

the back of the head and vertex are black, the rest yellow, except the tips of the mandibles, which are black. Thorax punctured; scutellum flat, the sides keeled, the apex rounded, the upper part punctured, the punctures wider apart and larger than on the mesonotum. Metathorax flat, broad above, opaque, finely rugose, the apex with large coarse punctures, suboblique, the centre scarcely hollowed; the supramedian area obsolete. The tegulæ are white behind; the edge of the pronotum is white throughout; in the middle of the mesonotum are two short white lines. The apical half of the scutellum, the postscutellum, a small mark on either side at the base, and two large pear-shaped marks at the apex of the metanotum, a larger mark on the pleuræ, and the pro- and mesosternum yellow, the sutures of the latter, however, being black. Petiole aciculate; postpetiole coarsely rugulose, black, the sides excepted. Abdomen rather long, closely and longitudinally punctured. Gastrocoeli large, broad, aciculate; the sides striated. The four anterior legs are entirely yellow on the underside; the coxæ wholly yellow; the posterior coxæ black, yellow at the base above and beneath; the hind trochanters are, for the greater part, black; the femora reddish beneath, except at the apex; the hind tibiæ black, except in the middle beneath; hind tarsi entirely black. Areolet scarcely 5-angled, the lateral nervures being almost united at the top.

16. *Ichneumon totanacus*.

Ichneumon totanacus, Cresson, Trans. Amer. Ent. Soc. ii. p. 10; Proc. Acad. Phil. 1873, p. 111¹.

Hab. MEXICO, Orizaba ¹.

17. *Ichneumon otomitus*.

Hoplismenus otomitus, Cresson, Trans. Amer. Ent. Soc. ii. p. 21¹.

Ichneumon otomitus, Cresson, Proc. Acad. Phil. 1873, p. 112.

Hab. MEXICO, Orizaba ¹.

18. *Ichneumon chiapus*.

Ichneumon chiapus, Cresson, Proc. Acad. Phil. 1873, p. 112¹.

Hab. MEXICO, Cordova ¹.

19. *Ichneumon curiatus*.

Ichneumon curiatus, Cresson, Proc. Acad. Phil. 1873, p. 112. no. 7¹.

Hab. MEXICO, Orizaba ¹.

20. *Ichneumon dilucidus*.

Ichneumon dilucidus, Cresson, Proc. Acad. Phil. 1873, p. 112. no. 8¹.

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

What I take to be this species differs from *I. phædra* in the stigma (the colour of

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which is not mentioned by Cresson) being black with a ferruginous tinge; the costa is also blackish; the areolet as in *I. phædra*; there are no tubercles on the metanotum; the abdomen is longitudinally aciculate; the middle of the postpetiole is more distinctly separated from the sides; the pubescence is denser on the pleuræ; and is altogether a broader and stouter insect. The body is entirely ferruginous.

21. *Ichneumon phædra*.

Ferrugineus; facie orbitisque oculorum flavis; flagello antennarum, linea ad basim scutelli, metanoto abdominisque segmento 3^o nigris; alis fulvo-hyalinis.

Long. 17 millim.

Hab. GUATEMALA, Purula (*Champion*).

Body covered with a close fuscous pubescence, which is longest on the thorax. Head slightly, the mesonotum more strongly and closely punctured; pleuræ obscurely striated. Scutellum a little broader than long, the sides carinate in front, the apex rounded and prominent; postscutellum distinct, broader than long, rounded at either side, smooth, shining, scarcely punctured. Metathoracic areæ distinct, all clearly defined; lateral tubercles blunt. Petiole smooth, shining, impunctate, except for one or two punctures along the sides, which are indistinctly keeled. Postscutellum closely punctured like the thorax. Abdomen closely and strongly punctured; the base of the anterior segments longitudinally striated; all the segments constricted at the base. Wing nervures blackish; costa and stigma obscure testaceous, the latter darker at the apex; areolet triangular above. The antennæ are not much longer than the abdomen.

22. *Ichneumon sycophantus*. (Tab. VII. fig. 8.)

Ferrugineus; facie orbitisque oculorum flavis, flagello antennarum, lineis ad basim scutelli, metathorace abdominisque segmentis 1^o–5^m nigris, alis fulvo-hyalinis, stigmate fusco. ♂.

