum (covering the tubercles), white. Abdomen rufous, the greater part of the petiole black, the apex of the postpetiole yellow. Legs rufous, the anterior pair yellowish or fulvous in front; the coxæ yellow, marked with black behind, the hind pair rufous, sometimes tinged with yellow at the base; femora for the greater part black above, but especially towards the apex. Areolet minute, closed at the apex.

The male has the breast white, and the second abdominal segment more or less black, otherwise coloured as in the female.

7. *Polyænus volcanicus*.

Niger, flavo varius; apice scutelli coxisque anterioribus, flavis, abdomine rufo; pedibus fulvis, anticis flavis; alis hyalinis.

Long. 14 millim.; terebra 6 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Similar in coloration to the preceding species, but differing in having the basal half of the scutellum black, the base of the metanotum more strongly punctured, and the ovipositor longer. The femora are lined above with black.

CHRISTOLIA.

Christolia, Brullé, Hist. Nat. Ins. Hymén. iv. p. 163. 246

This genus does not seem to me to be clearly defined from *Mesostenus*, and still less from *Cryptanura*. The species (as are also those of *Cryptanura*) are neotropical, and are much less numerously represented than the typical forms of *Mesostenus*.

1. *Christolia nubecula*.

Christolia nubecula, Cresson, Proc. Acad. Phil. 1873, p. 163 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. *Christolia panamensis*. (Tab. X. fig. 27.)

Niger; annulo antennarum, palpis, abdominis apice tarsorumque posticorum apice, albis; alis hyalinis, stigmatibus nigro.

♂ facie alba, sterno coxisque sordide flavis.

Long. 20–22 millim.

Hab. PANAMA, Bugaba, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Antennæ as long as the body, stout, thicker towards the apex, the third joint longer than the fourth. Head a little wider than the mesothorax, retreating behind the eyes; front a little projecting; clypeus transverse at the apex, the face transversely rugose, opaque. Mesonotum minutely and rather indistinctly punctured, the furrows obsolete. Scutellum smooth, shining, impunctate; the sides at the base above carinate, laterally hollowed, strongly striated. Metathorax densely covered with silvery white hair, the base laterally opaque, obscurely aciculate, the middle and the rest of it transversely striated, the apex hollowed in the middle; the upper transverse keel curves round to the extreme base, the second interrupted in the middle; tubercles blunt, short. Petiole and postpetiole smooth, shining, impunctate; the rest of the abdomen scarcely so shining, the sides covered with short pale down. The anterior legs (including the coxæ) are obscure testaceous in front, the middle tibiæ and tarsi less so.

The clypeus may be entirely black or yellow; the apex of the abdomen may be only white in the middle, or there may be two or three transverse marks on the intermediate segments. Some specimens (especially those with the mouth black) have the pleuræ more densely pilose than others.

The male has the orbits, the face below the antennæ, the clypeus, and the mandibles (except at the tips), yellow; all the coxæ beneath, and the four anterior legs on the under side, obscure testaceous.

3. *Christolia calcarata*.

Christolia calcarata, Cresson, Proc. Acad. Phil. 1873, p. 164 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

4. *Christolia menticula*. (Tab. X. fig. 29.)

Niger; antennarum annulo, tegulis, scutello, postscutello, maculis abdominis apice tarsorumque posticorum apice, albis; pedibus rufis, tibiis tarsisque posticis nigris; alis hyalinis, stigmatibus nigro.

♂ facie flava.

Long. 18–20 millim.; terebra 7 millim.

Hab. MEXICO, Orizaba (*Bilimek*); GUATEMALA, San Gerónimo (*Champion*); PANAMA, Volcan de Chiriqui (*Champion*).

Antennæ as long as the body, stout, thickened towards the apex; the third joint a little longer than the fourth. Head scarcely so broad as the mesothorax, opaque, semi-rugose; front projecting in the middle, the clypeus not projecting so much, surrounded at the base by a broad and deep furrow, shining, covered with distinctly separated punctures; the apex almost transverse; labrum, the base of the mandibles, and the palpi, yellowish. Mesonotum opaque, finely and closely punctured, the furrows clearly defined; scutellum shining, impunctate, the base black, and carinated at the sides, laterally hollowed and striated. Mesothorax densely covered with white hair; the base aciculate, the rest transversely striated; the upper transverse keel curves round to the base of the metanotum, the narrower curved part being transversely striated;

the lower one is interrupted in the middle; tubercles short, blunt. Petiole longish, curved, smooth, shining; an indistinct tubercle on either side of the postpetiole at the base; the remaining segments smooth, covered with microscopic down. Areolet quadrangular, the anterior nervure oblique; there is no angle on the lower side.

Apparently a variable species. The Mexican specimens have only the hind knees, tibiæ, and metatarsus black, and they have the petiole red. The Guatemalan examples have the hind knees broadly, the middle knees slightly, the middle tibiæ and the tarsi entirely, black, and the fore femora, tibiæ, and tarsi more or less black behind, the hind legs being as in the Mexican form; the petiole has only the extreme base red. In the Guatemalan specimens there is a broad white or yellowish mark at the apex of the postpetiole; a small round mark at the apex of the second and third segments; a small triangular mark on the fourth, and a large triangular one on the fifth, sixth, and seventh, the segments at their junctions being obscure reddish. The Mexican specimens want the marks on the petiole and on the second and third segments.

5. *Christolia zapotecus*.

Christolia zapotecus, Cresson, Proc. Acad. Phil. 1873, p. 165 (♂ ♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

6. *Christolia mirabilis*.

Christolia mirabilis, Cresson, Proc. Acad. Phil. 1873, p. 165 (♂ ♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

7. *Christolia mirandus*.

Christolia mirandus, Cresson, Proc. Acad. Phil. 1873, p. 165 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

8. *Christolia graciliventris*.

Niger; annulo antennarum, facie, ore, orbitis, scutello, tegulis, linea pronoti, abdominis segmentis apice tarsisque posticis, albis; sterno, pleuris, metanoto (basi excepta) pedibusque, fulvis; tibiis posticis supra nigris; alis hyalinis, nervis nigris. ♀.

Long. 19 millim.; terebra 8 millim.

Hab. MEXICO, Valladolid in Yucatan (*Gaumer*).

Face punctured, the vertex aciculate in the centre; tips of the mandibles black. Mesonotum closely punctured, covered with close fuscous pubescence; pleuræ more closely punctured (except in the centre), covered with a greyish-white pubescence. Metanotum at the base shining and impunctate, in front of the transverse keel aciculate, the rest transversely striated. Metathoracic tubercles scarcely indicated. Scutellum much longer than broad, narrowed towards the apex; the mesonotum on either side of it obliquely striated. Petiole longish, clearly defined from the postpetiole, which is

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tuberculated at the base laterally, white, the apex of the postpetiole also white, as well as the ventral surface. Lobes of the pronotum prominent; there is a white mark on either side of the mesonotum at the tegulæ. On the sternum and on the front of the mesopleura the reddish-fulvous colour merges into yellow. Areolet nearly square, the nervures bullated in front. Coxæ punctured, the four anterior ones yellow in front; the hinder femora at the extreme base and apex, the apices of the tarsi, and the extreme base also of the hind ones, black.

9. *Christolia tarsoleucus*.

Niger; scutello, abdominis segmentis apice tarsisque posticis apice, facie, ore, annulo antennarum, linea pronoti, pleuris, metanoto (basi excepta) pedibusque, fulvis; alis hyalinis, apice fumatis, nervis nigris. ♂.
Long. 15 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Antennæ as long as the body, the fulvous ring broad. Face closely punctured; clypeus projecting at the apex; vertex wrinkled. Mesonotum punctured, irregularly striated; lobes of the pronotum projecting; pleuræ irregularly striated and punctured. Sutures of the mesonotum deep. Scutellum much broader than long, strongly punctured. The prosternum is fulvous behind, and the line on the pronotum is moderately broad, and does not reach the tegulæ; the middle lobe of the mesonotum is edged with fulvous at the apex, and the pleural tubercles are white. Metanotum black to the tubercles (which are not clearly defined); the upper transverse keel straight, in front of it the surface is irregularly wrinkled, shining, and marked with two roundish white marks, in front of it coarsely and irregularly reticulated, the apex transversely striated; the lower transverse keel not defined. Petiole longish, narrow, not separated clearly from the postpetiole, the base fulvous, the apex white. Hind coxæ punctured at the base and apex; anterior coxæ yellow in front; hind spurs, the base of the hind and the apices of all the tibiæ, black. Wings short.

Obs. It is possible that the ring on the antennæ, the face, and the edge of the pronotum are really white, the fulvous tint being, perhaps, owing to discoloration.

10. *Christolia pulchripes*.

Thorace coxisque posticis rufis; antennis, capite, abdomine, femoribus posterioribus, anticis supra, tarsi intermediis, apice tibiæ intermediarum, tibiisque posticis (basi excepta), nigris; facie, ore, orbitis, annulo antennarum, pedibus anticis, tibiis posterioribus basi tarsisque posticis, albis; alis hyalinis, nervis nigris. ♂.

Long. 14 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Smooth, shining, impunctate; pleuræ striated, covered with whitish pubescence. Antennæ filiform, longer than the body. Sutures of the mesonotum deep, narrow. Prothorax for the greater part white in front; a line on the pronotum, the pleural

tubercles, and the pleural sutures, white. Metanotum in front of the transverse keel (which curves up in the middle) transversely striated, covered with silvery pubescence, behind it shining, impunctate; tubercles absent. Petiole long, narrow, the extreme base reddish, the apex white, shining, impunctate. Apex of the third and the apical segments white, opaque, very finely and closely punctured. Four posterior spurs black; middle tibiæ black only behind; hind tibiæ entirely black, except a broad white ring at the base; tips of the tarsi black. Areolet a little longer than broad, closed, angled on lower side.

CRYPTANURA.

Cryptanura, Brullé, Hist. Nat. Ins. Hymén. iv. p. 242.

1. *Cryptanura sumichrasti*.

Cryptanura sumichrasti, Cresson, Proc. Acad. Phil. 1873, p. 166 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova¹ (*Sumichrast*).

2. *Cryptanura delecta*.

Cryptanura delecta, Cresson, Proc. Acad. Phil. 1873, p. 166 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

3. *Cryptanura acolhua*.

Cryptanura acolhua, Cresson, Proc. Acad. Phil. 1873, p. 166 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

4. *Cryptanura incauta*. (Tab. X. fig. 30.)

Rufa; capite, antennis, abdominis apice, tibiis tarsisque posticis, nigris; annulo antennarum facieque pallide flavis. ♀.

Long. 18 millim.; terebra fere 4 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).

Antennæ as long as the body, stout, compressed at the apex; the basal joints a little thickened at their apices; the third joint longer than the fourth, the basal joint of the scape reddish beneath. Head wider than the mesothorax; the face flat, transversely striated; clypeus projecting, the apex transverse; vertex raised in the centre, a furrow on either side of the ocelli; tips of the mandibles blackish. Thorax finely punctured, opaque; furrows obsolete. Scutellum gibbous, broader than long. Metanotum transversely rugose; two broadly curved carinæ at the base, the first quite close to the base, the second at the edge of the oblique slope; tubercles minute. Petiole narrow, smooth and shining; postpetiole semiopaque, obsoletely aciculate, a large tubercle on either side at the base. Abdomen obsoletely aciculate, black from the third segment, the edges of the apical segment obscure red, and covered with pale pubescence. Legs longish; hind spurs reddish; the tarsi (especially on the under side) with reddish bristle-like

hairs; coxæ punctured. Wings with a smoky tinge, especially at the base. Areolet quadrangular, scarcely angled in the middle where the recurrent nervure is received, moderate in size.

5. *Cryptanura laticarinata*.

Hab. PANAMA, Bugaba (*Champion*).

Identical in coloration with the above, but only 13 millim. in length. The face longer, and broadly keeled in the centre; the postpetiole not keeled at the side, and without tubercles at the base; the areolet larger. The sculpture and the length of the ovipositor as in *C. incauta*.

6. *Cryptanura pedicata*.

Lutea; capite, antennis (annulo excepto), dimidio apicali tibiæ posticarum abdominisque apice, nigris; alis hyalinis, stigmatate nigro. ♂.

Long. 10 millim.

Hab. MEXICO (*Sallé*).

Antennæ longer than the body, shortly pilose, the joints closely united, the large white ring placed beyond the middle, the base of the flagellum inclining to fuscous. Head, if anything, broader than the mesothorax; sparsely covered with white pile, the front obsolete carinate; tips of the mandibles piceous; palpi pale testaceous. Thorax aciculate, slightly shining, the furrows on the mesonotum obsolete, the latter gibbous. Scutellum not raised above the mesoscutum, but the latter slopes away from it at the sides. Metathorax longish, narrowed behind, the top sloping gradually from the base to the apex, the sides covered with white hair; there is a longitudinal keel on either side of the metanotum, but no transverse ones. Abdomen aciculate, the basal segments narrow, longish, the apical segment compressed laterally. Legs longish; hind spurs fuscous; base of the metatarsus blackish, the rest of the hind tarsi yellowish, except the apex, which is black in all the tarsi. Areolet quadrangular, obtusely angled on the lower side.

7. *Cryptanura* (?) *pachymenæ*.

Cryptanura (?) *pachymenæ*, Cresson, Proc. Acad. Phil. 1873, p. 168¹.

Hab. MEXICO, Orizaba, Cordova, Mirador¹ (*Sumichrast*).

Bred from a species of *Pachymenes* (Cresson, *loc. cit.*).

HEMITELES.

Hemiteles, Gravenhorst, Ichn. Europ. ii. p. 781.

This genus is a very large one, and especially (so far at least as our present knowledge goes) numerous in the temperate regions of both hemispheres.

A. *Abdomen black, banded with white.* (Species 1 to 8.)

1. *Thorax black, marked with white.* (Species 1 to 4.)

1. **Hemiteles lascivus.**

Hemiteles lascivus, Cresson, Proc. Acad. Phil. 1873, p. 170 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. **Hemiteles patruelis.**

Hemiteles patruelis, Cresson, Proc. Acad. Phil. 1873, p. 170 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

3. **Hemiteles exilis.**

Hemiteles exilis, Cresson, Proc. Acad. Phil. 1873, p. 171 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

4. **Hemiteles rarus.**

Hemiteles rarus, Cresson, Proc. Acad. Phil. 1873, p. 171 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. *Thorax ferruginous, mesothorax black above.* (Species 5.)

5. **Hemiteles irritatus.**

Hemiteles irritatus, Cresson, Proc. Acad. Phil. 1873, p. 171 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

3. *Thorax entirely ferruginous.* (Species 6 to 8.)

a. *Wings hyaline, without bands.* (Species 6.)

6. **Hemiteles ingenuus.**

Hemiteles ingenuus, Cresson, Proc. Acad. Phil. 1873, p. 172 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

b. *Wings hyaline, with two fuscous bands.* (Species 7 and 8.)

7. **Hemiteles adjicialis.**

Hemiteles adjicialis, Cresson, Proc. Acad. Phil. 1873, p. 172 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

This species differs from the next in having no black on the head, the thorax marked with white, and the hind tibiæ black.

8. *Hemiteles rufithorax*.

Rufus; capite abdomineque nigris, albo marginatis; pedibus sordide rufis, anticis basique tiliarum posticarum albis; alis hyalinis, medio apiceque fumatis; stigmatibus nigro, subtus pallido. ♀.
Long. 6.5 millim.; terebra 1 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Antennæ as long as the body, a broad white ring in the centre; scape obscure white on the lower side. Head shining, impunctate, black, the orbits broadly white. Thorax closely punctured; scutellum aciculate and bearing a few scattered punctures. Metathorax more strongly punctured, its transverse keels obsolete; tubercles stout, longer than broad. The thorax in front, the tegulæ, and the metathoracic tubercles clear white. Abdomen aciculate; the first segment white, with a large black mark in front of the postpetiole; second and third segments black, broadly white at the apex; fourth segment entirely black, the rest white. Legs obscure red, the anterior ones pale; hind coxæ blackish, their apices white; hind trochanters marked with black; hind tibiæ darker than the others; tips of the tarsi black. Areolet completely open at the apex; the cloud in the middle is in front of the basal nervure, and does not reach the costa, nor does it extend beyond the brachial cellule.

B. *Abdomen white, banded with black.* (Species 9 to 11.)

9. *Hemiteles adultus*.

Hemiteles adultus, Cresson, Proc. Acad. Phil. 1873, p. 173 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

Differs from the next species in having the metathoracic tubercles "prominent, obtuse," the hind coxæ entirely yellowish, the first abdominal segment with only a spot on its apex, and the pleuræ entirely black; from *H. sexlineatus* it differs in the black pleuræ, and in the mesonotum being almost entirely black.

10. *Hemiteles flavovariegatus*. (Tab. X. fig. 23.)

Niger; facie, ore, orbitis læte, linea pronoti, mesopleuris, sterno, scutello, maculis 4 metathoracis, abdominisque segmentibus marginibus læte, flavis; pedibus pallide testaceis, coxis flavis; alis hyalinis, stigmatibus nigro. ♀.

Long. 8 millim.; terebra 1 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Antennæ longer than the body, the scape beneath and a broad ring on the flagellum white. Head broad, finely punctured. Mesonotum much more strongly and coarsely punctured than the head, the pleuræ not so strongly. Metathorax coarsely punctured and without tubercles or transverse keels. The prosternum, a broad band on the edge of the pronotum, the mesopleuræ (except above), the sternum, a large mark under the hind wings, a large mark (much narrowed behind) on the metapleura,

the scutellum, the postscutellum, and two large longish marks on the metanotum, yellow. First abdominal segment black, yellow at the base and apex; second segment yellow, with a large black transverse band at the base, the band narrowed at either side behind; the third to the fifth segments black, broadly yellow at the apex; the apical segments entirely yellow. Coxæ punctured, the posterior pair with a large black mark on the outer side; apices of the tarsi blackish, the hinder pair yellow. Areolet higher than long, open at the apex, angled sharply on the lower side.

11. *Hemiteles sexlineatus*.

Pallide flavus; antennis, lineis 6 thoracis, metanoti basi abdominisque segmentis basi, nigris; scapo subtus annuloque antennarum, albis; pedibus fulvis, coxis flavis; alis hyalinis, stigmatibus testaceo. ♀.
Long. 8 millim.; terebra 1.5 millim.

Hab. MEXICO, Presidio (*Forrer*).

Antennæ, if anything, longer than the body, thickened towards the apex, covered with microscopic pile. Face punctured; clypeus and the lower part of the face projecting; tips of the mandibles black; the space surrounding the ocelli black, the black projecting as a narrow short line in front and joined to the black occiput by a narrow black line. Mesonotum closely punctured, the scutellum impunctate; pleuræ very finely striated, punctured. Metathorax very finely punctured, the transverse keel nearly straight; tubercles broadly dilated laterally, not projecting much. A line on the lower half of the pronotum, the mesonotum at the sides all round, a broad line on the middle lobe, a narrower one on each of the lateral lobes, the sutures, the base of the metanotum (except a small space at the spiracles), a narrow line going down from it on the outer side of the spiracles, and a broader and shorter one in the centre (not joined to the black base), black. Abdomen shining, impunctate; a band at the apex of the petiole in front of the postpetiole, a broad band at the base of the second segment (but not reaching to the base), and the base of the succeeding segments more narrowly, black. Hind coxæ punctured; hind tarsi yellowish, the tips black. Areolet wider than long, sharply angled on the lower side.

Easily known from the preceding species by the more prominent metathoracic tubercles, by the immaculate pleuræ, by the petiole having only a small black mark, and by the immaculate coxæ.

C. *Abdomen white and honey-yellow, with one or more black bands.* (Species 12 to 15.)

1. *Metathorax without tubercles.* (Species 12 and 13.)

12. *Hemiteles bimaculatus*.

Hemiteles bimaculatus, Cresson, Proc. Acad. Phil. 1873, p. 173 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova¹ (*Sumichrast*).

Said to be a common species.

13. **Hemiteles centralis.**

Hemiteles centralis, Cresson, Proc. Acad. Phil. 1873, p. 174 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. *Metathorax with tubercles.* (Species 14 and 15.)

14. **Hemiteles junctus.**

Hemiteles junctus, Cresson, Proc. Acad. Phil. 1873, p. 174 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

15. **Hemiteles scitulus.**

Hemiteles scitulus, Cresson, Proc. Acad. Phil. 1873, p. 174 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

D. *Abdomen ferruginous and white.* (Species 16 to 19.)

16. **Hemiteles monilis.**

Hemiteles monilis, Cresson, Proc. Acad. Phil. 1873, p. 174 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

17. **Hemiteles sulsus.**

Hemiteles sulsus, Cresson, Proc. Acad. Phil. 1873, p. 175 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

18. **Hemiteles admirabilis.**

Hemiteles admirabilis, Cresson, Proc. Acad. Phil. 1873, p. 175 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

19. **Hemiteles macula.**

Rufus; capite, prothorace, mesonoto, mesosterno antennisque, nigris; annulo antennarum, orbitis, labro, linea pronoti, maculis 2 mesonoti, scutello abdominisque apice, albis; alis hyalinis, medio fusco fasciato, stigmatate testaceo. ♀.

Long. 11–12 millim.

Hab. MEXICO, Presidio (*Forrer*).

Antennæ scarcely so long as the body, somewhat thickened towards the apex, the white ring broad; the scape whitish in the middle beneath. Head finely rugose, still more finely on the top; face not projecting much; the orbits white all round; the clypeus and lower part of the head together with the mandibles ferruginous. Thorax opaque, closely punctured; scutellum aciculate, shining, the sides margined towards the base, which is much broader than the apex; postscutellum very shining; mesopleura longitudinally punctured. Metathorax rugose-striate; upper transverse keel straight, the lower keel obsolete; tubercles pallid, longer than broad. Petiole and postpetiole

smooth, shining, impunctate; the rest of the abdomen aciculate. The apical segments are white at the sides, the seventh segment broadly white above; the eighth segment, with the cerci, whitish. Legs stout; hind coxæ punctured. Areolet quadrate, the apical nervure pellucid; the apex, and a narrow band across from the stigma, smoky.

E. *Abdomen ferruginous or honey-yellow.* (Species 20 to 27.)

1. *Thorax marked with black.* (Species 20 to 23.)

20. Hemiteles transilis.

Hemiteles transilis, Cresson, Proc. Acad. Phil. 1873, p. 175 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

Differs from *H. albituberculatus* in having the metathorax black at the base only, the tubercles short and blunt, the prothorax white (except a black line above), &c.

21. Hemiteles albituberculatus. (Tab. X. fig. 25.)

Rufus; antennis, capite, pronoto, meso- metanotoque, nigris, annulo antennarum, clypeo, facie proparte, prosterno, macula pronoti, maculis 3 mesonoti, scutello, spinis metathoracis, albis; alis hyalinis, stigmatate pallide testaceo. ♀.

Long. 9 millim.; terebra fere 2 millim.

Hab. PANAMA, Bugaba (*Champion*).

Antennæ distinctly longer than the body, thickened towards the apex; the scape white above in the middle. Head closely punctured; the orbits all round, the front below the antennæ broadly, the clypeus and labrum, white. Thorax finely punctured, the pleuræ more strongly striated; base of the metanotum coarsely punctured, the sides and apex coarsely striated and punctured. The thorax is black above (except the above-mentioned white markings); the prothorax broadly behind, the edge of the mesopleura in front, the suture at the metapleuræ, and the metanotum (except at the apex and the sides down from the spiracles), black; the mesopleura and a spot under the hind wings dull yellowish white. Scutellum not much narrowed at the apex, which is transverse, the base rounded. Tubercles long, acute; the part below them to near the apex white. Petiole shining, impunctate; postpetiole aciculate, white at the apex. The rest of the abdomen more opaque, more strongly aciculate; the sides from the third segment more or less white; the two apical segments white above in the centre. Hind coxæ punctured; hind tarsi inclining to yellowish, the apices black. Outer nervure of the areolet obsolete.