Long. 18 millim.

Hab. GUATEMALA, Purula (*Champion*).

This species differs from *I. phædra* as follows:—The middle of the postscutellum is not punctured (the sides in *I. phædra* being punctured), but finely striated; the gastrocoeli are larger; the base of the petiole, and a transverse band on the second, third, fourth, and fifth segments are black; the surface of the metathorax is rougher, thereby rendering the areæ less clearly defined, and the lateral tubercles are, if anything, larger; the coxæ are more coarsely punctured; the lateral nervures of the areolet do not touch above; and the stigma is fuscous, not testaceous.

23. *Ichneumon subfumatus*.

Testaceus; antennarum apice nigro, medio flavo, basi fusca; alis fere fumatis, stigmate sordide testaceo. ♀.

Long. 15 millim.

Hab. GUATEMALA, Zapote (*Champion*).

Antennæ nearly as long as the abdomen and thorax together, subinvolute and thickest at the apex, stout, the third joint nearly one fourth longer than the fourth, the scape ferruginous. Face flat, eyes margined; the middle of the face, and the orbits yellowish. Head punctured, the punctures rather large. Mesonotum longitudinally strongly punctured; the pleuræ less strongly, and if anything more closely punctured, and more shining. Scutellum but slightly raised above the scutum, the sides subcarinate, the upper part flat and covered with large punctures, which form longitudinal rows. Metanotum closely punctured, the tubercles short; the upper median area broader than long, rounded behind, truncated in front; the sides of the lower median area not very clearly indicated. Petiole smooth and shining, the sides inclining to yellow; post-petiole finely aciculate. Abdomen shining, the apex acute; gastrocœli flat, aciculate, the sides striated; the rest of abdomen punctured, but not strongly, all over. Legs stout, the coxæ punctured, the apices of the tarsal joints black.

A larger species than *I. lariceus*, with the abdomen longer and much more acutely pointed; the colour, too, is paler, and the punctuation is not so strong, except on the scutellum; the base of the flagellum is fuscous; the wings are darker and longer; and the antennæ are also longer. *I. dilucidus* is a larger insect with the wings clearer; the scutellum more sharply raised over the scutum, and with its sides much more distinctly carinate, the punctuation closer; and the abdomen longitudinally striated.

24. **Ichneumon lariceus.** (Tab. VII. fig. 9.)

Ferrugineus; antennarum medio albo, apice brunneo; alis fusco-hyalinis, nervis fuscis, stigmatibus fusco, basi albo.

Long. 10 millim.

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

Head and thorax closely punctured all over, and covered with a white pubescence. Scutellum smooth, almost impunctate, shining, not much raised above the scutum, narrowed towards the apex; a keel running from the mesonotum at the end of the fovea at its base to the middle of the scutellum. Metathoracic areæ all well defined, the supramedian area horseshoe-shaped, the middle of the metanotum slightly excavated; lateral tubercle not very large. Petiole distinctly keeled along the sides above; the apex longitudinally and finely striated. The rest of abdomen closely punctured like the thorax; apex bluntly acuminate; sheath of ovipositor projecting, black. Gastrocœli obsolete. Areolet 5-angled, bullæ distinct. Legs robust, covered with a white pubescence; coxæ closely punctured. Antennæ stout, involute; third and fourth joints subequal.

I. dilucidus comes very near the present species, but differs in being larger, in having the abdomen longitudinally aciculate, the stigma quite black, the areolet converging above, &c. Its smaller size, half fuscous and half white stigma, and obsolete gastrocœli distinguish it from *I. phædra*.

25. *Ichneumon veræpaxis*.

Ferrugineus; apice antennarum nigro, medio palpisque albidis; alis fere hyalinis, stigmatè pallide flavo. ♀. Long. 8 millim.

Hab. GUATEMALA, Panima (*Champion*).

Antennæ stout, becoming gradually thicker towards the apex, involute; the third joint a little longer than the fourth; joints seven to sixteen white, the following black. Head tumid, closely punctured, sparsely covered with a short white pubescence; tips of the mandibles blackish. Thorax closely punctured; the pleuræ (including the sides of the pronotum) coarsely and longitudinally striated. Scutellum smooth, shining, scarcely punctured, the sides carinate, narrowed towards the apex. Metanotum punctured and transversely striated; upper median area longer than broad, harp-shaped; middle of the metanotum hollowed; lateral tubercles large, more than double as long as broad. Petiole smooth, shining, the sides keeled; postpetiole finely punctured. The rest of the abdomen smooth, shining, microscopically punctured; the second segment more strongly punctured at the sides; the sides and apex covered with rather long pale pubescence. Sheath of ovipositor black. Areolet 5-angled, the upper part narrower. The costa is fuscous black.

Closely allied to *I. lariceus*, but smaller and narrower, and easily known from it by the strongly striated pleuræ, longer tubercles on the metanotum, almost impunctate abdomen, and pallid yellow stigma; the wings, too, are clearer, and the areolet is longer and more narrowed above. In *I. subpinguis*, a species resembling this in coloration, the antennæ are much longer, not so stout, and not involute; the metathoracic tubercles almost obsolete, the pleuræ not striated, and the stigma black.

I. veræpaxis is certainly very closely related to *I. ablutus*, but, I think, distinct from that species; all the nervures, for instance, in *I. ablutus* are said to be honey-yellow, while the costa and the nervures in *I. veræpaxis* are fuscous black; neither can the words "yellowish brown" be applied to the base of the antennæ; nor is the term "shagreened" applicable to the strongly punctured and striated thorax of the species just described.

26. *Ichneumon ablutus*.

Ichneumon ablutus, Cresson, Proc. Acad. Phil. 1873, p. 113. no. 9¹.

Hab. MEXICO, Orizaba¹.

27. *Ichneumon passirus*.

Ichneumon passirus, Cresson, Proc. Acad. Phil. 1873, p. 113. no. 10¹.

Hab. MEXICO, Orizaba¹.

28. *Ichneumon frivolus*.

Ichneumon frivolus, Cresson, Trans. Am. Ent. Soc. ii. p. 11; Proc. Acad. Phil. 1873, p. 113. no. 11¹.

Hab. MEXICO, Orizaba, Cordova¹.

29. Ichneumon subpinguis.

Niger; flagello antennarum nigro, medio albo, apicibus tiliarum et tarsorum nigris; alis hyalinis, nervis et stigmate nigris. ♀.

Long. 9 millim.

Hab. GUATEMALA, Cerro Zunil 4000 feet (*Champion*).

Antennæ longish, as long, if not longer, than the body, scarcely tapering towards the apex. Head closely punctured, the face with a broad, flattish carina (broadest at the apex) in the middle. Eyes margined, bordered with yellow in the middle in front and behind. Thorax punctured all over, covered with a white silvery pubescence; the edge of the pronotum, and the tubercle below the tegulæ clear yellow; postscutellum large, smooth, shining, with scarcely any punctures, its sides (as are also the sides of scutellum) carinate. Mesopleuræ hollowed posteriorly. Postpetiole broad, finely aciculate. Gastrocoeli large, striated. Abdomen broad, its apex somewhat acute; punctured, except at the apex, which is rather aciculate; the punctures distinctly separated. Metathoracic areæ all defined; lateral tubercle obtuse. Legs stout, longish; coxæ punctured. Areolet converging somewhat above, but the nervures do not touch; the recurrent nervure is received nearer the base than apex.

I. frivolus is perhaps the male of the present species; but it is stated to have the tarsi pale ferruginous, the cheeks prominent, and the sutures of the pleuræ and the base of the metathorax black.

30. Ichneumon eros. (Tab. VII. fig. 14.)

Hab. GUATEMALA, Volcan de Agua 8500 to 10,500 feet (*Champion*).

In coloration this species is identical with *I. subpinguis*, except that the apices of the hind tibiæ and of the tarsi are not black, and that there is no trace of yellow on the pronotum. The antennæ are similar in form, but, if anything, thicker at the apex; they are also ferruginous, except at the apex, which is broadly black, and the four joints in front of the black apical joints, which are yellowish white; they are nearly as long as the body. The eyes are bordered with yellow. The face projects in the middle, and the clypeus projects still more, being separated from the part above it by a transverse depression. Head and thorax finely punctured; the pleuræ at the posterior end obscurely and longitudinally striated. Scutellum aciculated, convex, broad on the disc, the sides carinate, the keels meeting on the upper part behind, but they are not very distinct at the place of union. Metanotum obscurely rugose at the base, aciculate at the apex; all the areæ clearly defined; the upper median area a little broader than long, the anterior part rounded; lateral tubercles conspicuous. Postpetiole broad, finely punctured, the centre not raised. Gastrocoeli transverse, broader than long, smooth, shining; the extreme base of the second segment forms a ridge, with a transverse furrow at its apex, uniting the gastrocoeli. Abdomen opaque, finely punctured. Areolet nearly converging above; stigma black.