22. Hemiteles montezuma. (Tab. X. fig. 26.)

Rufus; facie, orbitis maculisque thoracis, albis; mesonoto nigro, albo maculatis; alis hyalinis, stigmatate pallide testaceo. ♀.

Long. 7.5 millim.; terebra 1.5 millim.

Hab. MEXICO, Orizaba (*Bilimek*).

BIOL. CENTR.-AMER., Hymenopt., February 1886.

2 LL

Antennæ as long as the body; the scape obscure white, marked with black in the middle above; flagellum black, broadly white in the centre. Head minutely punctured; the face obscure reddish, more or less tinged with white; the rest of the head white, except the centre of the vertex and the posterior region broadly in the middle. Thorax shining, almost impunctate. Metathorax at the sides and behind the upper transverse keel rugose-striate; the base impunctate, shining, the keel joined to the base by two short carinæ, which form a narrow area; lower keel almost obsolete; tubercles broad. Mesonotum black, with two white lines on each side at the base of the middle lobe and two larger ones on the lateral lobes, bordering the middle lobe at the apex. Scutellum white; the rest of the thorax pallid testaceous, more or less suffused with white. Abdomen finely and closely punctured, the apical segments slightly bordered with white; petiole shining, impunctate. Legs testaceous; the anterior and hind tarsi whitish or whitish yellow; hind coxæ finely punctured. Areolet higher than long, angled on the lower side; the outer nervure pretty distinct.

23. *Hemiteles servilis*.

Hemiteles servilis, Cresson, Proc. Acad. Phil. 1873, p. 176 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

2. *Thorax entirely ferruginous.* (Species 24 to 27.)

a. *Head black, orbits white.* (Species 24 and 25.)

24. *Hemiteles ornaticeps*. (Tab. X. fig. 24.)

Ferrugineus; antennis (annulo excepto) nigris; annulo flagello antennarum, orbitis, clypeo, tarsisque posticis medio læte, albis; alis hyalinis, stigmatè nigro. ♀.
Long. 11 millim.; terebra 3 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Antennæ stout, bare, thickened towards the apex; the white ring broad. Head finely rugose; the clypeus shining, impunctate; face semibuccate; the orbits white, except in the centre behind; there is a triangular white mark below the antennæ, and the clypeus may be more or less white, or coloured like the rest of the head. Mesonotum shining, aciculate, the three lobes well developed and with distinct sutures; pleuræ longitudinally punctured, opaque. Scutellum smooth, shining, almost impunctate; the sides carinate at the base; flat, much narrowed towards the apex. Metathorax rugose-striate; the two transverse keels distinct, the lower keel forming a semicircular curve in the middle; tubercles longer than broad, rather blunt at the apex. Petiole aciculate, the sides keeled; postpetiole shining, impunctate; the rest of the abdomen semiopaque, aciculate. Legs stout; hind coxæ finely punctured; hind tarsi white, black at the base and apex. Areolet higher than long, angled on the lower side.

25. **Hemiteles leucosoma.**

Ferrugineus; antennis capiteque nigris; annulo antennarum, ore, prothoraceque antice, albis; alis flavo-hyalinis, medio apiceque fumatis, stigmatibus testaceo. ♀
 Long. 7 millim.; terebra 2 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Antennæ longish; scape obscure brownish on the lower side. Head opaque, finely punctured all over. Thorax finely punctured, the sides more or less striated. The prosternum broadly, the tubercles below the tegulæ, and the metathoracic tubercles, clear white. Sutures of the mesonotum obsolete. Metathorax more strongly punctured than the mesothorax; the transverse keels distinct; tubercles stout, rounded at the apex, scarcely twice as long as wide. Abdomen (including the petiole) finely and closely punctured; the apical segments yellowish at the apex. Coxæ punctured. The middle fascia in the wings is placed between the basal nervure and the base of the stigma; the cloud at the apex is broader. Areolet higher than long, open at the apex.

b. *Head ferruginous.* (Species 26 and 27.)

26. **Hemiteles mexicanus.**

Pallide ferrugineus; antennis nigris, medio annulo albo, basi testacea; orbitis flavis; alis hyalinis, fusco bifasciatis. ♀
 Long. 7 millim.; terebra 2 millim.

Hab. MEXICO (*Sallé*).

Antennæ longer than the body. Head and thorax very finely punctured, shining; scutellum aciculate; metathorax, if anything, more strongly punctured; the two transverse keels distinct, but very slightly bent upwards; tubercles absent. Abdomen finely punctured; petiole aciculate, yellowish at the base. Coxæ finely punctured; the legs more pallid in tint than the body, especially the anterior pair and the tarsi; the latter blackish at the apex. The wings have a cloud at the basal nervure, and one at the areolet, and the apex is faintly clouded. Areolet angled on the lower side; the rest and the stigma torn off.

27. **Hemiteles ruficornis.**

Rufo-testaceus; facie tarsisque pallidis; alis hyalinis, fusco bifasciatis. ♂
 Long. 9 millim.

Hab. GUATEMALA, Zapote (*Champion*).

Antennæ stout, if anything, thickened towards the apex, covered with a microscopic pile. Head minutely punctured; tips of the mandibles blackish; palpi longish, pale testaceous. Thorax closely punctured, the pleuræ more strongly than on the top, and more or less striated. Scutellum shining, impunctate. Metathorax closely punctured all over; upper transverse keel thin but distinct; tubercles and lower keel absent.

Mesonotal sutures indistinct. Pleural sutures black. First abdominal segment longish, narrow, shining, impunctate; the other segments finely punctured. The abdomen is longish and rather narrow. Coxæ punctured. Areolet 5-angular, the lower side sharply angled, the latter nervures converging at the top, the outer nervure moderately distinct. There is a distinct curved smoky cloud at the stigma, and a fainter and narrower one at the basal nervure, and the apex is also clouded.

Subfam. *PIMPLINÆ*.

So far as our present knowledge goes, this subfamily is not very numerously represented in Central America; although, on the other hand, one or two species of "Pimplinæ" appear to be the commonest of all the Ichneumons in that country. Some of the species are difficult of generic location, owing to the characters on which genera have hitherto been grounded varying in such a way as to lead one to conclude that such characters (*e. g.* the form of the abdomen) cannot be looked upon as of higher than specific rank.

RHYSSA.

Rhyssa, Gravenhorst, Ichn. Europ. iii. p. 260.

This genus contains the largest species of Pimplinæ. Our two species have the apex of the clypeus truncated, not produced in the middle, and consequently agree with *Thalessa*, Holmgren; but they have also the abdominal segments not incised, and thus differ from the latter. Species of the genus (which, considering its wide distribution, is not a large one) are found in most parts of the world, including New Zealand.

1. *Rhyssa nigratarsis*. (Tab. XI. fig. 3, ♀.)

Fulvo-testacea; antennis, mesonoto (medio excepto), linea metanoti, abdomine supra tarsisque, nigris; alis hyalinis, apice fumato. ♀.

Long. 22 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

Antennæ nearly as long as the body, stout, gradually thickened towards the apex; the base testaceous on the lower side. Head, if anything, broader than the mesothorax, the face strongly punctured, the clypeus obscurely transversely striated; with two deep shining black depressions above the antennæ, separated by a thin, rather sharp, partition; vertex punctured in front laterally, behind the ocelli aciculated; mandibles black at the apex. Pronotum reaching to near the top of the head, rising rather perpendicularly in front; the mesonotum projects a little over it, and rises from the scutellum to the apex, which has a distinct margin; the margin projects upwards in the centre, and is depressed in the middle. Mesonotum transversely striated as usual, and with a longitudinal furrow on each side on the apical three fourths; scutellum shining, obscurely

punctured, broader than long, slightly narrower towards the apex. Pleuræ shining, obscurely punctured, a longish longitudinal hollow in the middle. The mesonotum is black, except laterally in front and down the centre. Scutellum testaceous, the sutures black. There is a longish black mark under the fore wings; the base and apex of the metanotum and a broad line down its centre are black. The longish curved spiracles are bordered with black. Metanotum shining, impunctate; a curved transverse keel runs across its centre, and an oblique one from the spiracles to the apex. Abdomen shining, somewhat compressed, black above, the apex pilose; in the centre of the penultimate segment is a somewhat triangular depression covered with a white membrane; the last segment above forms a projecting thickly pilose lobe; on the lower side it projects more, and ends in two sharp horny processes which clasp the ovipositor. Ovipositor nearly three times longer than the body, white at the apex. Legs shining; the hind coxæ black at the base on the lower side. Areolet large, triangular, receiving the recurrent nervure in the middle.

2. *Rhyssa carinifrons*.

Testacea, nigro varia; antennis nigris, medio apiceque subtus testaceis; pedibus rufo-testaceis; basi et apice coxarum posticarum, apice femorum, dimidio apicali tibiæ posticarum tarsisque, nigris; alis hyalinis, apice fumato. ♀.

Long. 21 millim.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA (*Boucard*).

Antennæ as long as the body; the base, the middle narrowly, and the apex (except the extreme point), testaceous on the lower side. Face transversely punctured, the vertex impunctate; a distinct keel (separating the antennal depressions) runs down from the ocelli to a little below the base of the antennæ; eyes margined, especially on the inner side and above; testaceous, the mandibles, the antennal depressions, a broad transverse band on the vertex enclosing the ocelli, and the hind region, black. Thorax formed as in *R. nigratarsis*, testaceous; the mesonotum (except a broad mark in the centre), the sutures, the base of the metanotum broadly, the sides of the prothorax in front, a large mark on the mesopleura, and the metapleura close to the sternum, black. In the centre of the metanotum two short keels run from the transverse keel, forming a somewhat square area. Abdomen black; the ventral surface, a longish mark at the base of the first segment in the centre, its apex and the apices of the other segments broadly, testaceous. The middle coxæ are black beneath; the hind coxæ are black on the lower side at the base, and bear a longer black mark on the apex above, on the inner side they are entirely black, except a small testaceous spot; the hind femora are infuscate towards the apex, and more than the apical half of the hind tibiæ is black; tarsi black, testaceous in the middle.

What appears to be the male (from Panama) differs from the specimen from Nicaragua in having a broad white band on the antennæ close to the apex, and the yellow on the head

and body brighter in tint; there is no black on the coxæ, nor are the hind femora infuscate towards the apex; the black on the hind tibiæ is only on the outer side; and the abdomen is broadly dilated laterally at the apex.

EPIRHYSSE.

Epirhyssa, Cresson, Hymen. of Cuba, p. 39.

This genus agrees with *Rhyssa* in having the mesonotum transversely striated, but is sufficiently distinguished from it otherwise by the fore wings having no areolet. Two species have been described from Cuba, and one is known from Japan. The clypeus at the apex is incised, the incision, however, being very broad and truncated.

1. *Epirhyssa mexicana*. (Tab. XI. fig. 2.)

Epirhyssa mexicana, Cresson, Proc. Acad. Phil. 1873, p. 394 (♀)¹.

Hab. MEXICO, Orizaba¹, Cordova¹ (*Sumichrast*); GUATEMALA, San Gerónimo (*Champion*).

EPHIALTES.

Ephialtes, Gravenhorst, Ichn. Europ. iii. p. 224.

There are not many species of this genus known; but it seems to be, if anything, more numerous in the New than in the Old World.

1. *Ephialtes atriceps*.

Ephialtes atriceps, Cresson, Proc. Acad. Phil. 1873, p. 394 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. *Ephialtes annulicornis*. (Tab. XI. fig. 1.)

Niger, flavo varius; annulo flagello antennarum pedibusque flavis; coxis posticis nigro maculatis; alis flavo fumatis, stigmatè flavo.

Long. 20 millim.; terebra 30 millim.

Hab. GUATEMALA, San Isidro 1600 feet, San Gerónimo (*Champion*); PANAMA, Volcan de Chiriqui 2000 to 6000 feet (*Champion*).

Antennæ stoutish, as long as the metathorax and abdomen together, of nearly equal thickness throughout, covered with microscopic pile, the scape more or less testaceous. Head shining, impunctate, shortly pilose; tips of the mandibles, a transverse line above the antennæ, a line across the vertex through the ocelli and the occiput, black. Thorax yellowish testaceous; three longish black lines on the mesonotum; the pleural sutures, the apical half of the scutellum, the base of the metanotum, a triangular mark and an oblique line down the side, black. Mesonotum obscurely punctured, the punctures sometimes nearly obsolete; sutures deep. In the centre of the metanotum are two furrows in the form of a triangle, of which the narrow end is at the base; this

triangle is either entirely, or lined laterally with, black. Petiole broad, depressed in the centre and at the sides towards the apex; shining, impunctate. The rest of the abdomen closely punctured; the sides above projecting in the centre, and with a broad transverse furrow at the apex; an oblique depression on each side of the base of the second segment; the second and third segments are a little longer than broad, the others broader than long. Legs yellowish testaceous, the four anterior trochanters and the base of the femora more or less black; a broad line on the hind coxæ on the outer side, and the hind femora more or less lined with black above; the base and apex of the hind tibiæ sometimes black. Wings yellowish smoky, lighter posteriorly.

A very variable species. Some specimens are lighter coloured than what I have described above, the thorax and especially the abdomen having very little black. Other specimens have the abdominal segments black, narrowly edged with yellow behind. An example from the Volcan de Chiriqui (4000 to 6000 feet) has the thorax almost entirely black, except the mesopleura broadly in the middle and the mesosternum; the hinder coxæ entirely black, and the middle coxæ black behind, the femora, moreover, being more broadly lined with black; the head also bears more black than usual. The extent of the yellow ring on the antennæ varies, and the sheaths of the ovipositor vary in colour from black to piceous.

3. *Ephialtes nigricans*. (Tab. XI. fig. 5.)

Niger; femoribus, tibiisque anterioribus flavo-testaceis, tibiis posticis sordide testaceis; alis fusco-hyalinis, stigmatibus nigro. ♀.

Long. 21 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Antennæ thickish, shorter than the body. Face covered with longish white hair, finely punctured; a broad transverse depression above the antennæ; a short broad furrow leads into this from the ocelli. Thorax shining, indistinctly punctured, sparsely covered with white hair; metanotum broad in the middle, transversely striated, the base punctured, the apex shining and impunctate. Abdomen closely punctured, less strongly so towards the apex, the sides covered with longish white hair; a longish irregular depression on either side of the basal segments; the other segments dilated in the middle on either side. The ventral surface is obscure testaceous; above, the apical segments are more or less brownish. The ovipositor is longer than the body. The anterior tarsi are testaceous in front, partly black behind. Areolet broadly triangular.

THERONIA.

Theronia, Holmgren, Öfv. 1859, p. 123; Sv. Ak. Handl. 1860, p. 16.

The species of this small genus are usually yellow or luteous in coloration. They are found in Europe and North America, very few species, however, being known.

1. *Theronia montezuma*.

Theronia montezuma, Cresson, Proc. Acad. Phil. 1873, p. 395 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova (*Sumichrast*), Mirador¹ (*Dr. Sartorius*).

Said to be a common Mexican species.

2. *Theronia lineata*. (Tab. XI. fig. 4.)

Pimpla lineata, F. Smith, Descr. of New Species of Hymen. p. 230 (1879)¹.

Hab. GUATEMALA, San Gerónimo, Zapote, Panajachel 5000 feet; COSTA RICA, Irazu¹ 6000 to 7000 feet (*Rogers*); PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Allied to the preceding species, but differing in having the antennæ nearly as long as the body (these in *T. montezuma* being described as "more than one half the length of the body"), by the petiole not having "two longitudinal lines, divergent at the base and confluent at the tip," and by the abdominal segments being lined with black at the base. Face obscurely punctured, the vertex sometimes obscure black in the middle; tips of the mandibles black. Mesonotum sometimes punctured; its sutures scarcely indicated; there are three black longitudinal lines on its surface, and sometimes it is black along the edge of the pronotum. Scutellum covered with blackish erect hair; its basal fovea black. Metathorax shining, impunctate, its transverse keel well defined. Petiole longer than the second segment, depressed along the sides above, so that the central part is raised; and in the centre of the latter is a longitudinal depression; apex of the second segment raised into a transverse border. Ovipositor about one half of the length of the abdomen. Areolet oblique, the lateral nervures united above or nearly so. Antennæ stout, microscopically pilose; scape yellowish beneath.

The species varies a little in size.

3. *Theronia tolteca*.

Theronia tolteca, Cresson, Proc. Acad. Phil. 1873, p. 396 (♂ ♀)¹.

Cryptus ferrugineus, F. Smith, Descr. of New Species of Hymen. p. 231 (1879)².

Hab. MEXICO, Orizaba¹ (*Sumichrast*), Valladolid in Yucatan (*Gaumer*); NICARAGUA, Chontales (*Janson*); COSTA RICA, Cache² (*Rogers*); PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

4. *Theronia chiriquensis*. (Tab. XI. fig. 6.)

Hab. PANAMA, Volcan de Chiriqui 2000 to 6000 feet (*Champion*).

In coloration identical with *T. tolteca* (*i. e.* uniformly ferruginous above, the pleuræ and the base of the four anterior legs inclining to yellow, the flagellum and the hind tarsi black), but, if anything, longer and stouter, and differing also as follows:—The ovipositor is shorter, being scarcely longer than the petiole; the metanotum has,

in addition to the transverse carina, an equally distinct carina going down each side from a transverse keel at the extreme base; by the depression in the middle of the metanotum at the base being longer and broader; by the scutellum being more gibbous; by the petiole having distinct tubercles in the centre towards the middle, there being also a longitudinal depression in the middle above. The wings are, as in *T. tolteca*, hyaline, smoky at the apex, the cloud being darkest. Antennæ as long as the body.

5. *Theronia mellosa*.

Theronia mellosa, Cresson, Proc. Acad. Phil. 1873, p. 396 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova¹ (*Sumichrast*).

6. *Theronia tacubaya*.

Theronia tacubaya, Cresson, Proc. Acad. Phil. 1873, p. 397 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova¹ (*Sumichrast*).

Said to be common in Mexico.

7. *Theronia consimilis*.

Pimpla consimilis, Cresson, Proc. Ent. Soc. Phil. iv. p. 37 (♀)¹.

Theronia consimilis, Cresson, Proc. Acad. Phil. 1873, p. 397².

Hab. MEXICO, Orizaba, Cordova² (*Sumichrast*), Mirador² (*Dr. Sartorius*).—ANTILLES, Cuba¹.

PIMPLA.

Pimpla, Fabricius, Syst. Piez. p. 112.

An extensive genus, common in all parts of the world.

1. *Pimpla sedula*. (Tab. XI. fig. 10, ♀.)

Nigro-cærulea, nitida; alis fumatis. ♀.

Long. 13 millim.; terebra 4 millim.

Hab. PANAMA, Volcan de Chiriqui 8000 feet (*Champion*).

Smooth, shining, impunctate. Antennæ as long as the body; the third joint scarcely so long as the two following joints united. Sides of the metanotum obscurely transversely striated, the middle transverse keel very distinct. Scutellum carinate at the base. Base of the abdomen semiperpendicular, hollow in the centre; sides of the segments depressed in the centre above. Areolet 4-angled, angled where the recurrent nervure is received in the apical third.

Allied to *P. cæruleata*, but larger and wanting the metallic blue and violet tinges, and otherwise very different in having the body quite devoid of sculpture.

BIOL. CENTR.-AMER., Hymenopt., April 1886.

2 MM

2. *Pimpla cæruleata*.

Pimpla cæruleata, Cresson, Proc. Acad. Phil. 1873, p. 397 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova¹ (*Sumichrast*).

3. *Pimpla croceipes*. (Tab. XI. fig. 12, ♀.)

Pimpla croceipes, Cresson, Proc. Acad. Phil. 1873, p. 398 (♂ ♀)¹.

Pimpla modesta, F. Smith, Descr. of New Species of Hymen. p. 229².

Hab. MEXICO, Orizaba¹ (*Sumichrast*); GUATEMALA, San Gerónimo, Purula, Las Mercedes 3000 feet (*Champion*); COSTA RICA, Cache, Irazu² 6000 to 7000 feet (*Rogers*); PANAMA, Volcan de Chiriqui 2000 to 6000 feet (*Champion*).

One of the commonest and most widely distributed of the Central-American Ichneumons. It varies greatly in size.

4. *Pimpla punicipes*. (Tab. XI. fig. 16, ♀.)

Pimpla punicipes, Cresson, Proc. Acad. Phil. 1873, p. 398 (♀)¹.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*), Orizaba¹ (*Sumichrast*).

5. *Pimpla montezuma*.

Hab. MEXICO, Chapultepec (*Bilimek*).

Identical in coloration with *P. punicipes* (black, with the legs red and the tegulæ white), but smaller and narrower; the antennæ shorter, being scarcely longer than the abdomen, while in *P. punicipes* they are nearly as long as the thorax and abdomen together; the ovipositor much longer, being fully three fourths of the length of the abdomen; the metanotum shining and impunctate; the petiole shining and scarcely punctured, and with an oblique punctured depression on each side at the apex above; the abdomen longer, the segments not so strongly punctured, and with a wider impunctate band at the apices; the wings have a darker tint, and have the stigma livid testaceous. The pleuræ and head are punctured, but not strongly; palpi yellow; sheath of the ovipositor densely pilose.

6. *Pimpla feralis*.

Pimpla feralis, Cresson, Proc. Acad. Phil. 1873, p. 399 (♂)¹.

Hab. MEXICO, Milpas 5900 feet (*Forrer*), Orizaba¹ (*Sumichrast*); GUATEMALA, Volcan de Atitlan 2500 to 3500 feet (*Champion*).

7. *Pimpla mexicana*.

Nigra; tegulis palisque albis; scutello, pedibus maculaque pleurali rufis; tibiis posticis albis, apice nigris; tarsis posticis pallidis, nigro annulatis; alis subfumatis, stigmatè sordide testaceo. ♀.
Long. 10 millim.; terebra 1.5 millim.

Hab. MEXICO (*Bilimek*).

Antennæ scarcely so long as the abdomen ; fuscous on the lower side (especially towards the base of the flagellum) ; covered with a microscopic pile. Head finely punctured, semiopaque. Mesonotum aciculate ; pleuræ shining, impunctate ; a broad oblique reddish band proceeding from the tegulæ to the hind coxæ. Metathorax finely punctured, aciculate in the middle above. Abdomen closely and somewhat strongly punctured, the apices of the segments shining. Sheaths of the ovipositor thick, densely pilose, a little shorter than the tibiæ.

8. *Pimpla crassicauda*.

Pimpla crassicauda, Cresson, Proc. Acad. Phil. 1873, p. 399 (♀) ¹.

Hab. MEXICO, Orizaba ¹ (*Sumichrast*).

9. *Pimpla albipes*.

Pimpla albipes, Cresson, Proc. Acad. Phil. 1873, p. 399 (♀) ¹.

Hab. MEXICO, Orizaba ¹ (*Sumichrast*).

10. *Pimpla coxata*. (*Pimpla coxator*, Tab. XI. fig. 14, ♀.)

Pimpla coxata, F. Smith, Descr. of New Species of Hymen. p. 229 (1879) ¹.