The antennæ, flattened and dilated at the apex, remind one of *Joppa*, but in other respects this species agrees best with the genus *Ichneumon*.

31. *Ichneumon carinifrons*.

Ferrugineus; antennarum annulo facieque flavis; flagello antennarum (annulo excepto), abdominis segmentis 2^o-4^m basi, tarsis posticis tibiæque apice nigris; alis fusco-hyalinis, nervis fuscis, stigmate sordide rufo. ♀. Long. 15 millim.

Hab. MEXICO (*Bilimek*); PANAMA, Volcan de Chiriqui (*Champion*, ♂?).

Antennæ as long as the abdomen and half of the thorax, thickened a little beyond the middle, but narrowed again towards the apex, semiconvolute; the base reddish. Head punctured, not buccated; the face with a broad keel down the centre, the keel becoming broader towards the apex. Palpi reddish. Mesonotum closely and coarsely punctured. Scutellum not projecting much above the mesonotum, but raised a good deal higher than the postscutellum; laterally it is raised considerably above, and clearly separated from the mesonotum; its sides are distinctly keeled throughout, the keels projecting over the sides; it is strongly punctured. Pleuræ less strongly punctured than the mesonotum. Metathorax broad above, with an abrupt slope at the apex, which has a strong blunt tooth on each side; areæ obsolete. Petiole smooth, shining, hollow in the centre above, the sides carinate; postpetiole strongly punctured on its apical half. Abdomen closely and strongly punctured all over above, longer than the head and thorax together. Gastrocoeli distinct, deep, broader than long. Areolet 4-angled, the lateral nervures joined above.

This species comes very near to *I. sycophantus*, but is smaller; the latter has not the areolet triangular above, its wings have a violaceous tinge, and are more uniformly fuscous [the fuscous tinge in *I. carinifrons* being only noticeable at the stigma]; the keel on the face is not so clearly defined; the scutellum is shorter, and has not such an abrupt slope at the apex; the metathoracic areæ are distinct, and the whole, not the apex only as in *I. carinifrons*, of the postpetiole is punctured.

What appears to be the male (from the Volcan de Chiriqui) has the antennæ black, except the scape; the suture separating the meta- from the mesonotum is black; the black bands on the abdomen are broader; and the stigma is much darker, especially at the apex. It may, however, be the male of another species.

32. *Ichneumon celatus*. (Tab. VII. fig. 13.)

Ferrugineus; facie scutelloque flavis; abdominis segmentis 3^o-5^m cingulo basali, linea pleurali, coxis posticis subtus, femorum posticorum apice tibiæque posticarum apice nigris; antennis nigris, basi et medio pallide rufis; alis hyalinis, stigmate testaceo. Long. 13 millim.

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

Head and thorax rather strongly punctured; scutellum shining, obsoletely punctured, large, broader than long, slightly elevated. Metathoracic areæ not very clearly

defined; a blunt, not very distinct, tubercle on each side. Petiole shining, smooth, the apex finely striated and punctured; the sides keeled; the sides of the postpetiole depressed above. The rest of the abdomen punctured all over, but not so strongly as the thorax. Gastrocoeli large, a little longer than broad, finely punctured. Coxæ strongly, femora finely punctured. The black line on the pleuræ runs obliquely from the tegulæ to the posterior coxæ. The petiole is black on the underside and at the extreme base above. The bands on the third to fifth segments go all round, and occupy about one third of the entire segment. As with most of the species the excavated space above the antennæ is smooth and black. The body is covered with a griseous, sparse pubescence. Antennæ one half longer than the head and thorax together, tapering towards the apex; the joints beyond the middle produced beneath; third joint about one third longer than the following. Areolet 5-angled.

Closely allied to *I. maculipleuralis* and *I. sycophantus*, but easily separated from those species by the black apices of the posterior femora and tibiæ. Compared with the latter, the scutellum is broader and flatter, and the antennæ have a pale reddish band in the centre.

33. *Ichneumon forreri*. (Tab. VII. fig. 15.)

Ferrugineus; flagello antennarum fusco, lineis pleuralibus, metathoracis basi et apice, petiole subtus, trochanteribus, femorum posticorum apice tibiæque posticarum apice late nigris, tarsis posticis fuscis; alis fuscis, stigmate nigro, basi albo. ♂.

Long. 8 millim.

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

Head and thorax finely and closely punctured, and covered with a white pubescence; the punctures wider apart and longer on the pleuræ. Head not dilated behind the eyes; the front broadly, but not largely, projecting in the centre; clypeus with a few widely separated punctures. Scutellum not raised above the level of the mesonotum; the depression at its base deep and wide; the upper part bearing distant punctures; the carinæ scarcely extending on to the sides of the scutellum; it is a little longer than broad, somewhat narrowed towards the apex. Metathorax with a gradual slope, shagreened-punctured; the areæ clearly defined; the supramedian area rounded above, very slightly dilated in the middle at the sides, and at the apex indented by the lower area, which occupies the whole of the front of the metanotum, and is rougher in texture than the rest. Lateral tubercles acute. Petiole smooth and shining; postpetiole aciculated. Abdomen closely and finely punctured all over. Gastrocoeli completely obsolete. The antennæ are nearly as long as the thorax and abdomen together; the underside of the flagellum at the apical half is brownish; the upperside of the scape is marked with black. The prosternum is almost entirely black; the mesosternum is broadly black at the base and narrowly black at its junction with the metasternum, which is also black; the sutures between the meso- and metapleuræ, the scutum at the side of the scutellum, and the space above the suture between the meso- and

metanotum are broadly black. Areolet 5-angled; the lateral nervures but slightly converging above.

This is a smaller species than either *I. celatus*, or *I. jalapensis*; the former has the metanotum much more hollowed in the middle, the gastrocoeli visible, although not very distinct, and it differs otherwise in coloration; the latter has the gastrocoeli very distinct, and the tibiæ and tarsi white.

34. *Ichneumon jalapensis*.

Ferrugineus; antennis pro majore parte, facie, scutello, tibiæ posticarum dimidio basali tarsisque posticis flavis; geniculis posticis tibiæque posticarum apice late nigris; alis hyalinis, nervis nigris, stigmatibus nigro, basi albo.

Long. 10 millim.

Hab. MEXICO, Jalapa (*Bilimek*).

Antennæ as long as the thorax and abdomen together, stout, covered with a microscopic pile, the base and apex darker than the central parts, which are distinctly yellowish. Head finely punctured, and with a broad, flat ridge down the centre of the face. Thorax coarsely punctured. Scutellum rounded, broader than long. Metathorax coarsely punctured, the areæ all defined, a tubercle on each side, and the apex with a rounded gradual slope. Postpetiole rather strongly punctured, the sides depressed; base of second segment with longitudinal broad striations, its apex black. Gastrocoeli large, coarsely striated, rest of abdomen closely punctured. Areolet 5-angled, the sides but slightly converging above.

35. *Ichneumon tumidulus*. (Tab. VII. fig. 12.)

Ferrugineus; abdominis segmentis 3° et 4° basi, tibiæ posticarum apice tarsisque posticis nigris; antennis nigris, medio albo, basi late rufa; alis flavo-hyalinis; nervis testaceis.

Long. 12 millim.

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

Head rather tumid, not very largely excavated above the antennæ, finely punctured. Thorax closely and rather coarsely punctured, the punctures running into striæ on the pleuræ and mesonotum. Pronotum in front raised into a conspicuous margined ridge, and in front of this, and touching the head, is a smaller ridge, forming between them a large (comparatively) furrow, which widens as it reaches the sternum, and is transversely striated. Scutellum large, broader than long, rounded and narrowed behind, not much raised above scutum. Metathorax large, rounded behind, the middle slightly excavated; the areæ not clearly defined; a well-defined keel over the excavated apex, and a blunt tubercle at the side on this keel. Postpetiole broad, finely striated, the sides scarcely depressed. Gastrocoeli rather small, deep at base, finely punctured; the rest of the abdomen finely and closely punctured; the apex acute; cerci long, conspicuous; ovipositor projecting beyond them, black. Coxæ rather strongly punctured; femora less so; posterior coxæ excavated on outside, the hollow transversely striated. The suture between the meso- and metapleuræ is broadly black. Legs and antennæ stout; the

latter involute, the joints thick, a little longer than broad; third joint a very little longer than the fourth. The bases of the joints of the black posterior tarsi are dull testaceous, or sometimes entirely testaceous. Areolet 5-angled, broad above.