Hab. COSTA RICA, Irazu ¹ 6000 to 7000 feet (*Rogers*).

This is perhaps only a variety of *P. albipes* ; it has, however, the hind coxæ lined with black on the inner and outer sides.

11. *Pimpla albo-marginata*. (Tab. XI. fig. 15, ♀.)

Nigra ; labro, palpis, maculis thoracis, linea pronoti, tegulis, metathoracis apice, scutello, abdominis apice pedibusque anticis, albis ; pedibus posterioribus rufis ; tibiis tarsisque posticis nigris ; alis hyalinis, stigmatibus fusco. ♀.

Long. 7.5 millim. ; terebra 2 millim.

Hab. MEXICO (*Sallé*).

Antennæ nearly as long as the body, filiform ; fuscous on the lower side of the flagellum, white on the lower side of the scape ; third joint a little shorter than the two following joints together. Head sparsely covered with whitish pile, very minutely punctured ; face broadly projecting. Thorax scarcely punctured, shining ; a broad line above the prosternum, a broader one on the edge of the pronotum, the tegulæ, the tubercles below them, a somewhat pear-shaped mark on the mesopleura, a longish oblique line along the suture, the hind wings beneath, a roundish mark over and a little in front of the middle coxæ, another over the hind coxæ, the scutellum, the postscutellum, the apex of the metathorax, and the apices of all the abdominal segments broadly, white. Over the hind coxæ the metapleuræ are reddish like the hind legs, the white mark being within

this red space. Petiole reddish at the sides and in the middle; the sides above at the base white; the middle broadly black. Ovipositor piceous red. The middle tibiæ have an obscure white band above the middle; the hind pair are obscure reddish on the outer side; the tips of the fore tarsi and the greater part of the middle tarsi fuscous. Wings slightly tinted with a smoky hue at the apex; nervures fuscous; areolet oblique, outer nervure pale; the recurrent nervure received beyond the middle in an obtuse angle.

12. **Pimpla semisanguinea.**

Pimpla semisanguinea, Cresson, Proc. Acad. Phil. 1873, p. 400 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

13. **Pimpla sumichrasti.**

Pimpla sumichrasti, Cresson, Proc. Acad. Phil. 1873, p. 400 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

14. **Pimpla azteca.**

Pimpla azteca, Cresson, Proc. Acad. Phil. 1873, p. 401 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

15. **Pimpla marginipennis.**

Pimpla marginipennis, Cresson, Proc. Acad. Phil. 1873, p. 401 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

16. **Pimpla zonata.**

Pimpla zonata, Cresson, Proc. Acad. Phil. 1873, p. 401¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

17. **Pimpla zapoteca.**

Pimpla zapoteca, Cresson, Proc. Acad. Phil. 1873, p. 402 (♂ ♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

18. **Pimpla (?) chichimeca.**

Pimpla (?) chichimeca, Cresson, Proc. Acad. Phil. 1873, p. 402 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

19. **Pimpla ichneumoniformis.**

Pimpla ichneumoniformis, Cresson, Proc. Acad. Phil. 1873, p. 403 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

20. **Pimpla xanthostigma.** (Tab. ~~XX~~^{XI}. fig. 9, ♀.)

Nigra, flagello antennarum testaceo; alis flavo fumatis, stigmatate flavo. ♀.
Long. 16 millim.; terebra 5 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Antennæ longer than the body, the third joint nearly as long as the two succeeding joints together. Head closely punctured; vertex broadly depressed in front of the ocelli. Pro- and mesonotum opaque, very closely punctured; pleuræ and scutellum more shining and with the punctures more widely set apart. Metapleura coarsely rugose; metanotum coarsely transversely striated. First abdominal segment more than double as long as wide, longitudinally punctured, the base and apex shining, impunctate, the base hollowed in the centre; there is a distinct shining tubercle on either side of the middle of the segment. The other segments punctured, the punctuation becoming finer towards the apex; the apices shining, almost impunctate. The anterior tibiæ and femora are testaceous in front; the tibiæ reddish, the stiff pile with which they are covered being also reddish; spurs reddish. Areolet slightly pedunculate above; the recurrent nervure received in the apical third.

The wings vary in tint, the hind portion being usually lighter than the front. The face and the sides of the metanotum and of the basal segment of the abdomen are sometimes brownish.

21. **Pimpla cressoni.**

Pimpla braconoides, Cresson, Proc. Acad. Phil. 1873, p. 404 (♀)¹ (nec Smith).

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

22. **Pimpla atriceps.**

Pimpla atriceps, Cresson, Proc. Acad. Phil. 1873, p. 404 (♂)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

23. **Pimpla argentifrons.** (Tab. XI. fig. 17, ♀.)

Nigra, scutello tegulisque albis; abdomine pedibusque rufis; coxis anterioribus palpisque flavis; alis hyalinis, stigmatate testaceo. ♀.

Long. 14-16 millim.; terebra 4-5 millim.

Hab. GUATEMALA, Mirandilla 1700 feet (*Champion*); PANAMA (*Boucard*).

Antennæ thin, longer than the body. Head and metathorax covered with a silvery pubescence; face closely punctured, the centre not so strongly; vertex shining, impunctate; clypeus and labrum more or less white. Pro- and mesothorax semiopaque, obscurely aciculated. Metapleura somewhat strongly punctured; basal half of the metanotum strongly transversely striated, the apex shining, impunctate, and with rather an oblique slope, without distinct transverse keel. Basal segment of the abdomen broad, about one half longer than wide; the basal half hollowed, shining, almost

impunctate; the apical half strongly punctured, except at the apex, which is shining and impunctate; the rest of the abdomen closely punctured, the punctuation finer towards the apex. Tips of the tarsi blackish; coxæ shining, impunctate. Areolet sharply angled where the recurrent nervure is received a little beyond the middle.

EPIMECIS.

Epimecis, Brullé, Hist. Nat. Ins. Hymén. iv. p. 112.

The chief distinctive characters of this genus consist in the greatly elongated prothorax, the head being narrower behind so as to fit into it, the head here being wider than the collar and provided with a distinct raised border; the eyes are large, lateral, projecting, incised at the antennæ, above almost touching the ocelli, below nearly reaching to the mandibles; the ocelli large, oval, and placed on the extreme summit of the head; the mesonotal sutures moderately deep; the abdomen much more than double the length of the thorax, narrow, becoming gradually wider towards the apex, with a depression on each side of the first four segments; there is no areolet, and the spurs are simple.

The elongated collar, the eyes reaching to the base of the mandibles, and the existence of depressions at the sides of the abdominal segments sufficiently distinguish this genus from *Pimpla*.

1. *Epimecis* (?) *thoracica*.

Epimecis (?) *thoracicus*, Cresson, Proc. Acad. Phil. 1873, p. 395 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. *Epimecis tibialis*. Tab. XII. fig. 1, ♀.)

Lutea; antennis, capite, femoribus posticis, tibiis posticarum dimidio apicali, apice tarsorum abdominisque apice, nigris; alis flavo-hyalinis, nigro fasciatis. ♀ et ♂.

Long. 21 millim.; terebra 8 millim.

Hab. MEXICO, Valladolid in Yucatan (*Gaumer*); GUATEMALA, San Gerónimo (*Champion*); PANAMA, David in Chiriqui (*Champion*).

Antennæ as long as the body, inclining to brownish on the lower side, covered with a microscopic pile; scape with longish hair; the joints a little produced at the apices; third joint nearly one fourth longer than the fourth. Head shining, impunctate; face bluntly keeled; clypeus projecting and clearly separated; palpi dark testaceous. Thorax shining, impunctate; scutellum gibbous; an indistinct furrow in the centre of the basal half of the metathorax. Abdomen shining, impunctate; a tubercle at the base of the four basal segments; apex pilose, punctured laterally; cerci longish, hairy. Legs densely pilose. In the fore wings the middle cloud ends at the base of the stigma, and that in the hind wings is immediately opposite it; the apical cloud in the fore wings commences a little beyond the recurrent nervure.

E. fasciata, Brullé, from Brazil, is very like the present species, and may be a variety of it.

3. *Epimecis mexicana*.

Lutea; antennis, capite (ore excepto) pedibus posticis abdominisque apice læte, nigris; alis flavo-hyalinis, nigro fasciatis, stigmatè flavo. ♀.
Long. 12 millim.; terebra 5 millim.

Hab. MEXICO (*Bilimek*).

Differs from *E. tibialis* in being smaller, and in the apex of the abdomen being more widely, and in the hind legs being entirely, black.

GLYPTA.

Glypta, Gravenhorst, Ichn. Europ. iii. p. 4.

A well-marked genus of wide distribution.

1. *Glypta longula*.

Glypta longula, Cresson, Proc. Acad. Phil. 1873, p. 405 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. *Glypta rufomarginata*. (Tab. XI. fig. 18, ♀.)

Nigra; thorace rufo, ore, linea pronoti, tegulis, postscutello pedibusque, albis; antennis nigris, subtus fuscis; alis hyalinis, stigmatè fusco. ♀.
Long. 8 millim.; terebra 6 millim.

Hab. MEXICO, Chapultepec (*Bilimek*).

Antennæ scarcely so long as the body, moderately stout, the joints closely united together. Mesonotal sutures not very distinct; edge of the pronotum produced into a tubercle in front. Pronotum edged above and beneath with white; a blackish mark dilated laterally (posteriorly) in the middle, the rest reddish; mesothorax red, except the sutures and the scutellar region which are black, and a large yellow mark on the mesopleura; the sternum also inclining to yellow; metanotum black, except laterally, with a transverse keel across just beyond the middle, and another immediately behind the extreme apex. Abdomen closely punctured; the oblique lines broad and moderately deep; the edges of the segments raised; the ventral surface and the edges of the segments (the third and fourth broadly) reddish. Ovipositor black, pilose, longer than the abdomen. The hind coxæ incline to fulvous; the extreme apices of the tibiæ, and the tarsal joints narrowly at the apex, black.

3. *Glypta albopicta*.

Glypta albopicta, Cresson, Proc. Acad. Phil. 1873, p. 405 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

4. *Glypta decolorata*.

Glypta decolorata, Cresson, Proc. Acad. Phil. 1873, p. 406 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

ODONTOPIIMPLA.

In the form of the body this genus agrees with *Pimpla*, but differs from it in having the hind femora thickened and with a tooth on the middle beneath; the tibiae are stouter, the anterior pair being curved and slightly dilated at the apical half, and the posterior pair curved at the base; the tibial spurs are very short and thick; the tarsi are much shorter than the tibiae, and the antennae are stouter; and the clypeus is incised.

The petiole is deeply excavated on the basal half; on the other abdominal segments there is a deep curved transverse depression, there being also a longitudinal one running into the transverse furrow on the second segment; the depression on the sixth segment is interrupted in the middle; the seventh segment is broadly, but not deeply, depressed in the centre, and there is an obscure, shallow, narrow furrow on the eighth. The ventral segment, the neurulation, and the form of the head as in *Pimpla*.

The structure of the femora is not unlike what we have in *Odontomerus*, but in that genus the form of the head and abdomen is different, and there is no areolet.

1. *Odontopimpla pulcherrima*. (Tab. XI. fig. 11, ♀.)

Pimpla (?) *pulcherrima*, Cresson, Proc. Acad. Phil. 1873, p. 404 (♀)¹.

Pimpla laevigata, F. Smith, Descr. of New Species of Hymen. p. 229 (1879)².

Hab. MEXICO, Cordova¹ (*Sumichrast*); COSTA RICA, Cache² (*Rogers*).

LYCORINA.

Lycorina, Holmgren, Sv. Ak. Handl. 1860, p. 43; Cresson, Proc. Acad. Phil. 1873, p. 406.

1. *Lycorina* (?) *apicalis*.

Lycorina (?) *apicalis*, Cresson, Proc. Acad. Phil. 1873, p. 407 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

MENISCUS.

Meniscus, Schiödte in Guérin's Mag. Zool. 1839, Ins. t. 6-10, p. 10.

1. *Meniscus crassitarsus*.

Meniscus crassitarsus, Cresson, Proc. Acad. Phil. 1873, p. 409 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. **Meniscus mexicanus.**

Meniscus mexicanus, Cresson, Proc. Acad. Phil. 1873, p. 410 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

3. **Meniscus (?) alternatus.**

Meniscus (?) alternatus, Cresson, Proc. Acad. Phil. 1873, p. 410 (♂)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

4. **Meniscus (?) orbitalis.**

Meniscus? orbitalis, Cresson, Proc. Acad. Phil. 1873, p. 411 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

LISSONOTA.

Lissonota, Gravenhorst, Ichn. Europ. iii. p. 30 (1829).

The species I have described here are better placed in *Lissonota* than in any other genus. The only point in which they differ from the typical species is that the clypeus is slightly incised. None of the species have an areolet, but the absence of this is not looked upon as of generic value.

1. **Lissonota albispina.** (Tab. XI. fig. 19.)

Nigra; annulo antennarum, orbitis anticis tarsisque posticis, albis; alis fere hyalinis, stigmatate nigro. ♀.
Long. 12-13 millim.

Hab. PANAMA, Volcan de Chiriqui 200 to 600 feet (*Champion*).

Very closely and uniformly punctured all over, the legs more closely and finely punctured than the body. Antennæ as long as the body, the white band interrupted on the lower side. Head projecting in the middle in front, the projection depressed at the base and apex; clypeus projecting, more strongly punctured than the face; labrum, and the apical joints of the palpi, white. Mesonotum without sutures; metanotum longish, having a gradual slope to the apex, with a distinct longitudinal keel on the outer side of the spiracles, an indistinct transverse one not far from the apex, and a more distinct one immediately before the apex. Pleuræ covered with short silvery pubescence. Abdomen carinate on the ventral surface at the base, the first segment the longest; the apices of the first and second segments, the base of the third narrowly, and the apical segments at the apex more broadly, white. Basal three fourths of the metatarsus, and the apices of the hind tarsi, black.

2. **Lissonota leucozona.**

Nigra; ore, facie, orbitis, tegulis, sterno, pleuris pro parte, lineis 2 mesonoti, scutello, postscutello, metanoto laterali, abdominis segmentis apice, coxis anterioribus, tibiæ posticarum dimidio basali medioque tarsorum posticorum, albis; alis hyalinis, stigmatate nigro. ♀.
Long. 11 millim.

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Hab. GUATEMALA, El Tumbador 2500 feet (*Champion*).

Finely and closely punctured all over, the abdomen more shining and less strongly punctured than the thorax. Face with a projecting longish tubercle in the centre; a fine longitudinal keel leading down from the ocelli to near the base of the antennæ; clypeus projecting, convex, clearly separated behind by a wide and deep furrow; its apex incised in the middle (but not broadly), the sides oblique. Behind the head is black, except at the orbits; the middle of the vertex to the antennæ (prolonged as a narrow stripe down the face to the clypeus) is also black; tips of the mandibles black. The prothorax broadly in front, the greater part of the mesopleuræ and sternum, the tubercles below the tegulæ, a large mark on the metapleuræ, two narrow lines on the mesonotum, the scutellum, the postscutellum, and two large longish marks on the sides of the metanotum, white. Base of the petiole broadly, its apex and the bases and apices of the other segments more narrowly, white. Anterior legs white behind, the femora lined with black above, the tibiæ and tarsi fuscous behind; middle coxæ white, with a large black mark behind, the femora and tibiæ black behind, white in front, the tarsi almost entirely black; hind coxæ black, white at the apex and with a white mark at the base behind, the femora entirely black, the tibiæ black, the basal half white in front and slightly so behind, the tarsi white, except at the base and apex.

3. *Lissonota erythropoda*.

Nigra; annulo antennarum, ore, facie, orbitis, pleuris, tegulis, lineis 2 mesonoti, scutello postscutelloque, albis; abdomine pedibusque rufis; alis hyalinis, stigmatè testaceo. ♀.

Long. 12 millim.; terebra 10 millim.

Hab. GUATEMALA, Dueñas (*Champion*).

Very finely and closely punctured. Head whitish yellow, except behind (orbits excepted) and the centre of the vertex; structurally as in *L. leucozona*. Prothorax in front, the mesopleuræ (except at the sides and immediately beneath the wings), the tegulæ, the tubercles beneath them, the sternum, a large mark on the metapleura, two narrow lines on the mesonotum, the scutellum, the postscutellum, the metanotum laterally at the base and apex, and the abdominal segments narrowly at the apex, white. Metanotum laterally reddish; the transverse keel more distinct than in the other species of the genus, and a little more sharply upturned in the middle. Four anterior coxæ more or less yellowish; hind tarsi yellowish, black at the base and apex.

4. *Lissonota pulchra*.

Nigra; annulo antennarum, facie, ore, orbitis, prosterno, mesosterno, tegulis, macula mesonoti, scutello, postscutello maculaque metanoti, albis; pedibus rufis, tarsis posticis nigris, medio læte albis; alis hyalinis, stigmatè griseo.

Long. 10 millim.

Hab. MEXICO (*Sallé*).

Face finely punctured; white, except a broad black line from the antennæ to the base

of the clypeus; front depressed above the antennæ, a keel in the centre of the depression. Thorax opaque, very closely and finely punctured; the prosternum, the mesosternum, a squarish large mark above it, the tegulæ, the tubercle below them, a large mark in the centre of the mesonotum, the scutellum, a large mark on the metapleuræ, a transverse line across the apical third of the metanotum (prolonged upwards on each side and ending in an oblong dot), white. Abdomen black, opaque, finely punctured; the base of the petiole and of the remaining segments, the sides also of the three apical ones broadly, and the ventral surface, reddish; the apices of the segments yellow, the yellow bordered with red on the apical segment. The four anterior tarsi are fuscous; the hind pair black at the base and apex, the intermediate part white; the apices of the hind tibiæ, and the spurs, black; fore coxæ, and the base of the middle pair, yellow; hind coxæ closely punctured.

Differs from *L. erythropoda* in being longer; in having a mark (not two lines) on the mesonotum; in having only a small mark on the mesopleura; in having a transverse yellow line on the metanotum, &c.

5. **Lissonota leucopoda.** (Tab. XI. fig. 20.)

Nigra; facie, orbitis anticis, lineis pronoti, pleuris, sterno pedibusque, albis; mesonoto cum tegulis pleurisque supra, rufis; alis hyalinis. ♀ et ♂.
Long. 8.5 millim.; terebra 6 millim.

Hab. PANAMA, Bugaba (*Champion*).

Head broader than the thorax, shining, impunctate; white, except behind (orbits excepted) and at the middle of the vertex. Thorax shining, pilose (especially on the metathorax); mesonotum bearing clearly separated punctures; metathorax more closely and strongly punctured, and with two distinct transverse keels, in front of the keels almost impunctate. Abdomen finely and closely punctured. Prothorax black, except on the lower side; lower half of the mesopleuræ, and nearly the whole of the metapleuræ, white; upper half of the mesopleuræ red. Mesonotum red, except at its junction with the pronotum, where it is yellow; sides of the scutellum, and the post-scutellum, yellow. Metanotum black. Apices of the abdominal segments white; sheaths of the ovipositor black, pilose. Antennæ nearly as long as the body, pilose. Apices of the hind tibiæ, and of the tarsi, black.

← *Mexicana Cr.*

PHYTODIETUS.

Phytodietus, Gravenhorst, Ichn. Europ. ii. p. 929.

A not uncommon genus in the temperate regions of the globe, and probably of wide distribution. I have placed here the species which Cresson has described under *Lampronota* (= *Lissonota*): they certainly do not belong either to *Lampronota* (= *Cylloceria*, Schiödte) or *Lissonota* (which name is sunk by American authors in favour of *Lampronota*, Curtis), as they all have pectinated claws.

1. *Phytodietus cressoni*.

Ferrugineus; flagello antennarum, metanoto pro parte, macula magna coxarum posticarum medioque abdominis segmentis 1^{mo} et 2^o, nigris; alis hyalinis, stigmatibus sordide testaceo. ♀.

Long. 11 millim.; terebra 9 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Closely punctured, the apical segments of the abdomen very slightly; metanotum with a transverse keel. Orbits, the mandibles (except at the apex), and a narrow ring on the antennæ, yellow; centre of the mesonotum obscurely, the mesopleuræ in front, the metanotum (except a large space in the centre at the base), the first and second segments of the abdomen broadly in the middle, the two anterior coxæ broadly at the base, and the posterior coxæ entirely behind, black. The hind femora are more or less black above and beneath; tips of the tarsi black. Areolet oblique, triangular above, angled beneath where the recurrent nervure is received before the middle.

2. *Phytodietus guatemalensis*. (Tab. XI. fig. 21.)

Ferrugineus; flagello antennarum nigro, annulo albo; alis flavo-hyalinis, stigmatibus sordide testaceo. ♀.

Long. 13 millim.; terebra 11 millim.

Hab. GUATEMALA, San Gerónimo, Dueñas (*Champion*); PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Closely and finely punctured all over; clypeus with larger and more distinctly separated punctures; abdomen not so strongly punctured as the thorax, especially towards the apex. Tubercle below the antennæ large, narrower at the apex. Orbits more or less yellowish; mandibles yellowish, black at the tips. Scutellum narrower towards the apex, with distinct keels at the base; metanotum with a transverse keel near the apex. Areolet oblique, triangular above, not much angled on the lower side.

3. *Phytodietus gracilicornis*.

Phytodietus gracilicornis, Cresson, Proc. Acad. Phil. 1873, p. 411 (♂ ♀)¹.

Hab. MEXICO, Orizaba; Cordova¹ (*Sumichrast*).

4. *Phytodietus mexicanus*.

Phytodietus mexicanus, Cresson, Proc. Acad. Phil. 1873, p. 412 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

5. *Phytodietus orizabensis*.

Lampronota mexicana, Cresson, Proc. Acad. Phil. 1873, p. 407 (♂ ♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

6. *Phytodietus aztecus*.

Lampronota azteca, Cresson, Proc. Acad. Phil. 1873, p. 408 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

7. Phytodietus bellus.*Lampronota bella*, Cresson, Proc. Acad. Phil. 1873, p. 408¹.*Hab.* MEXICO, Cordova¹ (*Sumichrast*).**8. Phytodietus orbitalis.***Lampronota orbitalis*, Cresson, Proc. Acad. Phil. 1873, p. 408 (♀)¹.*Hab.* MEXICO, Orizaba¹ (*Sumichrast*).**9. Phytodietus (?) jucunda.***Lampronota (?) jucunda*, Cresson, Proc. Acad. Phil. 1873, p. 409 (♀)¹.*Hab.* MEXICO, Orizaba¹ (*Sumichrast*).

AGATHILLA.

Agathilla, Westwood, Tijd. v. Ent. xxv. p. 23.

Judging from the figure and description, I conclude that this genus belongs to the "Pimplides," rather than to the "Ichneumonones adsciti," among which it is placed by Westwood. The single described species is from Mexico.

1. Agathilla fulvo-picta.*Agathilla fulvo-picta*, Westwood, Tijd. v. Ent. xxv. p. 24, t. b. figg. 1-7¹.*Hab.* MEXICO (*Coffin*¹).

Subfam. XORIDINÆ.

LABENA.

Mesochorus, Brullé, Nat. Hist. Ins. Hymén. iv. p. 249 (nec Grav.).*Labena*, Cresson, Proc. Ent. Soc. Phil. 1864, p. 399; Walsh, Trans. St. Louis Acad. Science, 1873, p. 162.

A well-marked genus, containing but few species, and only found in North America and Mexico.