This species is closely related to *I. maculipleuralis*, but is a smaller and less robust insect, the petiole is smaller, and the gastrocœli are smaller and not striated round the edges; the punctuation of the abdomen is stronger, and its apex is more acute; the terebra and cerci are longer, and the posterior tibiæ are black at the apex.

36. *Ichneumon curtituberculatus*. (Tab. VII. fig. 11.)

Ferrugineus; apice antennarum abdominisque segmentis 3^o et 4^o basi nigris, flagello antennarum medio flavo; alis flavo-hyalinis, nervis et stigmatibus flavis. ♀.
Long. 11 millim.

Hab. MEXICO, Guadalupe (*Bilimek*).

Head and thorax strongly, the abdomen very finely and closely, punctured. Scutellum raised a little above the mesonotum, carinate at the base, longer than broad, narrowed towards the apex. Metathoracic areæ all well marked; supramedian area longer than broad, the middle angled, projecting a little, scabrous. The base of the metanotum is bordered with black, and the apex of the pronotum is yellow. Petiole smooth and shining, bicarinate at the sides; postpetiole broad, finely and longitudinally striated.

Comes very near *I. tumidulus*, but that species may be known from *I. curtituberculatus* by its scutellum being broader than long, flatter, not so strongly punctured, and yellowish in colour; the supramedian area longer, narrower, and with the sides quite parallel; the abdomen longer and more sharply pointed at the apex; and the apices of the hind tibiæ broadly black.

37. *Ichneumon maculipleuralis*.

Ferrugineus; thorace et abdomine nigro lineatis; alis flavo-hyalinis, nervis fuscis, stigmatibus testaceo. ♀.
Long. 17 millim.

Hab. MEXICO (*Sallé*).

Head subbuccate, excavated above the antennæ, the excavated part black, smooth, and shining. Vertex shagreened; face more shining, bearing shallow scattered punctures, and sparsely covered with white hair. Eyes surrounded by a furrow all round, the head projecting behind them; vertex, and sides above, covered with a fuscous pile. Thorax covered with shallow punctures, almost shining. Metapleuræ striated, the suture crenulated. Scutellum flatly convex, broadly rounded behind and before; the apex rounded, narrower than the base, and covered with shallow scattered punctures; a deep furrow at its base; postscutellum separated from it by a suture. Metathorax closely punctured, large, the disc with a gentle slope, the apex subvertical, retreating in the centre; the metathoracic areæ obsolete, the lateral keels only being faintly indicated. Petiole smooth, shining, the sides keeled at the top and bottom: the keels do not

extend to the broad apex, which is longitudinally striated in the centre and punctured at the sides; the following segment of the abdomen is closely punctured all over and striated at the base; the next slightly punctured; the following scarcely punctured; the apical impunctate, smooth, and shining. Gastrocoeli large, a semiopaque furrow at the bottom; the upper (and inner) side strongly striated. The thorax and abdomen are covered with a greyish pubescence. The following parts are black:—the sternum entirely, the sutures of the pleuræ, the space above the coxæ, the pronotum on the disc in front, the scutellum and postscutellum all round, the lower part of the metanotum, the third, fourth, and fifth abdominal segments at the base above, and the sheath of the ovipositor at the apex. Legs stout. Coxæ obscurely punctured; the posterior pair hollow on their outer side. Areolet 5-angled, longer than broad; recurrent nervure received nearer the apex than base.

A stout robust species.

38. *Ichneumon platyaspis*.

Hab. MEXICO, Chapultepec (*Bilimek*).

In size and sculpture this species agrees with *I. maculipleuralis*, as it does also in coloration, except that there is no black on the thorax, while the apices of the posterior tibiæ are black. The face is densely covered with reddish-yellow hair, which almost hides the punctuation. The pleuræ are neither so shining nor so smooth; the mesopleuræ are longitudinally striated on the lower side. The supramedian area of the metathorax is broader, and the gastrocoeli are shallower and much less distinct.

39. *Ichneumon impudicatus*.

Ferrugineus; facie, orbitis oculorum, abdominis segmentis 1^o–4^m, apice coxisque anterioribus subtus, flavis; abdominis segmentis 2^o–4^m basi nigris; tarsis pallide flavis; alis hyalinis, nervis et stigmate ferrugineis. ♀.

Long. 16 millim.

Hab. MEXICO (*Bilimek*).

Head somewhat dilated behind the eyes; the face bluntly projecting in the middle, and closely punctured all over. Thorax coarsely punctured all over; closely covered with a black or fuscous pubescence on the disc, the sides with paler pubescence. There are two furrows in front of the mesonotum running to the pronotum. Scutellum convex, narrowed behind, the sides in front bluntly carinate. Metanotum with a gradual slope, depressed in the centre, coarsely punctured, the punctures running into reticulations at the sides and apex. The upper median area is a little broader than long, the sides dilated in the middle, the apex open; the lateral keels of the supramedian area, and the lateral tubercle also, are almost obsolete. Petiole carinate, the postpetiole depressed, at the sides; both are smooth, shining, and obscurely aciculate. Gastrocoeli deep, longer than broad, contracted at the base, and coarsely striated. The remaining abdominal segments are coarsely and closely punctured all over; the black band on the second

segment is broad, and occupies more than two thirds of the surface, the other bands are narrower.

The antennæ, except the scape and the two basal joints of the flagellum, are unfortunately wanting in the single specimen before me; the former is ferruginous in colour; the latter black, reddish beneath. The tegulæ, the tubercle below them, the sutures of the pleuræ, the mesosternum, the apex of the scutellum, and the postscutellum are yellowish. The metanotum behind has a yellowish tinge.

Compared with *I. platyaspis*, the present species has a longer and narrower abdomen, the metanotum is not so much hollowed in the centre, the postpetiole is not longitudinally striated, and the scutellum is much more convex; the same characters separate it equally well from *I. maculipleuralis*. The form of the areolet is nearly the same in the three species.

40. *Ichneumon consanguineus*.

Rufo-testaceus; flagello antennarum, vertice lineisque 2 mesonoti nigris; alis hyalinis, nervis nigro-fuscis. ♂. Long. 14 millim.

Hab. MEXICO (*Sallé*).

Head subbuccate, obscurely punctured, deeply excavated above the antennæ, the excavation smooth, shining, and divided in the middle. Thorax punctured. Scutellum subconvex, but little elevated, smooth, shining, impunctate, the sides arcuate. Metanotum with the areæ obsolete; a short blunt tubercle on each side. Petiole smooth, shining; postpetiole punctured, a slight furrow along each side above. Gastrocoeli shallow, situated at a little distance from the base of the segment, transverse, and finely punctured. Abdomen punctured, pilose; apex bluntly acuminate. Coxæ punctured; the long spur of the posterior tibiæ reaching beyond the middle of the metatarsus. Areolet 5-angled. The black on the vertex is rather obscure; the two longitudinal lines on the mesonotum are broad and extend from the scutellum to beyond the tegulæ; and there is a curved black mark at the extreme base touching the pronotum. The colour of the abdomen, compared to that of the thorax, is rather obscure, but this is probably owing to accidental discoloration.

41. *Ichneumon salvini*. (Tab. VII. fig. 16.)

Rufo-testaceus; linea pronoti, facie, orbitis oculorum, tegulis scutelloque flavis; scapo antennarum testaceo, flagello medio albo. ♀.

Long. 13½ millim.

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

Antennæ a little longer than the abdomen, somewhat thickened beyond the middle and compressed, the joints there broader than long; the apex acute. Head buccate; cheeks full; vertex obscurely punctured. Mesonotum obscurely punctured. Scutellum convex; the base broader than the apex, the latter subtruncated; sides abrupt, and

slightly concave. Metathorax coarsely and closely rugose, the apex almost reticulated; tubercles blunt, inconspicuous; areæ obsolete. Petiole smooth, shining, impunctate; the apex of the postpetiole with some punctures. Gastrocœli large, moderately deep, longer than broad. Abdomen closely punctured; the base shining, impunctate; the apex finely punctured, acuminate; sheath broad, projecting, issuing from the base of the sixth segment, pilose, the apex black. The head and thorax are sparsely pilose; the hair on the metathorax is longer than on the mesothorax, that on the abdomen is much closer and longer, especially at the apex. The metathorax is tinged with yellow, as are also the belly, the pronotum, and the legs at the base; the tubercle beneath the wings is also yellow; the apical joint of the posterior tarsi is black. Wings short; areolet 5-angled; stigma testaceous; nervures blackish.