1. Labena gloriosa.*Labena gloriosa*, Cresson, Proc. Acad. Phil. 1873, p. 412 (♀)¹.*Hab.* MEXICO, Mirador¹ (*Dr. Sartorius*).**2. Labena grillator.***Cryptus grillator*, Say, Bost. Journ. Nat. Hist. i. p. 236¹; Leconte, Complete Writings of Thomas Say, ii. p. 692.*Labena grillator*, Cresson, Proc. Ent. Soc. Phil. 1864, p. 400 (♂ ♀)²; Walsh, Trans. St. Louis Acad. Science, 1873, p. 162³.*Mesochorus fuscipennis*, Brullé, Hist. Nat. Ins. Hymén. iv. p. 250.

Hab. NORTH AMERICA, United States ^{2 3}, Indiana ¹.—MEXICO, Northern Sonora (*Morrison*).

This fine large species has been bred from hickory stems infested by the beetle *Cerasphorus cinctus*, Fabr.

Subfam. *TRYPHONINÆ*.

This division of Ichneumonidæ is of comparative rarity in Central America, only three species being known from south of Mexico. In the northern parts of Mexico they will, no doubt, be found to be much more numerous represented.

METOPIUS.

Metopius, Panzer, Krit. Revis. ii. p. 78; Cresson, Proc. Acad. Phil. 1873, p. 393.

A very distinct genus, of wide distribution in the New and Old Worlds, but apparently not containing many species.

1. *Metopius femoratus*. (Tab. XI. fig. 23.)

Metopius femoratus, Cresson, Proc. Acad. Phil. 1873, p. 393 (♂)¹.

Hab. MEXICO, Orizaba (*Bilimek*), Cordova ¹ (*Sumichrast*).

2. *Metopius scutifrons*.

Metopius scutifrons, Cresson, Proc. Acad. Phil. 1873, p. 393 (♂)¹.

Hab. MEXICO, Orizaba ¹ (*Sumichrast*).

EXOCHOIDES.

Exochoides, Cresson, Trans. Am. Ent. Soc. 1868, p. 37.

This genus is at present only known from Mexico. It differs from *Exochus* in having the face flat, the legs less robust, and the abdomen subpetiolate.

1. *Exochoides mexicana*.

Exochoides mexicana, Cresson, Trans. Am. Ent. Soc. 1868, p. 37 (♂)¹.

Hab. MEXICO, Hacienda del Potrero, near Cordova ¹ (*Sumichrast*).

2. *Exochoides concinna*.

Exochoides concinna, Cresson, Trans. Am. Ent. Soc. 1868, p. 37 (♂)¹.

Hab. MEXICO, Hacienda del Potrero, near Cordova ¹ (*Sumichrast*).

EXOCHUS.

Exochus, Gravenhorst, Ichn. Europ. ii. p. 328; Cresson, Proc. Acad. Phil. 1873, p. 38.

A genus apparently of no great extent, and chiefly known from the Palæarctic and Nearctic Regions.

A. *Areolet wanting.*1. ***Exochus stramineipes.*** (Tab. XI. fig. 7.)

Niger, nitidus; ore, facie, orbitis, palpis, tegulis, linea pronoti, mesopleuralis medio pedibusque, stramineis; coxis, trochanteribus femorumque posticorum basi, tiliarum posticarum basi tarsisque posterioribus, nigris; alis fere hyalinis, nervis nigris. ♂.

Long. 8 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 6000 feet (*Champion*).

Smooth, shining, almost impunctate, the abdomen at the apex sparsely pilose. Antennæ as long as the abdomen and metathorax together, moderately stout; the first joint large, somewhat pyriform, yellow on the lower side. Vertex raised in the centre, the ocelli projecting; orbits broadly yellow, except in the middle behind. Mesonotum flat, bearing shallow punctures; scutellum impunctate; the fovea at its base deep. Metanotum bearing two carinæ in the centre and one on either side at the edge; this latter bearing a short tubercle where the metanotum slopes down; there is another keel along the pleural region above the middle. Petiole depressed above at the basal half, the depression bordered by fine keels, the remaining segments without keels. Legs stout; hind coxæ, the femora (especially), and tibiæ, thickened. Wings obscure smoky; areolet wanting.

2. ***Exochus puncticeps.***

Niger; facie, palpis, linea pronoti, apice scutelli, postscutello pedibusque, flavo-rufis; alis hyalinis, stigmatibus testaceo. ♂.

Long. 7 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ a little longer than the abdomen, brownish beneath, densely pilose; third joint about one fourth longer than those succeeding, the two basal joints subequal. Face broadly and roundly projecting, closely pilose, strongly punctured from the antennæ to the apex of the scutellum, which is shining and impunctate; vertex shining, depressed above the antennæ; the orbits are narrowly lined with yellow above the antennæ. Mesonotum closely punctured, scarcely shining; scutellum impunctate, its apex and the sides broadly to near the base, yellow; pleuræ and sternum shining, the pleuræ in front obscurely punctured. Metanotum opaque, aciculate, except the centre and apex; there are eight areae; suprmedian area longer than broad, the apex produced into an angle in the middle; metapleuræ shining, impunctate; the metanotum

bears longish, rather dense, hair. Abdomen closely punctured, pilose; petiole depressed in the centre at the base; two stout, slightly converging, keels run from the base to near the middle; genital organs projecting, fuscous. Legs stout; the femora and hind tibiæ thickened; the coxæ and tarsi of a lighter tint than the femora and tibiæ.

Obs. It is possible that what I have called "flavo-rufo" may be a pure yellow (which is nearly the colour of the line on the pronotum), the reddish tint being discoloration, perhaps caused by cyanide of potassium.

3. *Exochus tricarinatus*.

Exochus tricarinatus, Cresson, Trans. Am. Ent. Soc. 1868, p. 38 (♂); Proc. Acad. Phil. 1873, p. 392¹.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

4. *Exochus pulchripes*.

Exochus pulchripes, Cresson, Trans. Am. Ent. Soc. 1868, p. 38 (♂)¹; Proc. Acad. Phil. 1873, p. 393².

Hab. MEXICO, Hacienda del Potrero, near Cordova¹, Orizaba² (*Sumichrast*).

5. *Exochus melanocephalus*.

Rufo-testaceous, capite abdominisque apice nigris; facie oreque rufis; alis hyalinis, nervis nigris. ♂.
Long. 6 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ moderately stout; blackish, testaceous at the basal fourth; basal joint of the scape cylindrical, stout, scarcely one half longer than thick; first joint of the flagellum nearly double the length of the fourth. Face finely punctured; vertex shining; a sharp keel runs down from the ocelli to the antennæ, the space on each side of it being slightly excavated. Thorax shining; metanotum slightly aciculate; two keels run down its sides; beyond what is enclosed by these two keels there are no areæ. Abdomen shining, impunctate, thickened towards the apex; the ventral surface pallid testaceous. Legs (especially the femora) stout, pallid testaceous at the base; the tarsi paler in tint than the tibiæ, their apices fuscous. Areolet angled on the lower side where the recurrent nervure is received beyond the middle.

B. *Areolet present*.

6. *Exochus cæruleiventris*.

Exochus cæruleiventris, Cresson, Trans. Am. Ent. Soc. 1868, p. 38 (♂)¹; Proc. Acad. Phil. 1873, p. 392².

Hab. MEXICO, Hacienda del Potrero, near Cordova¹, Orizaba² (*Sumichrast*).

BASSUS.

Bassus, Fabricius, Syst. Piez. p. 93.

This genus is numerously represented in the Palæarctic and, to a less extent, in the Nearctic Region. In our country it has only been met with in the mountains of North Mexico, where the fauna is of a more mixed nature than further south, *i. e.* there is a considerable mixture of northern species.

1. ***Bassus frontalis***. (Tab. XI. fig. 8.)

Bassus frontalis, Cresson, Trans. Am. Ent. Soc. 1868, p. 111 (♀)¹.

Hab. NORTH AMERICA, United States¹.—MEXICO, Milpas 5900 feet (*Forrer*).

The Mexican specimen is a male, and it does not materially differ in coloration from the female.

MESOLEPTUS.

Mesoleptus, Gravenhorst, Ichn. Europ. ii. p. 3; Cresson, Trans. Am. Ent. Soc. ii. p. 33 (1868).

An extensive genus of wide distribution.

1. ***Mesoleptus calidus***.

Mesoleptus calidus, Cresson, Trans. Am. Ent. Soc. 1868, p. 33 (♂)¹; Proc. Acad. Phil. 1873, p. 390.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

2. ***Mesoleptus melleus***.

Mesoleptus melleus, Cresson, Trans. Am. Ent. Soc. 1868, p. 34 (♂)¹; Proc. Acad. Phil. 1873, p. 390.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

3. ***Mesoleptus aztecus***.

Mesoleptus aztecus, Cresson, Proc. Acad. Phil. 1873, p. 390 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

4. ***Mesoleptus mexicanus***. (Tab. XI. fig. 22.)

Flavus; flagello antennarum, mesonoto (lineis 2 flavis exceptis) abdominisque apice late, nigris; alis flavo-hyalinis, stigmatibus testaceo. ♂.

Long. 15 millim.

Hab. MEXICO (*Sallé*).

Antennæ filiform, longer than the body. Face closely, the clypeus scarcely, punctured; face sharply projecting below the antennæ; tips of the mandibles, the head behind (except the orbits), and the vertex, black. Thorax closely punctured, the punctures running into striations on the pleuræ. Metanotum without any carinæ (except a transverse one at the apex), with an almost gradual slope from the base to

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the apex; the sides there depressed. Abdomen closely punctured, scarcely so strongly as the thorax; there is an obscure black mark on the apex of the first segment; the second and third segments are black along the sides; the fourth at the apical half and the remaining segments black. The abdomen is long and slender, the first segment flattish above, the apical one nearly cylindrical; in the middle it is testaceous. Legs long, slender; the hinder pair fulvous, the anterior pair yellowish; tips of the tarsi blackish. Areolet large, the lateral nervures a little curved and united above; below it is but very slightly angled where the recurrent nervure is received not far from the base.

The eyes are large, and reach nearly to the base of the mandibles; the cheeks do not project much. The metanotum is fulvous; the yellow colour runs more or less into fulvous all over the body.

A specimen from Orizaba (*Bilimek*) has the abdomen black with the segments yellow at the base and apex, the metanotum blackish in the middle at the apex, and the whole body and legs of a much more decided fulvous tinge. It appears to be an aberration of *M. mexicanus*.

5. *Mesoleptus bardus*.

Mesoleptus bardus, Cresson, Trans. Am. Ent. Soc. 1868, p. 34 (♂)¹.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

6. *Mesoleptus imbecillis*.

Mesoleptus imbecillis, Cresson, Trans. Am. Ent. Soc. 1868, p. 34 (♂)¹.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

7. *Mesoleptus emaceratus*.

Mesoleptus emaceratus, Cresson, Trans. Am. Ent. Soc. 1868, p. 35 (♂)¹.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

8. *Mesoleptus decorosus*.

Mesoleptus decorosus, Cresson, Trans. Am. Ent. Soc. 1868, p. 35 (♂)¹.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

9. *Mesoleptus alpestris*. (Tab. XI. fig. 24.)

Niger; ore, palpis, facie, orbitis, linea pronoti, pleuris, sterno, lineis 2 mesonoti, scutello coxisque, flavis; pedibus fulvis; alis hyalinis, stigmatibus testaceo. ♂.

Long. 13 millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

Antennæ stoutish, the middle joints produced at the apices; in length as long as the body. Head closely punctured, projecting in the centre in front, the cheeks not

buccate; clypeus rounded at the apex, its foveæ deep. Thorax closely and finely punctured all over; metanotum without keels. Prosternum, the edge of the pronotum in front, a line above, the tegulæ, two narrow lines on the mesonotum reaching to the pronotum, the scutellum, the lower half of the mesopleuræ, the sternum, and a large, somewhat triangular, mark on the metapleuræ above the coxæ, yellow. Abdomen longish, cylindrical at the apex; black, the base and apex of the segments fulvous; closely punctured, the apex but slightly. Legs longish, moderately stout, the coxæ finely punctured. Areolet 5-angled; lateral nervures converging, but not uniting above; the recurrent nervure received slightly beyond the middle.

10. **Mesoleptus persimilis.** (Tab. XI. fig. 25.)

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

Very similar to *M. alpestris*, but smaller; the wings of a much more decided yellowish hue, the areolet narrower, the lateral nervures united at the top; the yellow on the mesopleura narrower; there is only a narrow oblique line on the metapleura, the hind coxæ are entirely black, except at the apex, and an oval mark at the base on the outer side.

11. **Mesoleptus guatemalensis.**

Niger; ore, facie, orbitis, linea pronoti, tegulis, maculis 2 pleuralibus, scutello laterali maculaque metanoti, flavis; abdominis medio testaceo; pedibus flavis; coxis posticis nigris, femoribus tibiisque (basi excepta) posticis nigro-fuscis; alis flavo-hyalinis, apice fumato, stigmatè testaceo. ♂.

Long. 13 millim.

Hab. GUATEMALA, Purula in Vera Paz (*Champion*).

Antennæ as long as the body; inclining to fuscous on the under side, especially towards the apex; densely covered with a blackish pile; third joint as long as the fourth and fifth together; the last joint as long as the preceding two together; there are forty-eight joints in all. Head punctured, covered with longish fuscous hair; face broadly projecting in the middle; clypeus also projecting, clearly separated, the apex rounded; ocelli placed on the top of the head, the front ocellus placed not much before the two posterior ones; immediately behind these latter the head bends in towards the front ocellus (the edges of this indentation have an indistinct border, and it does not reach to the bottom of the head); above the antennæ the front is deeply excavated, and (immediately above each antenna) a somewhat triangular plate-like tubercle proceeds from the eye, extending backwards to the back of the excavated part. Thorax densely pilose, closely punctured all over (except the mesopleuræ); a broad horizontal line on the side of the pronotum, a mark above this on the mesonotum, the tegulæ, the tubercle below them, a mark on the mesopleuræ (narrowed on the lower side behind), a smaller mark beneath the hind wings, the sides and the extreme apex of the scutellum,

the postscutellum, a small mark on either side of the metanotum above, and a large mark (dilated on either side at the apex along the transverse keel), yellow. Metathorax more strongly punctured than the mesothorax; the metanotum almost rugosely punctured, with an arcuate transverse keel at the apex; metathoracic spiracles oblique, oval. Abdomen densely pilose, the pile longest at the apex, which is compressed laterally; petiole of nearly equal width throughout, depressed in the centre above, with a somewhat triangular tubercle on the lower side at the basal third; the minute lateral tubercles placed immediately above this; spiracles round; first and second segments pale testaceous, the first broadly black in the middle, the second black along the sides above; third segment black along the sides; the apex of the fourth, and the remaining segments entirely, black; cerci testaceous. Legs pilose; middle coxæ blackish before and behind, the sides yellowish; tips of the tarsi fuscous. Areolet oblique, triangular, but slightly angled where the recurrent nervure is received towards the apical fourth; longly pedunculated.

12. *Mesoleptus* (?) *bucephalus*.

Mesoleptus (?) *bucephalus*, Cresson, Trans. Am. Ent. Soc. 1868, p. 36 (♂)¹.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

13. *Mesoleptus* (?) *anguina*.

Mesoleptus (?) *anguina*, Cresson, Proc. Acad. Phil. 1873, p. 391 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

MESOLEIUS.

Mesoleius, Holmgren, Sv. Ak. Handl. 1854, p. 62.

The species I have included in this genus agree better with the characters of *Mesoleius* than of *Tryphon*. They, however, are scarcely typical, and might be included in *Tryphon* if the metathoracic areae were not completely obsolete, *Tryphon* having, at least, some of them present.

1. *Mesoleius costaricensis*.

Niger; annulo antennarum, clypeo, facie laterali, orbitis anticis, linea prothoracis, tegulis, scutello, postscutello, metanotique apice læte, flavis; pedibus testaceis; tibiis tarsisque flavis; basi coxarum, femoribus posticis supra tibiis posticarum dimidio apicali, nigris; alis fere fumatis, stigmatibus testaceo. ♂.

Long. 10 millim.

Hab. COSTA RICA, Cache (*Rogers*).

Closely punctured all over, covered with close pale pubescence, which is longest on the pleuræ and breast. Antennæ covered with microscopic pile; third joint as long as the succeeding two together. Face scarcely projecting in the middle; the orbits in front, the face (except a black line down its centre, this black line being prolonged

along the top of the clypeus to the base of the mandibles), the clypeus, and the mandibles (except at the apex), black; labrum and palpi testaceous; clypeus slightly projecting, transverse at the apex. The pronotum in front, a mark on either side of the mesonotum in front (close to the pronotum), the scutellum, the postscutellum, the apical half of the metanotum, the tegulæ, and the tubercles beneath them, yellow. Abdomen not much longer than the head and thorax together; petiole considerably longer than the second segment (being nearly as long as the following two segments together), faintly punctured, black, the apex and sides yellow; the second, third, and fourth segments black, yellow at the apex; the apical segments obscure testaceous-yellow, more or less blackish. The anterior legs incline to yellowish, the four posterior femora have a more decided testaceous hue; hind coxæ marked with testaceous, running into fulvous and yellow, the base black. Areolet broad; the lateral nervures curved, united above; below, the recurrent nervure is received a little before the middle; stigma blackish at the top, testaceous on the lower side.

2. *Mesoleius zapotecus*.

Flavo-testaceus; vertice, medio pronoti, mesonoto, maculisque 2 metanoti, nigris; facie, annulo antennarum, orbitis tarsisque, flavis; alis fere hyalinis, stigmatibus testaceo. ♀.

Long. 11 millim.; terebra fere 1 millim.

Hab. MEXICO (*Bilimek*).

Antennæ stout, nearly as long as the thorax and abdomen together; brownish-black above, the yellow ring broad; the scape yellowish, black above; the third joint more than double the length of the fourth. Head yellow (except a broad black band in the centre above the antennæ, extending posteriorly, and a smaller one below the antennæ, not reaching to the centre of the face), obsoletely punctured; the face projecting (but not largely) in the centre; the clypeus projecting, limited behind by a deep depression. Thorax yellow, the centre of the pronotum, a line proceeding from a little behind the tegulæ under the fore wings down the side of the suture and bounding the mesopleura in front, and the mesonotum (except two triangular yellow marks in front close to the pronotum), black; scutellum yellow; metanotum yellow, a black mark (dilated at the apex, and on each side at the base) and a smaller, more triangular, one at the apex in the middle; mesonotum opaque, finely punctured; metathorax more strongly punctured. Petiole broad, becoming gradually broader towards the apex, more than twice as long as broad; the sides furrowed (the lower side of the furrow bounded by a sharp keel); finely punctured; a broad transverse mark in the centre, the apex triangularly incised. The other segments are yellow, banded with broad fuscous-black bands at the base; these bands, however, becoming much narrower towards the apex, which is entirely yellow. The sheath of the ovipositor broad, testaceous, projecting. Wings hyaline, suffused with a smoky tinge; the nervures testaceous; areolet triangular above, the lower side projecting, angled. Legs longish; the tips of the tarsi fuscous.

3. **Mesoleius montezuma.** (Tab. XII. fig. 4.)

Niger; ore, facie et orbitis proparte, tegulis, scutello, pedibus anterioribus, abdominis segmentis basi ventreque, flavis; alis hyalinis, nervis nigris. ♂.

Long. 8 millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

Shining, impunctate, covered with a short, sparse pile. Antennæ long, slender, nearly one fourth longer than the body. The mouth, the mandibles (except at the apices, which are piceous), the inner orbits of the eyes broadly, a large mark in the centre of the face, the tegulæ, the scutellum, the postscutellum, the four anterior legs (except the bases of the coxæ and the tips of the tarsal joints), the greater part of the hind femora and tibiæ beneath, the tibial spurs at the base, the basal segments of the abdomen broadly, the other segments narrowly at the base, and the ventral surface, yellow, tinged slightly with fulvous. Hind legs longish (the tarsi considerably longer than the tibiæ), rather stout, the apical part of the claw bare. Head a little broader than the mesothorax; eyes large; the face not buccate, the clypeus slightly and broadly incised. Scutellum slightly convex. Metathorax without keels, having a gradual slope; the sides slightly aciculated and pilose. Abdomen not much longer than the head and thorax together, becoming gradually thicker towards the apex; petiole narrowed at the base, becoming gradually wider towards the apex. Wings a little shorter than the body, without an areolet.

TRYPHON.

Tryphon, Fallén, Specim. novam Hym. (1813); Holmgren, Sv. Ak. Handl. 1855, p. 185.

A very extensive genus. The species of this group are not clearly defined generically; and it is doubtful if many of the American species placed in *Tryphon* really belong to that genus as limited by Holmgren. The *Tryphon mexicanus* of Cresson certainly cannot, as it has the claws pectinate.

i. *Claws pectinate* [POLYBLASTUS?].

1. **Tryphon mexicanus.**

Tryphon mexicanus, Cresson, Proc. Acad. Phil. 1873, p. 391 (♂)¹.

Hab. MEXICO, Mirador¹ (*Dr. Sartorius*).

ii. *Claws simple.*

2. **Tryphon montezuma.** (Tab. XII. fig. 2.)

Niger; mandibulis, femoribus anterioribus abdomineque (basi excepta) rufis; palpis, tibiis tarsisque anterioribus, flavis; alis fuscis, nervis nigris. ♂.

Long. 7 millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

Antennæ nearly as long as the body, covered with microscopic pile; third joint more than one half longer than the fourth. Head covered with pale pubescence, aciculated, the face coarsely blistered; clypeus not separated, without foveæ; eyes longish, oblong, reaching to the base of the mandibles. Thorax finely punctured, covered with a close pile; scutellum raised, shining, the sides keeled. Metathorax with eight areæ; the upper median area longish, slightly dilated a little beyond the middle, narrowed towards the apex; covered with rather long grey hair; spiracles small, round. Petiole slightly thickened towards the apex, keeled along the sides, the tubercles longish; the postpetiole a little narrowed in the middle. Legs moderately stout; coxæ, the base of the hind trochanters, the hind femora (except the base and apex), and the hind tibiæ and tarsi (except at the base and apex), black. Areolet irregular, shortly petiolated, longer than broad; the nervures thick.

3. *Tryphon croceiventris*.

Tryphon croceiventris, Cresson, Trans. Am. Ent. Soc. 1868, p. 36 (♂)¹.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

4. *Tryphon* (?) *maculipennis*.

Tryphon (?) *maculipennis*, Cresson, Proc. Acad. Phil. 1873, p. 392 (♂ ♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

5. *Tryphon* (?) *laticinctus*.

Tryphon (?) *laticinctus*, Cresson, Trans. Am. Ent. Soc. 1868, p. 36 (♀)¹; Proc. Acad. Phil. 1873, p. 392.

Hab. MEXICO, Hacienda del Potrero, near Cordova¹ (*Sumichrast*).

POLYBLASTUS.

Polyblastus, Hartig, Wiegmann's Archiv, 1837, p. 155.

It is exceedingly doubtful if the species here described as a *Polyblastus* really belongs to that genus; the discovery of more specimens (I have only a mutilated male) will, I believe, show that it should be made the type of a new genus.

1. *Polyblastus* (?) *aztecus*. (Tab. XII. fig. 3, ♂.)

Niger; ore, facie, orbitis, linea pronoti, macula mesoscutelli, postscutello, maculisque 2 metanoti, flavis; abdomine rufo, basi nigro; pedibus anterioribus flavis, posticis nigris; femoribus subtus basique tiliarum læte, rufo-fulvis; alis hyalinis, nervis nigris. ♂.

Long. 10 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ covered (except the scape) with a microscopic pile; thick (the apex is now broken off, but, if my memory serves me correctly, it was much stouter than the base),

the joints produced at the base and apex on the lower side. Head broad; not developed much behind the eyes, which are large and margined; the front slightly hollowed above the antennæ, the face projecting beyond it, especially in the middle; clypeus almost transverse, clearly defined behind by a furrow; face strongly, the vertex and front more finely, punctured. Thorax shining, bearing clearly separated punctures; scutellum obsolete, the pleuræ and metathorax strongly, punctured. Scutellum broader than long, becoming narrower towards the apex; flattish, but raised in the centre. The metanotum has eight areæ, and is hollowed in the centre; there are two large yellow marks on each side of the hinder median area, and a small one close to the stigma; the sides and apex covered with white hair. The petiole becomes gradually thickened towards the apex; the sides are keeled and the centre raised, the raised part bounded by a not very distinct furrow; the gastroceli at the base of the second segment are curved, moderately wide and deep, and finely punctured. The abdominal segments are clearly separated; strongly punctured, and covered (especially laterally and at the apex) with white hair. Legs stout; hind coxæ large, thick, hollowed posteriorly. The four anterior legs are fulvous; the hind coxæ reddish, black at the base beneath; the trochanters are black at the base; the femora are mostly reddish beneath, and the hind tibiæ are red, broadly black at the apex. Wings short; the areolet oblique, the lateral nervures converging towards the top, the lower part produced into an angle which receives the recurrent nervure close to the middle.

Subfam. OPHIONINÆ.

Although this subfamily contains some of the most conspicuous species of Ichneumonidæ, yet the number of species hitherto found in our region is comparatively small.

THYREODON.

Thyreodon, Brullé, Hist. Nat. Ins. Hymén. iv. p. 150.

Species of this genus have been recorded from Asia, but I believe it will be found that *Thyreodon* is strictly a New World genus.

1. *Thyreodon niger*. (Tab. XII. fig. 12 *.)

Thyreodon niger, Cresson, Proc. Acad. Phil. 1873, p. 375 (♂ ♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*); GUATEMALA, Cubilguitz in Vera Paz (*Champion*).

2. *Thyreodon erythroceræ*. (Tab. XII. fig. 13.)

Hab. MEXICO, Valladolid in Yucatan (*Gaumer*).

This species has the deep black body, wings, and reddish antennæ (black at the base

* The name of the genus is erroneously given as "*Thyredon*" on the Plate.

and apex) of *T. morio*, Fabr., and *T. gracilis*, Cresson, but it is probably distinct from either. The face is deeply punctured, the hollow over the antennæ bears some large, curved, transverse striations; the vertex is almost impunctate; the eyes are distinctly margined; the fovea at the side of the clypeus is longish and deep; the mandibles and palpi are covered with long brownish hair; the head is closely covered with black hair. The upper side of the thorax is opaque; the mesopleuræ impunctate and shining; the mesonotum is closely and distinctly punctured all over, the inner sides of the furrows rugose and raised; the scutellum is shining, and punctured, but not closely; the keels in front of the scutellum are coarsely striated, the hollows behind it being also strongly striated; the metathorax is opaque, depressed at the base, bulging out somewhat at the sides, hollowed in the centre behind, the hollow widest at the apex; the mesonotum is very closely and transversely, the pleuræ more strongly and longitudinally, striated.

Length 32 millim.

T. grandis, Cresson, differs from this species in having the mesothorax "very minutely and indistinctly punctured," the furrows on the mesonotum having a carina down the middle, and in the scutellum being densely punctured. In *T. erythroceræ* the body is deep black, without either blue or green tints; the anterior femora inclining to piceous in tint. The specific distinctions between *T. grandis*, Cresson, *T. cyaneus*, Brullé, and *T. erythroceræ* can only be satisfactorily made out by an examination of typical specimens.

3. *Thyreodon morosus*.

Thyreodon morosus, F. Smith, Descr. of New Species of Hymen. p. 230 (♀)¹.

Hab. COSTA RICA, Cache (*Rogers*¹).

This species is readily known from *T. erythroceræ* &c. by the antennæ being whitish yellow, not fulvous; by the face being more strongly punctured, and with the two longitudinal furrows much more distinct; and by the scutellum being more gibbous and strongly punctured.

4. *Thyreodon maculipennis*.

Thyreodon maculipennis, Cresson, Proc. Acad. Phil. 1873, p. 375 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova (*Sumichrast*¹).

5. *Thyreodon laticinctus*. (Tab. XII. fig. 14.)

Thyreodon laticinctus, Cresson, Proc. Acad. Phil. 1873, p. 376 (♀)¹.

Thyreodon principalis, F. Smith, Descr. of New Species of Hymen. p. 230 (♀)².

Hab. MEXICO, Orizaba (*Sumichrast*¹); GUATEMALA, Zapote, Senahu (*Champion*); COSTA RICA, Irazu, Cache (*Rogers*²).

Apparently a common and widely distributed species.

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6. **Thyreodon ornatipennis.**

Thyreodon ornatipennis, Cresson, Proc. Acad. Phil. 1873, p. 376 (♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*¹).

7. **Thyreodon rufithorax.** (Tab. XII. fig. 15, ♀.)

Ferrugineus; vertice, flagello antennarum, abdomine, pedibus posticis tarsisque intermediis, nigris; alis hyalinis, fusco fasciatis. ♀.

Long. 33 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).

Face rugose, the clypeus punctured; mesothorax and scutellum finely punctured, the mesopleuræ finely striated; metanotum with two irregular keels, united by cross ones, going down the centre; there is an equally strong keel down the side, united to the central keels by six strong transverse ones; metapleuræ with indistinct, rather widely separated, keels. Abdomen of the usual shape and with a steel-blue tinge. The base and apex of the wings are smoky; the apical three fourths of the radial cellule and a band along the basal nervure being deep black.

OPHION.

Ophion, Fabricius, Ent. Syst. Supp. p. 210.

A genus of wide distribution over the globe. The very uniform coloration of the species, and the slight structural variations which they show, render their identification very difficult. *Ophion* is divisible into two groups:—

1. *With horny points in the fore wings.*

Eniscopilus, Stephens, Ill. Brit. Ent. Mand. vii. p. 126 (1835).

In the same species of this group the inner (and smaller, when present) spot tends to become obsolete; and in some species of true *Ophion*, e. g. *O. curvinervis*, the spots might almost be said to be present, although transparent. I am not at all sure if the shape of the outer horny point can be depended upon as an aid to specific distinction; it seems to me to vary considerably.

A. *First cubital cellule with two horny points.*a. *Stigma yellow or fulvous.*1. **Ophion (Eniscopilus) mexicanus.** (Tab. XII. fig. 23.)

Ophion mexicanus, Cresson, Proc. Acad. Phil. 1873, p. 374 (♀)¹.

Hab. MEXICO, Cordova (*Sumichrast*¹); GUATEMALA, San Gerónimo (*Champion*).

This species may be known from the following by the black antennæ and by the long

and narrow first discoidal cellule. The two horny points in the fore wings are distinct, as is also the line running from the triangular point. In the examples from Guatemala the apical half of the abdomen is fuscous.

2. **Ophion (Eniscopilus) concolor.** (Tab. XII. fig. 24.)

Ophion concolor, Cresson, Proc. Ent. Soc. Phil. 1865, p. 56¹.

Hab. GUATEMALA, San Gerónimo (*Champion*).—ANTILLES, Cuba¹.

I am not quite certain about the Guatemalan examples being conspecific with *O. concolor*; but on the whole they agree fairly well with the description. In two specimens the outer horny point is rather large, in another it is obsolete.

3. **Ophion (Eniscopilus) thoracicus.**

Ophion thoracicus, Cresson, Proc. Ent. Soc. Phil. 1865, p. 55¹; Proc. Acad. Phil. 1873, p. 374².

Hab. MEXICO, Cordova (*Sumichrast*²).—ANTILLES, Cuba¹.

4. **Ophion (Eniscopilus) flavo-scutellatus.** (*Ophion thoracicus*, Tab. XII. fig. 25.)

Ophion flavo-scutellatus, Brullé, Hist. Nat. Ins. Hymén. iv. p. 140¹.

Hab. GUATEMALA, Cerro Zunil 4000 to 5000 feet (*Champion*); COSTA RICA, Irazu 6000 to 7000 feet (*Rogers*).

This insect usually has a broad fuscous band on the metanotum; sometimes, however, the fuscous colour is almost obliterated. It varies in size about 3 millim. The usual form of the outer horny point is rather long and conical at either end; sometimes irregular at the ends; and in one specimen it is very small. A well-marked feature of this species is the clearly-defined keel down the centre of the metanotum.

5. **Ophion (Eniscopilus) fuscicornis.**

Hab. GUATEMALA, San Gerónimo (*Champion*).

Similar in coloration to *O. flavo-scutellatus*, except that the mesonotum is marked with dark fulvous, not fuscous; differing otherwise in being smaller, in there being a distinct longish tubercle below the antennæ, in the metanotum being smooth and impunctate and with the transverse keel rather indistinct, and the antennæ dark fuscous, almost black. The head and pleuræ are yellowish; the metanotum behind the transverse keel is scarcely wrinkled.

6. **Ophion (Eniscopilus) flavus.** (Tab. XII. fig. 21.)

Ichneumon flavus, Fabr. Ent. Syst. ii. p. 179.

Ophion flavus, Fabr. Ent. Syst. ii. Supp. p. 236; Cresson, Proc. Ent. Soc. Phil. 1865, p. 57¹; Proc. Acad. Phil. 1873, p. p. 374².

Hab. MEXICO, Cordova (*Sumichrast*²); NICARAGUA, Chontales (*Janson*).—ANTILLES, Cuba¹.

b. *Stigma black.*

7. **Ophion (Eniscopilus) monticola.** (Tab. XII. fig. 28.)

Luteus; orbitis facieque flavis; antennis, vertice abdominisque segmentis 3^o–8^{um}, nigris; alis hyalinis, nervis stigmatique nigris. ♀.

Long. 22–23 millim.

Hab. GUATEMALA, Las Mercedes 3000 feet, San Isidro 1600 feet (*Champion*).

Antennæ longer than the body, closely pilose. Head impunctate. Mesonotum tinged with black in the centre, shining, impunctate. Scutellum longish, narrowed towards the apex, the sides keeled, the back irregularly longitudinally striated. Metanotum with a transverse keel towards the basal half, behind which it is smooth; in front of it coarsely reticulated and bearing in the centre keels, which are straight at the base and then diverge towards the sides. The two basal segments of the abdomen are subequal; the first becoming gradually thickened towards the apex.

8. **Ophion (Eniscopilus) maculipennis.** (Tab. XII. fig. 29.)

Flavus, maculis 3 mesonoti, sternoque nigris; alis hyalinis, fascia substigmatali fusca. ♀.

Long. 18 millim.

Hab. PANAMA, Bugaba (*Champion*).

Antennæ longer than the body, yellow, fuscous towards the apex. Head impunctate, shining. Mesonotum finely and closely punctured. Scutellum more strongly punctured, strongly keeled down the sides. Metanotum behind the transverse line finely punctured; in front of it coarsely transversely rugose; mesopleuræ closely punctured. The pro-, meso-, and metasternums are black; the black on the mesosternum extends halfway up the mesopleuræ, and is continued in the middle as an oblique band to the hind wings. There is a black mark on the underside of the middle coxæ, a larger one on the hinder coxæ, and the apical half of the petiole is more or less black; the third and following segments incline to fuscous above. The stigma is black, except at the base and apex, where it is yellow; the costa is yellow; the other nervures black; the anterior horny point is distinct, about one half longer than broad, and obliquely truncated at the apex. The legs are clear pallid yellow.

A distinct and well-marked species.

B. *First cubital cellule with only one horny point.*9. **Ophion (Eniscopilus) guatemalensis.** (Tab. XII. fig. 22.)

Pallide flavus, alis hyalinis, stigmatè pallide flavo. ♀.

Long. 18 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

In its unicolorous body this species agrees with *O. concolor*, but it is much smaller, and the colour is more diluted in tint. Otherwise it differs in the metanotum being much less strongly wrinkled, while there is no keel down its middle; the scutellum is, if anything, more gibbous, not so much narrowed behind, scarcely keeled at the sides, and not punctured, but faintly striated at the apex; the inner discoidal cellule is not so much dilated at the apical half (see figures), and in the first cubital cellule only the pear-shaped horny point is present, it being also broader and shorter. *O. flavus* may be known from *O. guatemalensis* by the deeper fulvous tint of the body; by the middle of the vertex being black; the apex of the abdomen fuscous or black; by the mesonotum being punctured, the metanotum much more strongly wrinkled; while the form of the horny point in the fore wings is different, it being much more strongly pointed at the apex.

2. *No horny points in the fore wings (Ophion, sensu str.).*A. *Inner discoidal cellule elongated, more than three times longer than wide; first recurrent nervure without a branch.*10. **Ophion curvinervis.** (Tab. XII. fig. 19.)

Luteus; capite, pleuris scutelloque, flavis; alis hyalinis, stigmatè luteo; antennis nigro-brunneis. ♀.

Long. 29-31 millim.

Hab. GUATEMALA, Las Mercedes 3000 feet, Senahu (*Champion*).

Antennæ as long as, if not longer than, the body; black, the flagellum more or less brownish on the lower side, the scape sometimes luteous beneath. Head shining, obscurely punctured, not much projecting in the middle; clypeal foveæ deep, longish. Thorax covered with close pale pubescence. Mesonotum very minutely punctured, the pleuræ finely longitudinally striated. Scutellum carinate along the sides. Metanotum with one transverse keel near the base; the base behind it finely rugose; the rest of the surface finely rugose, and bearing arcuate keels. Metapleuræ finely rugose. Petiole shining, glabrous, slightly hollowed in the centre above at the base; postpetiole clearly separated from, and distinctly thicker than, the petiole, densely covered with a white pubescence; the petiole itself is narrowed at the apex; together they are nearly as long as the second segment, which is dilated at the apex. The ~~transverse~~ radial nervure is curved upwards in the middle on the basal division, the apical portion having a

gradual curve from the base to the apex, the extreme apex curved upwards; the angle formed at the apex of the first cubital cellule shorter on the upper than on the lower side.

11. *Ophion chiriquensis*. (Tab. XII. fig. 20.)

Luteus, capite, scutello pleurisque, flavis; alis hyalinis, stigmatate luteo. ♀.
Long. 23 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Smaller than *O. curvinervis*, and identical with it in sculpture (including the form of the metathorax), and in coloration, except that the antennæ are entirely luteous; differing from it otherwise in its smaller size, in the second abdominal segment being stouter and not so much compressed laterally compared to the first; in the basal division of the radial nervure not being curved upwards, and in the upper angles of the apex of the first cubital cellule being longer than the lower.

B. Inner discoidal cellule not much longer than high; scutellum not clearly keeled.

a. Inner discoidal cellule angled at the inner upper margin; the recurrent nervure emitting a branch; stigma luteous.

12. *Ophion flavo-orbitalis*. (Tab. XII. fig. 16.)

Luteus, orbitis scutelloque flavis; alis hyalinis, stigmatate luteo. ♀.
Long. 21-22 millim.

Hab. MEXICO, Cordova (*Höge*); PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).

Face broadly projecting, finely punctured. Thorax finely punctured; scutellum with the sides carinate; metanotum aciculate, with two sharp transverse keels, the space between them hollowed; a longitudinal keel on either side of these, and two keels run down the middle from the posterior transverse one, forming a longish area. First abdominal segment dilated at the apex, the dilation gradual from the middle; the sides keeled; second segment thicker, and distinctly shorter than the first.

13. *Ophion ancyloneura*. (Tab. XII. fig. 17.)

Flavus; antennis, abdomine, femoribus tibiisque, luteis; alis hyalinis, stigmatate testaceo. ♀.
Long. 17 millim.

Hab. GUATEMALA, Capetillo (*Champion*).

Antennæ a little longer than the body, pilose; third joint shorter than the fourth and fifth together. Head closely punctured; clypeal foveæ large, deep, longer than broad; face broadly projecting in the middle; a longish tubercle below the antennæ; tips of the mandibles piceous-black. Thorax almost impunctate, shining; mesonotum with

three obscure fuscous stripes, the sutures very shallow; metanotum with two distinct transverse keels, united in the centre by two longitudinal ones, which form a longish area; from the apical transverse keel run some not very clearly defined keels to the apex (except the central two, which form an area, narrower towards the apex, in front of the above-mentioned area between the two transverse keels). Petiole inclining to yellowish, indistinctly keeled; postpetiole thicker than, and clearly defined from, the petiole, luteous, and finely and closely punctured. The other segments are densely pilose, the apical one more darkly coloured. Smaller than *O. flavo-orbitalis*; the head and thorax almost entirely yellow; the third joint of the antennæ longer; the first abdominal segment longer and narrower; the postpetiole longer in proportion to the petiole; the second segment contracted before the middle (in addition to the contraction at the base); the first discoidal cellule distinctly angled in the middle above, the bulla received quite close to the middle, the projecting branch reaching nearly halfway across.

b. *Inner discoidal cellule not angled; the recurrent nervure not emitting a branch; stigma black.*

14. **Ophion melanostigma.** (Tab. XII. fig. 18.)

Luteus, orbitis thoraceque flavis; antennis nigris; alis hyalinis, stigmatate nervisque nigris. ♂.
Long. 23 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Head strongly punctured; a longish, clearly defined tubercle below the antennæ; antennal regions projecting, separated from the eyes by an oblique depression, which extends near to the inner side of each antenna; tips of the mandibles piceous-black. Antennæ longer than the body, densely pilose; third joint longer than the fourth and fifth together; the apical joints brownish. Thorax pilose, shining, impunctate; metanotum without keels. First discoidal cellule rounded at the upper inner corner, and without any branch; bulla received a little beyond the middle.

NOTOTRACHYS.

Trachynotus, Gravenhorst, Ichn. Europ. iii. p. 715 (1829) (nomen præoc.).

Nototrachys, Marshall, Trans. Ent. Soc. 1872, pp. 50 & 63.

A genus containing a few species, found in Europe and America.

1. **Nototrachys fuscatus.**

Trachynotus fuscatus, Cresson, Proc. Ent. Soc. Phil. 1865, p. 50 (♂ ♀)¹.

Nototrachys fuscatus, Cresson, Proc. Acad. Phil. 1873, p. 375².

Hab. MEXICO, Orizaba, Cordova (*Sumichrast*²).—ANTILLES, Cuba¹.

OPHIOPTERUS.

Ophiopterus, Brullé, Hist. Nat. Ins. Hymén. iv. p. 153 (1846).

A genus exclusively American, and containing few species.

1. *Ophiopterus fuscipes*.

Niger; facie, ore, orbitis, linea pronoti, tegulis, scutello abdominisque basi, flavis; pedibus fuscis, anticis pallidis; alis hyalinis, nervis nigris. ♀.

Long. 12 millim.

Hab. MEXICO, Orizaba (*Bilimek*).

Densely covered with a silvery-white pubescence, densest on the pleuræ. Head finely punctured; antennæ short, not much longer than the head and thorax together, the scape pale yellow beneath. Pronotum obliquely, the mesonotum transversely and very strongly, striated, the striations widely separated; a shining impunctate space below the hind wings on the mesopleuræ; the rest strongly longitudinally striated, running at the edges into reticulations; scutellum shining, nearly impunctate; metathorax coarsely reticulated, and having a gradual slope to the apex. Abdomen shining, impunctate, covered with a pale close pile; black, the sides from the third segment obscure rufous; sheath of the ovipositor black. Legs in greater part fuscous, covered with a pale pile; the femora inclining to rufous on the lower side; the fore legs almost entirely, and the middle pair in front, pallid testaceous.

2. *Ophiopterus niger*.

Niger; alis fere fuscis. ♂.

Long. 16 millim.

Hab. MEXICO, Hurchihuite (*Bilimek*).

Head semiopaque, covered with a depressed pile; a longitudinal keel running down from the ocelli, and from it short striations proceed on either side; thorax finely punctured, a smooth, shining, impunctate space beneath the wings; pronotum at the sides obliquely striated; mesopleuræ at the edges longitudinally striated; mesonotum in front of the scutellum reticulated; metathorax coarsely reticulated. Abdomen three times the length of the thorax, shining, impunctate; the three basal segments cylindrical, narrow, the second segment the longest.

3. *Ophiopterus ferrugineus*.

Ophiopterus ferrugineus, Cresson, Proc. Acad. Phil. 1873, p. 380 (♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*¹).

4. *Ophiopterus striatifrons*.

Niger; ore, orbitis late, tegulis, coxis anterioribus, abdominisque basi, flavis, pedibus rufis; alis brevibus, hyalinis, nervis nigris. ♀ et ♂.
Long. 9–10 millim.

Hab. MEXICO, Ciudad in Durango (*Forrer*).

Antennæ about half the length of the abdomen, microscopically pilose; fuscous towards the base of the flagellum, the basal joint of the scape yellow on the underside. Head black; the mouth, the mandibles, the palpi, the orbits (broadly on the inner, narrowly on the outer, side), and the face (except a triangular black mark), yellow; face and vertex finely punctured; the front transversely, and the head behind at the sides longitudinally and strongly, striated; an indistinct keel runs down from the ocelli, and another from each antenna down the face. Thorax black; a broad line on each side of the mesonotum in front close to the pronotum, the tegulæ, and the scutellum in the centre, yellow; mesonotum strongly transversely striated in front, punctured in the middle, aciculated behind; prothorax obliquely striated at the sides, except in the middle, which is shining and impunctate; pronotum roughly transversely striated; mesopleura (except below the wings) and sternum rugose; scutellum punctured, the lateral keels stout; metathorax coarsely reticulated. Abdomen twice the length of the head and thorax united; the greater part of the basal half yellow, segments 4 and 5 rufous. Legs reddish; the four anterior coxæ and trochanters yellow; the hind coxæ and trochanters black, yellow at their junction; the base of the hind femora and the apices of the tibiæ and tarsi black. In most of the specimens the hind femora and tibiæ incline to fuscous or black, perhaps owing to discoloration. The wings are not half the length of the abdomen.

AGATHOPHIONA.

Agathophiona, Westwood, Tijds. voor Ent. xxv. p. 19 (1882).

Agathophiona has the neurulation of *Ophion*, but differs from that genus in the form of the abdomen (which is much thicker and not so much compressed), and also in the greatly elongated labium.

Only one species is known.

1. *Agathophiona fulvicornis*. (Tab. XII. fig. 11.)

Agathophiona fulvicornis, Westw. loc. cit. p. 20, t. 4. figg. 5–13¹.

Hab. MEXICO, San Angel (*Coffin*¹), Chapultepec (*Bilimek*).

HETEROPELMA.

Heteropelma, Wesmæl, Bull. Acad. Brux. xvi. p. 120 (1849).

The only Central-American species which can be fairly regarded as a *Heteropelma*
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differs from the typical forms in having the recurrent nervure interstitial; but as our insect agrees in other respects, I think we must provisionally regard it as belonging to Wesmael's genus, which contains but few known species.

1. **Heteropelma sonorensis.** (Tab. XII. fig. 30.)

Niger; facie, orbitis, scutello, pedibus 4 anterioribus, pedibus posticis pro parte tegulisque, flavis; **antennis rufis.** ♀.

Long. 17 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ not much longer than the head and thorax united, stout, 33-jointed, covered with a depressed pile; the third joint not much shorter than the three following ones united. Head covered with longish white hair, strongly punctured, coarsely rugosely striated below the ocelli. Thorax covered with long white hair, which is especially long on the sides and breast, strongly punctured all over; metathorax rugose, reticulated in the middle and at the sides behind, where there are two not very distinct keels; the keels in front of the scutellum are acute and curved, and they are prolonged forwards along the tegulæ; scutellum raised, broader than long, narrowed behind. Abdomen about twice the length of the thorax; the first segment cylindrical, a little longer than the second, the latter dilated towards the apex; the first two segments, and the others on the top and the lower edge of the sides, are ferruginous, stained with black; there is a long black line on the second and on the fourth and fifth segments; the sides from the third segment, the ventral surface, and the sheaths of the ovipositor are yellow. The four anterior legs are entirely bright yellow; the posterior legs have the coxæ black; the basal joint of the trochanter, the femora, the apical third of the metatarsus, and the other tarsal joints dark rufous; the apical joint of the trochanters, the basal two thirds of the tibiæ, and the basal two thirds of the metatarsus, yellow; the apical third of the tibiæ, and a spot on the apex of the metatarsus, black. Wings smoky, with a violet tinge, the costa and stigma testaceous; the recurrent nervure is interstitial.

EXOCHILUM.

Exochilum, Wesmael, Bull. Acad. Brux. xvi. p. 121 (1849).

A genus containing but few species, and not yet found in America south of Mexico. It is also represented in Europe.

1. **Exochilum mundum.**

Ophion mundus, Say, Bost. Journ. Nat. Hist. i. p. 239 (♂)¹; Lec. Complete Writings of Thomas Say, ii. p. 695.

Exochilum mundum, Cresson, Proc. Acad. Phil. 1873, p. 375².

Campoplex flavipes, Brullé, Hist. Nat. Ins. Hymén. iv. p. 170.

Hab. NORTH AMERICA, United States¹.—MEXICO, Cordova².

RETANISIA.

Head as broad as the mesonotum, about one half broader than long. Clypeus almost transverse at the apex, but with the sides rounded; labrum small, rounded. Eyes not incised on the inner side. Parapsidal furrows deep and wide, reaching nearly to the scutellar fovea, which is wide and deep. Scutellum longer than broad, not much elevated, narrowed towards the apex, which is rounded; the sides are keeled. Metathorax gradually sloping to the apex, longish, with more or less distinct areæ. Abdomen not very much longer than the head and thorax united, becoming gradually dilated to the fifth segment. Hind legs very long; the coxæ longer than the trochanters, the tibiæ nearly as long as the coxæ, trochanters, and femora united; the tarsi a little shorter than the tibiæ; the hind tibiæ have two short, thick spurs, the anterior pair a longer and curved one. The metatarsus is scarcely twice the length of the next joint; and the basal joint of the anterior tarsi is curved at the base.

In this genus the first cubital cellule receives both the recurrent nervures, and therefore agrees with *Thyreodon*, *Ophion*, *Nototrachys*, *Ophiopterus*, and *Agathophiona*. From *Thyreodon* it may be known by the abdomen not being strongly compressed laterally, the much longer legs and antennæ, the eyes entire, and the claws not pectinated; from *Nototrachys* by the long antennæ and the shining mesonotum; from *Ophion* by the abdomen not being compressed, the eyes entire, and the non-pectinated claws; from *Ophiopterus* by the very long antennæ and legs and the dilated abdomen; and from *Agathophiona* by the normal length of the labium, the long antennæ, the much longer legs, and the much shorter, more dilated and thickened abdomen; and from all five by the very deep parapsidal furrows.

The antennæ in the male (the only sex known) are longer than the body; the joints contracted in the middle, dilated at the base and apex; the third joint about one fourth longer than the succeeding ones; towards the apex the joints become very slightly narrowed.

1. **Retanisia facialis.** (Tab. XII. fig. 10.)

Nigra; scapo antennarum subtus, facie, ore, orbitis, pedibus anterioribus pro parte apiceque tarsorum posteriorum, flavis; alis hyalinis, apice fumatis, nervis nigris. ♂.

Long. fere 15 millim.

Hab. GUATEMALA, Purula (*Champion*).

Head strongly punctured; a triangular projection below the antennæ, its centre almost carinated, the face transversely striated on either side of it; below the antennæ, the orbits broadly behind, the palpi, the clypeus (except at the extreme apex), and the labium, yellow. Thorax strongly punctured, shining; the scutellum scarcely so strongly punctured as the mesonotum; metanotum with seven areæ; the sides more or less reticulated. Abdomen shining, impunctate, the ventral surface in the middle obscure yellow. The

anterior legs in front and the tarsi are entirely yellow; the middle pair have the coxæ, the greater part of the trochanters, the femora (except at the base), and the apices of the tarsi, yellow; the apical four joints of the hind tarsi are also yellow. The head and thorax are covered with a close fuscous pile.

ANOMALON.

Anomalon, Jurine, *Nouv. Méthode de classer les Hymén. et les Diptères*, p. 114 (1807); Gravenhorst, *Ichn. Europ.* iii. p. 627.

1. *Anomalon mexicanum*.

Anomalon mexicanum, Cresson, *Proc. Acad. Phil.* 1873, p. 376 (♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*)¹.

2. *Anomalon vitticolle*.

Anomalon vitticolle, Cresson, *Proc. Acad. Phil.* 1873, p. 377 (♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*)¹.

3. *Anomalon magum*.

Anomalon magum, Cresson, *Proc. Acad. Phil.* 1873, p. 377 (♂ ♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

4. *Anomalon peritum*.

Anomalon peritum, Cresson, *Proc. Acad. Phil.* 1873, p. 377 (♀)¹.

Hab. MEXICO, Mirador¹ (*Dr. Sartorius*).

5. *Anomalon residuum*.

Anomalon residuum, Cresson, *Proc. Acad. Phil.* 1873, p. 378 (♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*)¹.

6. *Anomalon scelerosum*.

Anomalon scelerosum, Cresson, *Proc. Acad. Phil.* 1873, p. 378 (♂ ♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*)¹.

7. *Anomalon guatemalenum*. (Tab. XII. fig. 26.)

Ferrugineum; antennis nigris, tarsi flavis; alis fere fumatis. ♀.

Long. 23 millim.

Hab. GUATEMALA, Purula (*Champion*).

Antennæ thin, filiform, pilose, inclining to brownish on the lower side; about three fourths the length of the body. Head rugose, covered closely with a whitish pubescence.

Thorax similarly pubescent; mesonotum finely punctured; propleura obliquely, the mesonotum longitudinally, striated; scutellum rugose; metanotum coarsely reticulated; metapleuræ very coarsely rugose. First abdominal segment narrow, the apex dilated; second segment of nearly equal breadth throughout on the upperside, but dilated downwards at the apex, considerably longer than the basal segment, and black above; the apical segments darker. Coxæ punctured, covered with long glistening white hair; femora glabrous; tibiæ covered with a dark and close, the tarsi with a lighter, pile; anterior legs lighter in colour than the posterior ones, which latter have the tips of the tarsi and of the tibiæ inclining to blackish. Wings slightly smoky, the apex much darker; stigma black above, testaceous on the lower side; first recurrent nervure received a little below the middle; discoidal cellule more than twice the width at the apex than at the base.

8. *Anomalon fumipenne*.

Anomalon fumipenne, Cresson, Proc. Acad. Phil. 1873, p. 379 (♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*)¹.

9. *Anomalon agnatum*.

Anomalon agnatum, Cresson, Proc. Acad. Phil. 1873, p. 379 (♂)¹.

Hab. MEXICO, Mirador¹ (*Dr. Sartorius*).

10. *Anomalon* (?) *elegans*.

Anomalon (?) *elegans*, Cresson, Proc. Acad. Phil. 1873, p. 379 (♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*)¹.

11. *Anomalon quadrilineatum*.

Flavum; antennis, vertice, lineis 4 thoracis, abdomine supra, dimidio apicali tiliarum posticarum tarsisque posticis, nigris; abdomine pedibusque rufo-testaceis; alis hyalinis, nervis nigris.

Long. 16 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Antennæ about three fourths of the length of the body, slender, more thickened towards the base; scape yellowish beneath. Head thickish, impunctate, the vertex aciculate. Thorax shining; mesonotum with some scattered punctures; metanotum with a broad and deep furrow down its centre; three (the two lateral not reaching to the base of the lobes) broad lines on the mesonotum, the suture of the metathorax, and a line down the metanotum, black. Abdomen longish, strongly compressed; the first segment clear yellow at the base; ovipositor as long as the hind tibiæ. Hind femora with a keel on the underside, terminating in an indistinct tooth before the apex (very much as in *Eiphosoma*); hind tibiæ entirely black behind.

EIPHOSOMA.

Eiphosoma, Cresson, Proc. Ent. Soc. Phil. iv. p. 52, fig. 5 (1865); Proc. Acad. Phil. 1873, p. 380.

Cresson described this genus for the reception of four species from Cuba, later on adding two others from Mexico. *Eiphosoma* is allied to *Cremastus* and *Angitia*, Holmgren.

1. **Eiphosoma mexicanum.** (*Eiphosoma mexicanum*, Tab. XII. fig. 31.)

Eiphosoma mexicana, Cresson, Proc. Acad. Phil. 1873, p. 380 (♀)¹.

Hab. MEXICO, Cordova (*Sumichrast*)¹; GUATEMALA, San Gerónimo (*Champion*).

Apparently a not uncommon species. The extent of black on the legs, thorax, and abdomen varies. What appears to be a specimen of this species from Presidio, Mexico (*Forrer*), is only one half of the usual size.

2. **Eiphosoma vitticolle.**

Eiphosoma vitticollis, Cresson, Proc. Ent. Soc. Phil. 1865, p. 53 (♂ ♀)¹; Proc. Acad. Phil. 1873, p. 381².

Hab. MEXICO, Valladolid in Yucatan (*Gaumer*), Orizaba, Cordova (*Sumichrast*², *Bilimek*).—ANTILLES, Cuba¹.

As in the preceding species, the amount of black varies.

3. **Eiphosoma aztecum.**

Eiphosoma azteca, Cresson, Proc. Acad. Phil. 1873, p. 381 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova¹ (*Sumichrast*).

Allied to the Cuban *E. nigrovittatum*.

PANISCUS.

Paniscus, Schrank, Fauna Boica, ii. p. 311, nota (1802).

A genus extensively distributed over the globe, but not containing many species.

1. **Paniscus geminatus.** (Tab. XIII. fig. 5.)

? *Ophion chloris*, Oliv. Enc. Méth., Ins. viii. p. 509.

Ophion geminatus, Say, Contrib. Macl. Lyc. i. p. 76¹; Leconte, Complete Writings of Thomas Say, i. p. 379.

Paniscus rufus, Brullé, Hist. Nat. Ins. Hymén. iv. p. 155².

Paniscus geminatus, Norton, Proc. Ent. Soc. Phil. i. p. 364 (1863)³; Cresson, Proc. Acad. Phil. 1873, p. 382⁴.

Hab. NORTH AMERICA, United States^{1 3}.—MEXICO, Orizaba, Cordova (*Sumichrast*⁴); GUATEMALA, Totonicapam 8500 to 10,000 feet, Capetillo, San Gerónimo, Sinanja, Senahu (*Champion*); NICARAGUA, Chontales (*Belt*); COSTA RICA, Irazu, Cache (*Rogers*); PANAMA, Bugaba 800 to 1500 feet, Volcan de Chiriqui 2500 to 4000 feet.—SOUTH AMERICA²; WEST INDIES².

A common and widely distributed species. *P. geminatus* varies greatly in size; the flagellum of the antennæ varies in colour from black to rufous; the amount of yellow on the head varies also, and the apical segments of the abdomen are sometimes fuscous.

2. *Paniscus tinctipennis*.

Fuscus, testaceo variegatus; capite flavo; pedibus pallide testaceis, coxis posterioribus femoribusque posticis fuscis; alis fumatis, stigmatibus testaceo. ♀.

Long. 15 millim.

Hab. PANAMA, Volcan de Chiriqui 2000 to 3000 feet (*Champion*).

Antennæ a little longer than the body, microscopically pilose; the flagellum dark fuscous, the scape testaceous. Head yellow, the occiput dark fuscous; the ocellar region black; the face obscurely punctured, projecting in the middle; mandibles testaceous, the tips black; palpi yellow. Thorax dark fuscous; a line on the pronotum, the sutures of the mesonotum, a mark below the tegulæ, the sides of the scutellum, and the lower part of the metapleura, pale testaceous. Metathorax closely transversely striated. Abdomen fuscous, the base of the first three segments and their ventral surface pale testaceous. Wings with a fuscous tinge; areolet minute, not oblique; the recurrent nervure interstitial.

Differs from *P. geminatus* in the fuscous colour of the body, in the wings having a decided smoky tinge, in the expansions on each side of the metathorax being much more distinct, in the abdomen being broader and not so compressed, and in the petiole being thicker and shorter compared to the second segment.

3. *Paniscus melanostigma*.

Rufo-testaceus, mesonoto nigro; capite flavo; flagello antennarum fusco; alis hyalinis, stigmatibus nigro. ♀.

Long. 15 millim.

Hab. PANAMA, Volcan de Chiriqui (*Champion*).

Face closely punctured; metathorax closely transversely striated. Areolet moderately large, straight, the recurrent nervure received a little beyond the middle; there is no branch on the cubital nervure.

Easily known from its allies by the black stigma and nervures. The petiole is longer compared to the second segment (the relative length of the two being as in *P. geminatus*) than in *P. tinctipennis*.

CAMPOPLEX.

Campoplex, Gravenhorst, Ichn. Europ. iii. p. 453 (1829).

1. **Campoplex opimus.**

Campoplex opimus, Cresson, Proc. Acad. Phil. 1873, p. 382 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

2. **Campoplex tepanecus.** (Tab. XIII. fig. 1.)

Campoplex tepanecus, Cresson, Proc. Acad. Phil. 1873, p. 382 (♂ ♀)¹

Hab. MEXICO, Pinos Altos in Chihuahua (*Buchan-Hepburn*), Orizaba (*Sumichrast*¹), Cuernavaca (*Bilimek*); GUATEMALA, San Gerónimo (*Champion*).

A variable species in size and coloration.

3. **Campoplex guatemalensis.**

Rufo-fuscus; capite, antennis, coxis, trochanteribus, femoribus tarsisque posticis, nigris; tibiis tarsisque anterioribus albis.

Long. 15-16 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Surface covered with a dense silvery-white pubescence, which is especially long on the face, the sides of the scutellum, the pleuræ, and the metanotum; closely punctured, running into striations in the oblique hollow on the mesopleuræ and on the metanotum, which latter has an arcuated transverse keel at the base, behind which the punctuation is finer; the centre of the metanotum hollowed; scutellum closely punctured. Petiole shining, impunctate; postpetiole aciculate and black above; the other segments also black above, the second and third finely and closely punctured; the ventral surface is honey-yellow, the sides rufous, wanting the fuscous tint noticeable on the thorax. The legs are pilose, the tibiæ (especially the hind pair) being covered with a very stiff pile; the extreme tips of the front tarsi, and the apical halves of the middle tarsi, black; the four hind coxæ more or less rufous. Wings hyaline, with a faint fuscous tint; areolet triangular, pedunculated. Antennæ three fourths of the length of the body; scape rufous. Palpi and mandibles yellow.

A larger and more robust species than *C. tepanecus*, the wings longer, the metanotum much more deeply excavated, the postpetiole black and strongly aciculated.

4. **Campoplex lacivius.**

Campoplex lacivius, Cresson, Proc. Acad. Phil. 1873, p. 383 (♂)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

5. **Campoplex veræpacticus.** (Tab. XIII. fig. 3.)

Niger; mandibulis, palpis, apice coxarum anticarum, trochanteribus, femoribus, tibiis tarsisque anterioribus, tibiisque posticis (apice excepto), flavis; abdomine rufo; alis hyalinis, fere fuscis.

Long. 15 millim.

Hab. MEXICO (*Bilimek*); GUATEMALA, Senahu (*Champion*).

The face, the sides of the scutellum, the pleuræ, and the metanotum covered with a rather long, the rest of the body with a shorter and more sparse, silvery-white pubescence. Antennæ about two thirds the length of the body; stout. Head and thorax closely punctured, the central depression on the mesopleura striated. Scutellum with the punctures not so closely packed together and larger; the punctures on the metanotum running into striations. Centre of the metanotum hollowed, widest at the apex. Petiole shining, the postpetiole and the remaining segments black above. Areolet triangular, sessile.

The male has the four anterior coxæ yellow, the hind tibiæ lined with black on the lower side, otherwise as in the female.

6. **Campoplex aurifer.**

Campoplex aurifer, Cresson, Proc. Acad. Phil. 1873, p. 383 (♂ ♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*¹).

7. **Campoplex flavipennis.**

Campoplex flavipennis, Cresson, Proc. Acad. Phil. 1873, p. 383 (♀)¹.

Campoplex flavipennis, var. *terminalis*, Cresson, loc. cit. p. 383 (♀).

Hab. MEXICO, Orizaba (*Sumichrast*¹).

8. **Campoplex melliventris.**

Campoplex melliventris, Cresson, Proc. Acad. Phil. 1873, p. 383 (♀)¹.

Hab. MEXICO, Cordova (*Sumichrast*¹).

9. **Campoplex lectus.**

Campoplex lectus, Cresson, Proc. Acad. Phil. 1873, p. 384 (♂)¹.

Hab. MEXICO, Cordova (*Sumichrast*¹).

10. **Campoplex mexicanus.** (Tab. XIII. fig. 4.)

Niger; abdomine pedibusque posticis rufis; pedibus anterioribus, mandibulis, palpis tegulisque, flavis; alis hyalinis, nervis nigris, stigmatibus fuscis. ♀.

Long. 10 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ stout, inclining to fuscous on the underside towards the apex; scape yellowish beneath. Head densely covered with long silvery-white pubescence. Thorax

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closely punctured, covered with silvery-white pubescence, which is longest on the pleuræ, the sides of the scutellum, and the metathorax; a deep furrow runs down the centre of the metanotum. Abdomen more than double the length of the head and thorax together, pilose; the two basal segments black above; sheath of the ovipositor pilose. Wings short; areolet with the lateral nervures scarcely meeting at the top, not pedunculated. Anterior coxæ black at the base; the posterior coxæ and the hind trochanters entirely black.

11. **Campoplex gnarus.**

Campoplex gnarus, Cresson, Proc. Acad. Phil. 1873, p. 384 (♂)¹.

Hab. MEXICO, Orizaba (*Sumichrast*¹).

12. **Campoplex calcaratus.**

Campoplex calcaratus, Cresson, Proc. Acad. Phil. 1873, p. 384 (♂ ♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*¹).

13. **Campoplex macilentus.**

Campoplex macilentus, Cresson, Proc. Acad. Phil. 1873, p. 384 (♀)¹.

Hab. MEXICO, Cordova (*Sumichrast*¹).

14. **Campoplex divisus.** (Tab. XIII. fig. 2.)

Campoplex divisus, Cresson, Proc. Acad. Phil. 1873, p. 385 (♂)¹.

Hab. MEXICO, Orizaba (*Sumichrast*¹).

15. **Campoplex maceratus.**

Campoplex maceratus, Cresson, Proc. Acad. Phil. 1873, p. 385 (♂)¹.

Hab. MEXICO, Cordova (*Sumichrast*¹).

16. **Campoplex nefastus.**

Campoplex nefastus, Cresson, Proc. Acad. Phil. 1873, p. 385 (♂)¹.

Hab. MEXICO, Cordova (*Sumichrast*¹).

17. **Campoplex legalis.**

Campoplex legalis, Cresson, Proc. Acad. Phil. 1873, p. 385 (♂)¹.

Hab. MEXICO, Mirador (*Dr. Sartorius*¹).

18. **Campoplex inæqualipes.**

Campoplex inæqualipes, Cresson, Proc. Acad. Phil. 1873, p. 386 (♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*¹).

LIMNERIA.

Limneria, Holmgren, Sv. Ak. Handl. 1858, p. 51; *Œfv.* 1858, p. 326; Act. Ac. R. Suec. Consp. xv. (1860).

1. *Limneria albispina*. (Tab. XI. fig. 13.)

Nigra; pedibus rufis, mandibulis, palpis, trochanteribus anterioribus, tibiis posticis tarsorumque basi, albis; tarsis posticis (basi excepta) tibiis apice nigris; alis hyalinis, stigmatibus nigris. ♀.

Long. 9 millim.; terebra 3 millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

Antennæ moderately stout, microscopically pilose, as long as the abdomen. Head and mesonotum semiopaque, finely punctured; the middle of the mesopleuræ shining and impunctate; the rest longitudinally striated; metathorax finely and closely punctured, covered with longish silvery-white hair; the punctures in the middle of the metanotum almost forming striations. Petiole longish, narrow at the base, the apex clavate, shining, aciculate; the other abdominal segments coarsely aciculate at the base, pilose at the apex and sides. Abdomen somewhat laterally compressed on the lower side at the apex. Hind tibiæ with a narrow black ring towards the base; tibial spurs longish and white; nearly the basal half of the metatarsus and the extreme base of the other segments also white.

2. *Limneria alpestris*.

Nigra; pedibus rufis, basi coxarum anterioribus tarsisque posticis nigris, basi tarsorum posticorum albo; alis fere fuscis, nervis nigris. ♀.

Long. 8 millim.; terebra fere 2 millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

Head closely pilose; metapleura sparsely clothed with longish white hairs; metathorax not so strongly punctured as in *L. albispina*, and, as in that species, there are no clearly defined areæ, only a transverse keel round the top and one down each side. Areolet subpetiolate above, triangular, slightly angled beneath where the recurrent nervure is received near the apex. Similar in form and clothing to *L. albispina*, but with the body more slenderly built; the abdomen longer and narrower compared to the thorax, and not punctured, only faintly aciculate; the petiole longer and narrower, narrow at the base, clavate at the apex, and longer than the second segment; the ovipositor shorter, being not much longer than the three apical segments; there is no white on the hind femora; and the wings are fuscous tinted, the stigma livid testaceous.

3. *Limneria sonorensis*. (Tab. XIII. fig. 6.)

Hab. MEXICO, Northern Sonora (*Morrison*).

Similar in coloration to *L. albispina*, except that the abdomen is broadly reddish-

brown beneath and at the apex of the second and third segments, the latter only broadly so at the sides; differing otherwise from that species in the shorter, more clavate abdomen and distinct metathoracic areæ. Antennæ stout, nearly as long as the abdomen, densely covered with short pile; the joints not clearly separated; scape large, shining. Face densely covered with longish silvery-white hair, the front and vertex finely punctured, opaque; mandibles and palpi yellow. Thorax opaque, the mesonotum minutely, the pleuræ more strongly, punctured; metathorax as strongly punctured as the pleuræ; the centre of the metanotum transversely striated; the two median areæ clearly defined; the lateral area indistinct. Abdomen opaque, finely punctured; the basal part of the petiole shining, impunctate; the apical portion suddenly dilated, opaque. Areolet subpetiolate, triangular, the recurrent nervure received in the middle.

4. *Limneria montezuma*.

Nigra; pedibus anterioribus sordide rufis, mandibulis palpisque flavis; alis hyalinis, nervis nigris, tegulis flavis. ♀.

Long. fere 8 millim.; terebra 1 millim.

Hab. MEXICO (*Bilimek*).

Head densely covered with silvery-white pubescence; the top more sparingly pubescent and closely and somewhat coarsely punctured. Thorax opaque, closely punctured, covered with silvery-white pubescence, which is longest on the metathorax. Scutellum more shining than the mesonotum, finely punctured; margined round the apex. Metathorax with four areæ—one basal, occupying the entire base; two lateral, large; and a median, rounded at the base and becoming dilated before the middle. Metathoracic spiracles small, oval, placed near the base. Abdomen opaque, the sides and apex pilose; the basal half of the petiole shining, impunctate, the apical part finely punctured, opaque; second segment obscure yellow beneath; the other segments obscure yellow at their junction. Areolet 4-angled, scarcely pedunculated, oblique, longish. Legs densely covered with white pubescence; the four anterior ones obscure testaceous red, the middle pair inclining to fuscous behind; the coxæ black.

5. *Limneria* (?) *insolens*.

Limneria (?) *insolens*, Cresson, Proc. Acad. Phil. 1873, p. 386 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova (*Sumichrast*¹).

NONNUS.

Nonnus, Cresson, Proc. Acad. Phil. xxv. p. 386 (1873).

Two species were placed in this genus by Cresson; both inhabit Central America.

1. **Nonnus atratus.** (*Nonus niger*, Tab. XII. fig. 8.)*Nonnus atratus*, Cresson, Proc. Acad. Phil. 1873, p. 387 (♀)¹.*Hab.* MEXICO, Cordova (*Sumichrast*¹); PANAMA, Volcan de Chiriqui 2500 to 4000 feet (*Champion*).2. **Nonnus antennatus.** (*Nonus antennatus*, Tab. XII. fig. 9.)*Nonnus antennatus*, Cresson, Proc. Acad. Phil. 1873, p. 387 (♂ ♀)¹.*Hab.* MEXICO, Orizaba (*Sumichrast*¹).

GROTEA.

Grotea, Cresson, Proc. Ent. Soc. Phil. iii. p. 397, figg. 1 a-c (1864).

This genus was founded by Cresson upon *G. anguina*, from New Jersey and New York, a second species from Mexico being subsequently added by the same author; I am now able to add yet another from Mexico. Cresson (*op. cit.* p. 399) states that both sexes of *G. anguina* were reared from a raspberry-stem, together with a small species of *Crabro*.

1. **Grotea mexicana.***Grotea mexicana*, Cresson, Proc. Acad. Phil. 1873, p. 413 (♂ ♀)¹.*Hab.* MEXICO, Orizaba (*Sumichrast*¹).2. **Grotea fulva.** (Tab. XII. fig. 27.)

Fulva, flavo variegata; apice antennarum lineisque 2 metathoracis nigris, lineis 3 mesonoti fuscis; alis hyalinis, fascia nigra, nervis nigris. ♀.

Long. 20 millim.; terebra 9 millim.

Hab. MEXICO, Presidio (*Forrer*).

Smooth, shining, impunctate. Head and thorax for the greater part yellow. Antennæ stout, almost thickened towards the apex, nearly glabrous. There is a small elongated area at the base of the metanotum in the centre, and from it a line runs to join a longitudinal keel on the inner side of the spiracles; on the outer side of the spiracles is another keel. The spiracles on the metathorax are long, curved, narrow. There is a black line running on the top of the petiole to beyond the middle, and another, but shorter one, on each side. The four front legs are almost entirely yellow. The fascia in the fore wings is small, and situated at the apex, partly in the radial and partly in the cubital cellule.

MESOCHORUS.

Mesochorus, Gravenhorst, Ichn. Europ. ii. p. 960 (1829).

1. **Mesochorus totanacus.**

Mesochorus totanacus, Cresson, Proc. Acad. Phil. 1873, p. 388 (♀)¹.

Hab. MEXICO, Orizaba (*Sumichrast*¹).

PRISTOMERUS.

Pristomerus, Curtis, Brit. Ent. p. 624 (1836).

1. **Pristomerus mexicanus.**

Pristomerus mexicanus, Cresson, Proc. Acad. Phil. 1873, p. 388 (♂)¹.

Hab. MEXICO, Mirador (*Dr. Sartorius*¹).

EXETASTES.

Exetastes, Gravenhorst, Ichn. Europ. iii. p. 395 (1829).

1. **Exetastes vittatipes.**

Exetastes vittatipes, Cresson, Proc. Acad. Phil. 1873, p. 389 (♀)¹.

Hab. MEXICO, Cordova (*Sumichrast*¹).

2. **Exetastes tarsalis.**

Exetastes tarsalis, Cresson, Proc. Acad. Phil. 1873, p. 389 (♂ ♀)¹.

Hab. MEXICO, Cordova (*Sumichrast*¹).

3. **Exetastes mexicanus.**

Exetastes mexicanus, Cresson, Proc. Acad. Phil. 1873, p. 389 (♂)¹.

Hab. MEXICO, Mirador (*Dr. Sartorius*¹).

SCOLOBATES.

Scolobates, Gravenhorst, Ichn. Europ. iii. p. 357 (1829).

1. **Scolobates (?) varicornis.** (Tab. XII. fig. 5.)

Niger; capite, antennis, mesonoto antice, pedibus anterioribus tarsisque posticis, fulvis; alis fuscis, fascia medio fere hyalina. ♂.

Long. 10-11 millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Antennæ stout, longer than the body; microscopically pilose; fulvous, inclining to yellow beyond the middle, the apical eight joints black; the third joint nearly as long as the two succeeding united. Head shining, impunctate, and nearly glabrous on the top; the face projecting, but not largely nor sharply above, bearing shallow punc-

tures, and covered with longish fulvous hair; the antennæ originating from tubercles; the clypeus depressed round the base; eyes oblong, comparatively small; the space behind the eyes considerably developed. Thorax shining, impunctate; mesonotal sutures obsolete; scutellum moderately raised, longer than broad, the sides not keeled; metathorax depressed at the extreme base, and having a gradual slope to the apex; the spiracles round, and situated a little before the middle. Abdomen a little longer than the head and thorax united, shining, impunctate, covered with a dense fuscous pile; becoming gradually widened to the apex of the fourth segment, thence gradually narrowed; the apices of the second and following segments and the ventral surface testaceous. Legs stout, the tarsi densely pilose; hind tibiæ curved inwardly, the spurs short and thick; metatarsus narrowed and bent at the extreme base, scarcely so long as the three following joints united; the second tarsal joint longer than the third, the latter twice the length of the fourth, the fifth joint (with the claws) a little longer than the second. There is no areolet; the recurrent nervure is interstitial.

In this insect the neuration of the wings is as in *Heteropelma sonorensis* and *Retanisia*; the much thicker hind tibiæ and tarsi (the tarsi, moreover, being longer than the tibiæ), the non-lobed mesonotum, and the smaller eyes (which do not reach so near to the clypeus) sufficiently distinguish it from the latter. The short antennæ, the large eyes (reaching quite near to the mouth), the long compressed abdomen, the broader scutellum, and the more slender tarsi (of which the metatarsus is also longer), separate *Heteropelma* from *S. varicornis*.

BANCHUS.

Banchus, Fabricius, Ent. Syst. Suppl. p. 209 (1798).

1. *Banchus mexicanus*. (Tab. XII. fig. 6.)

Fulvus, flavo variegatus; femoribus posticis nigris; alis fulvis, stigmatibus flavo. ♂.
Long. 15 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ not much longer than the head and thorax united, involute, stout, microscopically pilose. Head much broader than long, not much developed behind the eyes; the latter curve round on the top, and reach nearly to the base of the mandibles; an oval depression over each antenna; the face slightly projecting in the middle; the clypeus transverse at the apex, the sides oblique; the mandibles without teeth; the face and clypeus punctured; yellow, the depressions over the antennæ and the space between them black; the centre of the face and the base fulvous; the tips of the mandibles black, the palpi yellow. Thorax rather strongly and closely punctured, fulvous; the scutellum not so strongly punctured and ending in a sharp nipple-like point; scutellum (except the point and a line down from it), a spot in front of the mesonotum, a quadrate mark beneath the tegulæ, a broad mark on the mesopleuræ in front, and

the middle of the metanotum, yellow; the base of the metanotum, two oblique marks on the pleuræ, a line in front of the scutellum, and the sternum more or less, black. Abdomen yellow, the petiole (except at the apex), the basal half of the second segment and the other segments at the base, fulvous. The anterior legs fulvous, inclining to yellow in front. The middle legs fulvous; the coxæ in front, the tibiæ and the tarsi in front at the base, yellow; the femora have a black line behind. The hind coxæ and femora are black, except that the former have a dark fulvous mark behind and the latter are fulvous at the base and apex; the hind tibiæ are yellow, broadly black at the apex; the hind tarsi yellow, fulvous at the tips of the joints. Areolet large, the lateral nervures a little curved, not united at the top; the recurrent nervure is received in the basal third.

Fam. BRACONIDÆ.

The species of this extensive family inhabiting the Central and Southern regions of America are hardly known, and even our knowledge of the species found in North America is comparatively slight. The larger species only are known, the smaller and more obscure forms not having been collected at all. Under these circumstances it is impossible to say if the Braconidæ are as numerous represented in the Neotropical Region as they are in the Palæarctic.

Division CYCLOSTOMI.

This division contains those species which have a semicircular opening between the clypeus and the mandibles. It has been divided by Förster (Verh. pr. Rhein. xix.) into numerous subfamilies, but these are based on such slight characters that I have in some cases not adopted them. Moreover to do so would necessitate, to carry out his scheme consistently, the creation of some new divisions; and this I am not at present prepared to do. The "Cyclostomi" contains some of the largest species in the family, and is apparently very numerous represented in the Neotropical Region.

Subfam. BRACONINÆ.

BRACON.

Bracon, Fabricius, Syst. Piez. p. 102 (1804); Wesmæel, Nouv. Mém. Acad. Brux. 1838, p. 7; Förster, Verh. pr. Rhein. xix. p. 235.

Bracon is not so numerous represented in our region as the closely allied genus *Iphiaulax*, which is chiefly distinguished from it by having several transverse, usually striated, furrows on the abdomen, that immediately behind the petiole being bifurcated on either side. This latter character is the best mark of distinction, and it would be difficult without it to say how the two are to be separated, for in some species the

posterior transverse furrows tend to become obsolete. *Myosoma*, Brullé, I have not adopted, as it is only distinguished by having the legs more pilose than is usual with the majority of the species of *Bracon*; in this respect there is so much variation that it is impossible to draw a hard-and-fast line.

I have divided the genus into groups. The chief points of distinction are to be found in the form of the head and abdomen. In the abdomen the form of the petiole shows a good deal of variation. The shape of the eyes and of the frontal region is likewise of importance. The alar neurulation does not exhibit much variation. I have, in most cases, not given the number of joints in the antennæ: in the first place, they are very difficult to count, owing to their being so closely soldered together; and, secondly, because the tips are broken off in nearly all the specimens before me.

i. *Abdomen not punctured nor striated.*

The group of *B. COMPUNCTOR*.

Antennæ as long as the body, the depression between them not deep. Abdomen with a stout keel down the centre of the second segment; the depression on the sides rather narrow, not reaching to the apex; suturiform articulation nearly transverse, not reaching to the sides, dilated at the apex and also narrowly backwards; a furrow on the third segment. Ovipositor longer than the body, which is black, except at the base of the abdomen. Wings black, with a hyaline band at the stigma.

I am not sure whether this species should not be treated as an *Iphiaulax*, but the suturiform articulation is not bifurcated at the sides, although there is a furrow on the third segment.

+ 1. **Bracon compunctor.** (Tab. XIII. fig. 11.)

Niger; abdominis basi læte rufa; alis fuliginosis, fascia medio hyalina; terebra quam corpus multo longiore. Long. 12-13 millim.; terebra 15-16 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).

Antennæ longer than the body; 70-74 jointed, the basal joint nearly as long as the third and fourth together, these latter being subequal. Head covered with longish black hair; face almost transverse, scarcely punctured; clypeus not projecting and without any depression at its base; front depressed in the middle (the depression reaching to the ocelli), and with a narrow furrow down its centre. Thorax shining, sparsely covered with black hair. The central part of the petiole wide, becoming slightly enlarged towards the apex, the furrows broad and deep; a narrower furrow a little below the side, which is sharply ridged. Abdomen longer than the head and

thorax together, if anything, narrower than the mesothorax, and of nearly equal width throughout. The recurrent nervure is interstitial; the second cubital cellule is shorter than the third; the cubitus is almost straight at the first cubital cellule.

The group of *B. FRUSTRATUS*.

Eyes large, oval, reaching nearly to the apex of the clypeus, converging a little near the top. Head broadly developed behind the eyes; front broadly, but not deeply, depressed. Antennæ stout, microscopically pilose, not longer than the body, originating from stout tubercles, so that there is a deep depression between them, the depression extending nearly to the middle of the face. Mesosternal furrow obsolete. Petiole semiperpendicular, deeply furrowed along the sides. A wide furrow down either side of the second segment. Sutureform articulation deeply sinuated.

A. *Thorax black.*

* *Central portion of the petiole of nearly equal breadth throughout, or at least not narrowed towards the apex.*

+ 2. **Bracon frustratus.** (Tab. XIII. fig. 8.)

Niger, nitidus; abdominis segmentis 1^o-4^m rufis; alis fuliginosis.
Long. 11-12 millim.; terebra 16-17 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).

Antennæ scarcely so long as the body, tapering towards the apex, the scape curved beneath, produced into a club at the apex. Face shining in the middle below the antennæ, the sides and mouth-region rugose, but not strongly so; vertex and occiput shining, impunctate; an oval depression above each antenna, separated by a ridge, which is not so high as the outer side of the depression and has a fine keel down its centre. Palpi inclining to fuscous, especially at the apex; pilose. Clypeus projecting at the apex, and having a semicircular ridge near the base. The centre of the petiole is raised considerably above the sides, especially at the apex, but excavated in the centre at the base; the lateral furrow very wide at the apex. The furrow down the side of the second segment is wide and deep, and runs almost from the furrow on the petiole, but is still separated from it. The semicircular sutureform articulation is narrower than this furrow and terminates a very little beyond it, *i. e.* it does not reach the side of the segment. The abdomen is not longer than the head and thorax together; broader than the mesothorax, widening to the end of the third segment, whence it gradually (but slightly) narrows to the apex. The cubitus is sharply elbowed near its origin; the first cubital cellule is about one third longer than broad on the lower side; the second cubital cellule is, on the upperside, about equal in length to the third, on the lower side clearly longer than it.

** *Central portion of the petiole broad at the base, narrowed towards the apex.*

- 1 (2). Palpi and legs black; the face over the clypeus roughly crenulated;
the cheeks strongly punctured *gracilescens*.
2 (1). Palpi and fore tibiae and tarsi white; the face over the clypeus and
the cheeks not very strongly punctured *albipalpis*.

X 3. **Bracon albipalpis.** (Tab. XIII. fig. 7.)

Niger; abdomine rufo, apice nigro; palpis, trochanteribus, basi femorum, tibiis tarsisque anterioribus, albis;
alis nigris. ♂.

Long. 10.5 millim.

Hab. PANAMA, Bugaba (*Champion*).

Head large, cubital, strongly developed behind the eyes, broader than the mesothorax; smooth, shining, the sides of the face closely rugose; clypeus scarcely projecting, a narrow, sharp, semicircular carina at its base; the depression in front broad, reaching to the hinder ocelli, without a distinct ridge in the centre, the depression between (and below) the antennæ wide and deep. Thorax shining, impunctate. The raised central part of the petiole has straight sides and is deeply depressed at the base, the depression extending to the middle; the lateral furrow is deep and wide, and originates a little before the middle; the furrow down the side of the second abdominal segment deep; the suturiform articulation is wide and deep, its bend in the middle somewhat sharp, not forming a semicircle. Abdomen longer than the head and thorax together, bulging out in the centre, where it is distinctly broader than the mesothorax; the last segment forms a membranous projection, incised in the middle, over the last ventral one.

4. **Bracon gracilescens.** (Tab. XIII. fig. 9.)

Niger, nitidus; abdominis segmentis 1^o-4^m rufis, terebra quam corpus fere longiore; alis fuliginosis. ♀.
Long. 10 millim.; terebra fere 11 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Similar in coloration and sculpture to *B. frustratus*, but much narrower and somewhat smaller; the clypeus is not so projecting, and there is no semicircular ridge at its base; the depression above the antennæ is not so deep, nor is it divided in two by a sharp and distinct ridge; the middle lobe of the mesonotum is not so sharply separated and raised above the lateral one; the abdomen is longer, and distinctly longer than the head and thorax together; the ovipositor is shorter; and the second cubital cellule is longer.

B. *Thorax red; the lateral furrows on the second abdominal segment not so deep nor distinct.*

5. **Bracon bugabensis.** (Tab. XIII. fig. 10.)

Luteus; antennis, capite, prosterno, abdominis apice pedibusque, nigris; alis fere hyalinis, fascia medio apiceque fumatis. ♀.

Long. 10 millim.; terebra 9.5 millim.

Hab. PANAMA, Bugaba (*Champion*).

Antennæ as long as the body; the third joint straight, about one fourth longer than the next. Face aciculated; clypeus almost transverse at the apex, not projecting much, a longish depression above it on either side; vertex depressed above the antennæ, the ocelli placed at the end of the depression and slightly raised. Thorax flat above; the scutellum scarcely raised, its sides at the apex depressed and distinctly separated; a broad and deep oblique furrow on the mesopleura. Petiole uniformly raised in the centre; the edge of the raised part with a distinct border; the side depressed below it and with a broad furrow. Abdomen with a triangular field (bounded by a deep furrow) in the centre, and an oblique furrow on either side, of the second segment; a deep furrow along the sides; apical segment with longish hair. Legs densely covered with greyish hair; apical joint of the trochanters piceous; four anterior knees testaceous; four anterior tarsi whitish, except the apical joint; spurs testaceous. The cloud on the fore wings extends across from the first cubital cellule, becoming narrower as the opposite side of the wing is reached; the apical cloud commences a little beyond the second transverse cubital nervure; the hind wings are smoky, with a fainter band before the apex.

The group of B. DISTINGUENDUS.

Second abdominal segment not furrowed at the sides, and without a keel down the centre; suturiform articulation straight or but slightly waved.

Differs from the group of *B. frustratus* only in the second segment not being furrowed laterally, and in the suturiform articulation not being so acutely bent.

- 1 (14). Thorax for the greater part, or entirely, black.
- 2 (7). Face roughly reticulated or punctured; the cheeks keeled.
- 3 (4). Abdomen red, black at the apex *distinguendus.*
- 4 (3). Abdomen black, red laterally at the base.
- 5 (6). Ovipositor as long as the thorax and abdomen together; wings semihyaline towards the apex *apicipennis.*
- 6 (5). Ovipositor scarcely longer than the abdomen; wings uniformly fuscous; sides of the abdomen broadly white *heterodoxus.*
- 7 (2). Face not roughly punctured or reticulated; abdomen for the greater part red.
- 8 (9). Middle lobe of the mesothorax red *morrisoni.*

- 9 (8). Mesothorax entirely black.
 10 (13). Eyes not reaching to the base of the mandibles.
 11 (12). Apex of the abdomen black *sedulus*.
 12 (11). Apex of the abdomen red *excelsus*.
 13 (10). Eyes reaching to the base of the mandibles *chontalensis*.
 14 (1). Thorax red, wholly or for the greater part.
 15 (20). Abdomen black, more or less white laterally and beneath.
 16 (19). Fore legs black.
 17 (18). Mouth black; ovipositor shorter than the abdomen *melanostoma*.
 18 (17). Mouth reddish; ovipositor longer than the abdomen *erythrostroma*.
 19 (16). Fore legs red *nicaraguensis*.
 20 (15). Abdomen rufous.
 21 (22). Head and legs black *aspasia*.
 22 (21). Head and legs rufous.
 23 (24). Anterior tibiæ and femora black *albispina*.
 24 (23). Anterior tibiæ and femora pale testaceous *forreri*.

6. Bracon distinguendus. (Tab. XIII. fig. 12.)

Niger, crassus; abdominis segmentis 1^o-4^m rufis, articulatione suturiformi late sinuata; alis fuscescentibus, apice vix hyalinis; terebra quam abdomen longiore. ♀.

Long. 9 millim.; terebra 6 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).

Antennæ rather stout, microscopically pilose; the scape but slightly produced at the apex beneath. Head cubital, broader than long, retreating behind; front depressed, broadly, but not very deeply, a furrow leading down from the ocelli in the centre. Face irregularly and rugosely reticulated; a sharp keel running down from the outer side of each antenna, and another keel parallel to the eyes, the space enclosed by these two keels being transversely reticulated; clypeus finely punctured, projecting. Palpi long, sparsely pilose. Thorax stout; the middle lobe of the mesonotum scarcely raised or separated from the lateral; the furrows almost obsolete. Metathorax short, broad, gradually sloping to the apex. Abdomen not much longer than the thorax, broad at the base, gradually narrowing from the second segment to the blunt apex. The raised central part of the petiole is depressed at the base and becomes slightly narrowed towards the apex; the lateral part is broader than the central, and has a shallow, shining, furrow down its centre. The suturiform articulation is broad, curved backwards in the middle, and shallow. Legs stout, the tibiæ and tarsi densely pilose, opaque; femora shining. The wings are lighter towards the apex; the recurrent nervure is received in front of the first transverse cubital one; the second cubital cellule is a little shorter than the third; at the base the cubitus forms a round curve.

A broad, stout insect with large wings, and readily known from the following two species by the red abdomen and shorter ovipositor.

X 7. **Bracon apicipennis.** (Tab. XIII. fig. 13.)

Niger; ventris basi late rufa; alis fusciscentibus, litura hyalina; terebra quam corpus fere longiore; articulatione suturiformi vix sinuata. ♀.

Long. 9 millim.; terebra 7.5 millim.

Hab. PANAMA, Bugaba 800 to 1500 feet (*Champion*).

Antennæ stout, as long as the thorax and abdomen together, the scape not produced at the apex beneath. Head narrower than the mesothorax, not much developed behind the eyes; front depressed, but not broadly, a broad and deep furrow leading down from the ocelli. Face rugosely punctured, two keels on each side, enclosing transverse reticulations; clypeus projecting, the apex margined, a broad semicircular depression at its base. Thorax stout, the middle lobe of the mesonotum not clearly separated from the lateral one; scutellum not raised above the mesonotum; metathorax short, broader than long, and having a gradual but somewhat rounded steep slope to the apex, the oblique furrow at its side wide and deep. Petiole with the central part raised considerably above the lateral part and deeply excavated at the base; the lateral furrow very deep and broad. The second abdominal segment is slightly depressed on each side at the base. The suturiform articulation is slightly bent backwards. The abdomen is shorter than the head and thorax together, being not much longer than the thorax. Cubital nervure broadly curved at the base; the recurrent nervure received a little in front of the first transverse cubital one; the second cubital cellule distinctly shorter than the third.

X 8. **Bracon heterodoxus.**

Niger; abd omine, lateribus et ventre sordide albis; articulatione suturiformi sinuata; terebra quam abdomen fere longiore; alis fuliginosis. ♀.

Long. 8.5 millim.

Hab. GUATEMALA, Las Mercedes 3000 feet (*Champion*).

Antennæ moderately stout; basal joint as long as the third and fourth joints together, not produced at the apex beneath. Front excavated, but not very deeply, the centre aciculate; the ocelli raised; face coarsely rugose; a keel down the side of the eyes; clypeus not projecting. Petiole not much longer than broad, the central part flat, large, excavated deeply at the base; the lateral furrow short, broad, moderately deep. The suturiform articulation is narrow and curved backwards in the middle. The abdomen is scarcely longer than the head and thorax together; a little longer, and slightly broader in the middle, than the thorax, and narrowed to a blunt point at the apex.

The head is longer than in *B. apicipennis*, being much more developed behind the eyes. The wings are torn beyond the stigma, so I cannot describe the neuration.

9. *Bracon erythrostroma*.

Niger; ore, pro- et mesothorace coxisque anticis, rufis; alis fuliginosis. ♀.
Long. 8 millim.; terebra 5.5 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet, Bugaba (*Champion*).

Antennæ nearly as long as the body, densely pilose; the third and fourth joints subequal; the basal joint produced at the apex on the underside. Head shining, retreating somewhat sharply behind the eyes; the top impunctate, the face coarsely and rugosely reticulated and with three stout keels running down the centre; eyes margined on the underside; clypeus rugosely punctured; front moderately depressed in the centre, the central furrow wide; the clypeus, the oral region, the mandibles (except at the apex), and palpi reddish. Thorax shining, impunctate; scutellum triangular, flattish; metapleural suture deep, moderately wide. Petiole with the central part wide, broadly raised in the middle, the bordering furrow narrow, the sides sloping away from this gradually. Abdomen not much longer than the head and thorax united, and narrowing from the second segment; second segment considerably shorter than the third, its apex transverse; the apical ventral segment is large and ploughshare-shaped; the apical segments at their junction, and the sides, narrowly, are whitish. Legs stout, pilose. Wings longish; the cubital nervure with a round curve; the recurrent nervure received shortly before the transverse cubital one; the second cubital cellule is, on the lower side, a little longer than the third.

X 10. *Bracon nicaraguensis*.

Niger; ore, palpis, orbitis, prothorace, mesothorace, tegulis pedibusque anticis, rufis; abdominis segmentis marginibus albis, articulatione suturiformi fere sinuata; alis fuliginosis. ♀.

♂. Pedibus anterioribus rufis.

Long. 7.5 millim.; terebra 3.5 millim.

Hab. NICARAGUA, Chontales (*Janson*); PANAMA, Bugaba (*Champion*).

Closely related to *B. erythrostroma*, but with the rufous colour on the head more developed, the occiput being almost entirely of that colour; the palpi are light rufous. The antennæ are scarcely so stout; the anterior legs are entirely rufous, as is also the mesothorax; the petiole is more sharply vertical, and has the inner furrow wider; the abdominal segments are not so broadly lined with white, and the ovipositor is shorter.

X 11. *Bracon laticarinatus*.

Niger; thorace pedibusque 4 anterioribus rufis; alis fuscis. ♂.

Long. 6. millim.

Hab. GUATEMALA, San Gerónimo (*Champion*).

Very much resembling in form, sculpture, and coloration what I have regarded as the male of *B. nicaraguensis*; in coloration differing from that insect in having the

mouth black (the mandibles only being reddish at the base), and the thorax with only a little black on the apex of the metanotum; but the chief distinction consists in there being a broad keel down the second segment, extending a little beyond the suturiform articulation, and having a depression on either side at the base.

12. *Bracon melanostoma*.

Niger; pronoto, mesothorace basique coxarum anticarum, rufis; abdominis marginibus albidis; alis fuliginosis. ♀.

Long. 9 millim.; terebra fere 4 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Face rugosely reticulated, with some longitudinal keels; over each antenna is an oval depression, separated by a broad keel, in the centre of which is a shallow furrow; the centre of the clypeus dull red; the joints of the palpi dull white at the apex. Petiole deeply excavated at the base, the central part moderately large and surrounded by a wide and deep furrow (but not so wide as the part of the petiole on the outer side of it). Sutureform articulation waved. The third and following segments at the apex, a line along the sides, and the ventral surface in the centre, whitish. Wings long; the second cubital cellule on both sides shorter than the third; the recurrent nervure received at a little distance from the first transverse cubital one. Legs stout, the spurs whitish, the femora with some long hairs, the tibiæ and tarsi densely pilose.

Very nearly related to *B. erythrostroma*, but a little longer; the ovipositor is shorter, compared to the body; the head (except the mandibles, which are broadly piceous towards the apex) is entirely black, as is also the prosternum; the abdomen is longer, and is broadly white along the sides; the suturiform articulation is curved backwards, somewhat sharply at the middle; the recurrent nervure is received further from the first transverse cubital one; and the inner furrow of the petiole is broader and deeper, the petiole itself being more developed laterally.

13. *Bracon morrisoni*. (Tab. XIII. fig. 18.)

Niger; mesonoti lobo medio abdomineque rufis, articulatione suturiformi recta; terebra quam abdomen vix longiore; alis fuscescentibus. ♀.

Long. 8 millim.; terebra fere 4 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ shorter than the thorax and abdomen united; stout, of nearly uniform thickness throughout, microscopically pilose. Head in front covered with long silvery-white hair; the orbits externally narrowly red; the face coarsely punctured; the front opaque and punctured laterally; the centre shining, impunctate, and slightly depressed, the central furrow narrow; eyes projecting, oval; palpi densely covered with white pubescence. Thorax shining, impunctate; mesopleuræ in front and metathorax covered with long white hair. Mesothorax red, black laterally along the middle lobe, the

black colour, however, not reaching the base. Petiole almost perpendicular, its apex reaching above the thorax; hollowed in the centre, the centre bicarinate, the sides separated from the central keel by deep depressions. Abdomen scarcely so long as the head and thorax united, at the base somewhat broader than the thorax, and becoming gradually narrower to the apex, which is rounded; the sides and ventral surface sparsely clothed with white hair. Legs stout; the coxæ covered with longish white hair; the tibiæ and tarsi densely pilose. Wings longish, narrow; the nervures and stigma dull black; the second cubital cellule on both sides (but especially on the upper) shorter than the third.

✕ 14. **Bracon sedulus.** (Tab. XIII. fig. 14.)

Niger; abdominis segmentis 1^o-6^m rufis, articulatione suturiformi recta; terebra quam abdomen brevior; alis fuscescentibus. ♀.

Long. 9 millim.; terebra 4.5 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Antennæ as long as the body, tapering towards the apex; the third and fourth joints shorter than the basal one, and subequal. Face densely covered with long white hair; shining, impunctate, transverse; clypeus not projecting, and not separated from the face by a groove. Front but slightly excavated; a broad, but not long, furrow leads down into it from the ocelli, which are raised. Thorax shining, impunctate; mesonotal sutures deep; prothorax with a deep furrow on the side; metathorax densely covered with long white hair, gradually sloping to the apex. Abdomen longer than the head and thorax together; broader in the middle than the mesothorax, and becoming compressed laterally towards the apex. The petiole is raised in the centre, this raised central part being bounded by straight furrows. The suturiform articulation is almost transverse, narrow, and shallow.

Differs from *B. morrisoni* in having the thorax entirely black, and the abdomen not entirely red, the second cubital cellule nearly as long as the third, the abdomen longer compared to the head and thorax, and the eyes shorter and not reaching quite so near to the mandibles. *B. excelsus* may be known from *B. sedulus* by its smaller size, the darker wings, the shorter second cubital cellule, the abdomen shorter and not entirely red, the ovipositor shorter, &c.

15. **Bracon excelsus.**

Niger; abdomine rufo, articulatione suturiformi recta; terebra quam abdomen fere brevior; alis fuliginosis. ♀.
Long. 7 millim.; terebra 2 millim.

Hab. MEXICO, Presidio (*Forrer*).

Antennæ with the pedicel of the scape longish, half the length of the first joint; the first joint globular, not produced at the apex, and about three times longer than the second; the third and fourth joints subequal. Face almost transverse, scarcely

punctured; clypeus not projecting, and not separated by a furrow from the face; the front is excavated, the excavation moderately deep and separated from the ocelli by a space greater than its own length. Thorax impunctate, shining; mesonotal sutures obsolete; pleuræ and metanotum but sparsely pilose. Petiole perpendicular, the central part almost straight, the furrows broad. The suturiform articulation narrow, shallow, transverse. The abdomen somewhat shorter than the head and thorax together.

16. *Bracon chontalensis*.

Niger, abdomine rufo; alis fuscescentibus; oculis basin mandibularum attingentibus.
Long. 6.5 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Antennæ somewhat longer than the body, black, the flagellum dull brownish beneath, microscopically pilose. Head narrower than the thorax, shining, impunctate, narrowing considerably behind the eyes; the central furrow in the front broad, deep; face sparsely pilose; tips of the mandibles reddish; eyes large, oval, reaching nearly to the base of the mandibles; the orbits externally on the lower side dull reddish. Thorax shining, impunctate, the sides sparsely pilose; the oblique furrow on the metapleuræ deep. Abdomen a little shorter, and, if anything, broader than the thorax. Petiole perpendicular.

Similar in coloration to *B. excelsus*, but easily known from that species by the eyes reaching nearly to the base of the mandibles.

The specimen described below (also from Chontales) is probably the male:—

Antennæ a little longer than the body, the pedicel very short; first joint of nearly equal width throughout, and about the length of the third; the flagellum closely pilose, fuscous on the lower side. Face densely covered with longish white hair, impunctate, smooth; clypeus slightly projecting, separated from the face by a not very distinct furrow. Front slightly depressed in the centre; a furrow leading into it from the ocelli. Thorax shining, the metathorax covered with long white hair. Abdomen shorter than the thorax and head together, becoming gradually narrower from the base of the second segment; petiole almost perpendicular, the central part widening towards the apex, its sides straight; suturiform articulation straight, minute. The second cubital cellule shorter than the third; the recurrent nervure interstitial. Length 6 millim.

17. *Bracon evolans*.

Niger; tarsi anticis palpisque albis; abdomine rufo, articulatione suturiformi sinuata; alis fuliginosis. ♂.
Long. 7 millim.

Hab. MEXICO, Presidio (*Forrer*).

Antennæ longer than the body, 41-jointed, microscopically pilose; first joint a little

longer than the third, thickened and produced at the apex beneath; the third joint a little longer than the fourth. Face irregularly and rugosely reticulated, broadly but not deeply excavated over the antennæ, the depression reaching almost to the ocelli (from which there runs only a very small furrow); clypeus projecting, and separated from the face by a wide depression. The oral region bears long white hair; the mandibles are piceous; the palpi white, hairy. The sternum, pleuræ, and metathorax are densely covered with long white hair. The middle part of the petiole is broad, and is bordered by deep, not very wide, and slightly curved furrows. The abdomen is a little longer than the head and thorax together, and becomes gradually narrowed towards the apex. The suturiform articulation is narrow, shallow, and slightly bent backwards in the middle. Cubital nervure broadly curved at the base; the recurrent nervure received considerably in front of the first transverse cubital one; second cubital cellule on the lower side longer than the third.

X 18. *Bracon aspasia*.

Rufus; capite, antennis pedibusque, nigris; alis fuscescentibus, stigmatibus fuscis; articulatione suturiformi sinuata; terebra thoracis longitudine. ♀.

Long. fere 8 millim.; terebra 2 millim.

Hab. MEXICO, Presidio (*Forrer*).

Antennæ originating from large tubercles, stout, microscopically pilose, the apical joints fuscous; basal joint and the scape four times longer than the second joint, its apex dilated; first joint of the flagellum not much longer than the second. Face rugose, the sides irregularly reticulated, the centre transversely striated, the striations running into the punctures. There is a broad, somewhat oval, depression above each antenna, the depressions separated by two curved keels, which approach each other in the middle and diverge outwardly at the base and apex. Apical joints of the palpi fuscous. The lower part of face and metapleuræ covered with long glistening white hairs. Centre of the petiole transverse at the apex, the base narrowed; the surrounding furrow broad, moderately deep. Second segment curved, the sides covered with longish white hair; second and the following segments without any depressions, the suturiform articulation narrow, curved.

X 19. *Bracon albispina*. (Tab. XIII. fig. 15.)

Rufo-testaceus; antennis, apice femorum, tibiis tarsisque anterioribus, apice tibiæ tarsisque posterioribus, nigris; alis fuscescentibus, stigmatibus fuscis; articulatione suturiformi vix sinuata. ♀.

Long. 7 millim.; terebra 1.5 millim.

Hab. MEXICO, Valladolid in Yucatan (*Gaumer*), Presidio (*Forrer*).

Antennæ scarcely so long as the thorax and abdomen together, fuscous on the lower side towards the apex; basal joint four times longer than the second, shining, glabrous; the flagellum microscopically pilose; the third and fourth joints subequal. Face

rugose, broadly, but largely, projecting in the middle; front slightly depressed above the antennæ; a broad and deep furrow leading down from the ocelli, which are surrounded by a narrower triangular one. Face, prosternum, metathorax, and coxæ covered with long white hair, the abdomen and legs with shorter hair. Metathorax with a gradual rounded slope to the apex, the apex with a raised border. Petiole deeply depressed in the middle at the basal fourth; the raised central mass narrowed at the base, the apex rounded; inner furrow wide, the outer one placed below the raised margin. The suturiform articulation moderately deep and wide, curved. There are no depressions on any of the segments, which are shining, impunctate, and depressed at the base. The abdomen is a little longer and not much wider than the thorax, and becomes gradually narrowed from the third segment to the apex. The apices of the four front femora, their tibiæ and tarsi, the apices of the hind tibiæ, and the hind tarsi, are black; the base of the tibiæ and the spurs white. The cubital nervure is slightly angled at the base, and the recurrent nervure received a little in front of the transverse cubital one.

The amount of black on the legs varies, and the abdominal segments are sometimes streaked transversely with obscure yellow.

20. *Bracon forreri*.

Rufo-testaceus; antennis, apice tibiæ posticarum tarsisque, nigris; alis fuscescentibus, stigmate fusco; articulatione suturiformi recta.

Long. 8 millim.

Hab. MEXICO, Presidio (*Forrer*).

Antennæ as long as the body, moderately stout; densely, microscopically pilose; the joints very closely articulated; scape reddish beneath. Head shining, impunctate above, the face not so shining, and obscurely and longitudinally striated; moderately depressed above the antennæ, the central furrow deep; ocelli surrounded by a furrow; a wide, not very deep, furrow down the sides of the cheeks; tips of the mandibles black; palpi pale. Thorax shining, impunctate; scutellum narrowed towards the apex, but not sharply, the sides distinct; metanotum with a gradual slope to the apex; a furrow along the sides of the metapleuræ, originating in a deep fovea. Abdomen shining, impunctate; central area of the petiole comparatively small, the inner furrow broad and with a wide outer border; segments deeply separated, the second without depressions. Cubital nervure at the base broadly curved; the recurrent nervure received a little in front of the transverse cubital one; the second cubital cellule much shorter than the third.

The group of *B. ALTICOLA*.

Abdomen aciculate, the second segment in the middle rugosely punctured. Metanotum keeled in the middle, rugose on either side of the keel. Eyes oblong, reaching to the base of the clypeus.

+ 21. *Bracon alticola*.

Niger; mandibulis, abdomine pedibusque rufo-testaceis; tibiis intermediis, tibiis tarsisque posticis, nigris, tarsis anticis fuscis; articulatione suturiformi recta; alis fere fuscis, stigmatate et nervis testaceis, cellula cubitali 2^a quam 3^a brevior. ♀.

Long. 4.5 millim.; terebra fere 2 millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

Antennæ stout, scarcely attenuated towards the apex; the flagellum densely covered with a microscopic pile. Head shining, the face aciculate, bearing some pale hairs; clypeus at the base almost transverse; trophi large, dull testaceous. Thorax shining, impunctate, the pleuræ and metanotum covered with longish white hair; parapsidal sutures large, deep; a wide, transverse, longitudinally keeled furrow in front of the scutellum. Petiole vertical, deeply excavated at the base, aciculate, the inner furrow wide and deep and rounded at the base and apex; the petiole above and the punctured central part of the second segment black; the base of the second segment distinctly margined. The cubital nervure is but slightly curved, the recurrent nervure is interstitial; the first transverse cubital nervure is very oblique, so that the upperside of the second cubital cellule is much shorter than the lower. The legs are densely covered with pale hairs; the spurs are testaceous; the anterior coxæ are black at the base.

The smallest species of *Bracon* known from our region.

ii. *Abdomen punctured.*The group of *B. HEBES*.

Abdomen finely and closely punctured all over. Head shining, the face obscurely aciculate. Eyes oval, not reaching to the base of the clypeus.

Differs from the other groups with punctured abdomen in the punctuation being very close and fine.

+ 22. *Bracon hebes*.

Rufo-testaceus; flagello antennarum nigro; alis fumatis, stigmatate sordide testaceo; articulatione suturiformi recta. ♀.

Long. 4.5 millim.; terebra 1.5 millim.

Hab. MEXICO, Presidio (*Forrer*).

Antennæ 39–41-jointed, longer than the body, microscopically pilose. Head sparsely

pilose; frontal furrow narrow, shallow; palpi longish, pale testaceous. Parapsidal furrows not deep; a shallow, not very distinct, furrow runs down the centre of the metanotum. Petiole semiperpendicular, shining, impunctate. The abdomen is about the length of the head and thorax united. The recurrent nervure is nearly interstitial; the second cubital cellule shorter than the third. The hind tarsi are more or less blackish.

The group of *B. DEMOCRATICUS*.

Abdomen irregularly, longitudinally punctured; central part of the petiole shield-shaped, not narrowed at the apex, the apex transverse; second segment without any depressions, and with a smooth, triangular area at the base; suturiform articulation wide, deep, longitudinally striated. Abdomen (in the female) shorter than the head and thorax united, and wider than the thorax. Eyes oval, reaching to the apex of the clypeus.

- 1 (2). Head and legs luteous. *blandicus*.
- 2 (1). Head and legs black, wholly or in part.
- 3 (4). Head and legs entirely black; the area on second segment shield-shaped, as broad as long *democraticus*.
- 4 (3). Head and legs partly black; the area on second segment much longer than broad (males only are known).
- 5 (6). Abdomen much longer than the head and thorax united; suturiform articulation not striolated; ocelli not enclosed in black *comparatus*.
- 6 (5). Abdomen scarcely longer than the head and thorax united; suturiform articulation striolated; ocelli broadly surrounded with black. *crudelis*.

X 23. **Bracon blandicus.** (Tab. XIII. fig. 17.)

Info-testaceus; antennis nigris; apice tibiaram posticarum tarsisque fuscis; alis fuscescentibus, stigmatibus fusco; terebra corporis longitudine.

Long. 7 millim.; terebra fere 7 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ originating from distinct tubercles, scarcely so long as the thorax and abdomen together; basal joint dilated at the apex, slightly curved on the lower side, about three times as long as the second; third and fourth joints subequal. Face shining, impunctate; front but slightly dilated above the antennæ; central furrow indistinct. Metanotum with a gradual slope to the apex. Petiole smooth, impunctate; the central part broad and depressed at the base; inner furrow broad and deep, its outer margin acute, the outer furrow narrower, situated lower down than the inner, and becoming narrower towards the base. Segments 2-4 irregularly reticulated, the apical ones impunctate; first furrow narrow, moderately deep, nearly straight. The recurrent nervure is interstitial; the second cubital cellule much shorter than the third.

X 24. **Bracon democraticus.** (Tab. XIII. fig. 19.)

Ferrugineus; antennis, capite pedibusque, nigris; alis fuliginosis, stigmatе nigro.
Long. 7 millim.; terebra 5.5 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Face finely and closely punctured, a semicircular, shining, impunctate space over the clypeus; the depression over the antennæ shallow, the furrow narrow. The two furrows of the petiole punctured somewhat closely, and of nearly equal width. Second segment coarsely and longitudinally striated (some of the striations being much stronger than others), a smooth, shining, impunctate, triangularly shaped space at the base, the apex shining and impunctate; third segment longitudinally striated like the second, the fourth segment broadly so in the middle; the suturiform articulation broad, longitudinally striated. The abdomen is scarcely so long as the thorax, the petiole at the base is semiperpendicular. The recurrent nervure is received a little in front of the transverse cubital nervure.

X 25. **Bracon comparatus.**

Luteus; antennis, femoribus tibiisque posterioribus, nigris; alis fumatis, stigmatе testaceo. ♂.
Long. 8.5 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ tapering towards the apex, originating from distinct tubercles; basal joint a little more than three times the length of and one half thicker than the second, the apex obliquely truncated; the joints of the flagellum indistinctly separated; third and fourth joints subequal. Face shining, impunctate; front but slightly depressed above the antennæ. Metathorax with a gradual slope to the apex. Abdomen nearly double the length of the thorax, sessile; petiole one half longer than the second segment; flat, the central part tongue-shaped (not reaching to the apex of the petiole), the apical part narrower and keeled in the centre, the furrows shallow; the first transverse furrow is indicated, but not very distinctly; the petiole is shining, impunctate, the rest indistinctly reticulated.

26. **Bracon crudelis.**

Luteus; femoribus, tibiis tarsisque pro majore parte antennisque, nigris; alis fumatis, stigmatе fusco; articulatione suturiformi recta, striolata.
Long. 7 millim.

Hab. MEXICO, Northern Sonora (*Morrison*).

Antennæ as long as the body, nearly glabrous, the joints distinctly separated; basal joint three times as long as the second, slightly curved beneath, the apex semiobliquely truncated; third joint a little longer than the fourth. Face shining, obscurely punctured; front depressed above the antennæ, the furrow not very deep; ocelli surrounded by a

black patch. Metathorax with a gradual slope to the apex. Abdomen sessile; petiole shining, impunctate, the raised part 3-angled, transverse at the apex, narrowed to a point at the base, a straight keel running down the side, the furrow on the inner side of this broad (there is none on the outer); segments 2-4 obscurely punctured and reticulated, the apical ones shining and impunctate; a deep, obscurely reticulated furrow at the apex of the second segment.

Almost similar in coloration to *B. comparatus*, but easily known from that species by the much shorter abdomen, the less excavated front, and the longitudinally striolated suturiform articulation.

iii. *Abdomen striated.*

The group of *B. MONTIVAGUS*.

Abdomen strongly longitudinally striated, except at the apex; longer than the head and thorax united; central part of the petiole rounded and narrowed behind; an oblique depression on each side of the second segment, a sharp keel down the centre; suturiform articulation transverse, wide, deep, strongly longitudinally striated. Eyes oblong, just reaching to the apex of the clypeus.

27. ***Bracon montivagus.*** (Tab. XIII. fig. 16.)

Rufus; antennis pedibusque nigris; coxis posterioribus femoribusque posticis rufis; articulatione suturiformi recta; alis fuliginosis, stigmatibus nigris; terebra quam corpus longiore.

Long. 10 millim.; terebra 10.5 millim.

Hab. MEXICO, Ciudad in Durango 8100 feet (*Forrer*).

Antennæ a little shorter (9 millim. in length) than the body; of nearly uniform thickness; the flagellum covered with a very short microscopic pile, the scape more shining and sparsely clothed with longish hair; third joint nearly one fourth longer than the fourth. Head shining, the face almost impunctate, the front not much depressed above the antennæ, the central furrow indistinct; ocelli surrounded by a moderately deep furrow; apex of the mandibles and palpi black. Thorax shining, impunctate, the metanotum irregularly reticulated; scutellum triangular, the sides broadly, and not very distinctly, keeled. Petiole longitudinally reticulated and striated, the broad inner furrow transversely striated, the outer furrow equally broad and similarly striated and perpendicular. Second segment coarsely longitudinally striated, most strongly at the base, where there is a small triangular, impunctate, shining space; an oblique depression on each side at the base; the third and fourth segments longitudinally striated, but not so coarsely as the second, their apices shining, impunctate, as are also the apical segments; the transverse furrow deep, wide. The recurrent nervure is interstitial; the cubital nervure from the second transverse cubital cellule curves obliquely downwards, thus making the third cubital cellule rather wide.