42. **Ichneumon causticus.** (Tab. VIII. fig. 3.)

Rufo-testaceus; flagello antennarum nigro, medio læte albo, orbitis oculorum flavis; alis subfumatis, stigmate testaceo. ♀.

Long. 13 millim.

Hab. GUATEMALA, Zapote (*Champion*).

Antennæ semi-involute, thick, the third joint a very little longer than the fourth. Head not buccate, the front but little projecting; clypeal foveæ deep. Head and thorax closely, the pleuræ longitudinally, punctured. Scutellum flat on the disc, the sides carinate. Metathorax with a gradual slope; the areæ distinct; the supramedian area broader than long; the tubercles blunt. Petiole long, straight, and shining; postpetiole with a few punctures. The rest of the abdomen shining, and finely punctured. Gastrocœli shallow. Legs stout; coxæ punctured. Areolet 5-angled, narrower above; its outer nervure almost obsolete.

Almost identical in coloration with *I. salvini*, but a broader and stouter insect. The antennæ are stouter, and not compressed and dilated beyond the middle; the abdomen is shorter and broader; the petiole is longer; the metathoracic areæ are all distinct; and the wings have a well-marked smoky hue.

43. **Ichneumon additus.**

Ichneumon additus, Cresson, Proc. Acad. Phil. 1873, p. 114. no. 12 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

44. **Ichneumon citrinus.**

Ichneumon citrinus, Cresson, Proc. Acad. Phil. 1873, p. 114. no. 13 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

45. **Ichneumon izucarus.**

Ichneumon izucarus, Cresson, Proc. Acad. Phil. 1873, p. 114. no. 14 (♂, ♀)¹.

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

46. **Ichneumon arrogans.**

Ichneumon arrogans, Cresson, Proc. Acad. Phil. 1873, p. 115. no. 15 (♂, ♀)¹.

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

47. **Ichneumon godmani.** (Tab. VII. fig. 18.)

Ferrugineus; pleuris, metanoto, abdominis segmentis basi (petiolo fere toto), coxis, trochanteribus, femoribus, tibiis metatarsisque posticis nigris; medio antennarum flavo-testaceo; alis fumatis, medio stigmatum flavis. ♂.

Long. fere 15 millim.

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

Scabrous, covered with a white pubescence. Head buccate, slightly excavated above the antennæ; eyes surrounded by a furrow; clypeus rounded at the sides, transverse at the apex. Scutellum not much elevated above the scutum, rising to the centre equally from the base and apex, but more sharply from the former, smooth, shining, and covered with large punctures. Metanotum coarsely punctured, smooth and shining on either side of the upper median area: this is longer than broad, dilated at the sides, of equal breadth at the base and apex, and has a short area at its base. The metanotum has a gradual slope, and the lower median area is excavated. Petiole smooth, shining, hollow in the centre, the sides keeled, the keels projecting into the middle of the postpetiole, which is covered with large clearly separated punctures. Gastrocœli large, double as wide as long. The rest of the abdomen, like the thorax, scabrous; the segments contracted at the base. The four anterior legs are of a lighter ferruginous tint than the rest of the body; the four apical joints of the tarsi are yellowish testaceous, the spurs blackish. The flagellum is slightly dentated on the underside; the base and apex of the flagellum tend to fuscous on the upperside.

Easily known from the other species of this group by the black pleuræ. As in the allied species, there are no tubercles on the metathorax.

48. **Ichneumon melanopoda.**

Ferrugineus; antennarum apice, coxis posterioribus, femoribus, tibiis posticis, metatarsis, abdominisque segmentis basi nigris; alis fuscis, medio stigmatum flavis. ♂.

Long. 13 millim.

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

Scabrous, covered with a griseous shining pubescence. Antennæ as long as the abdomen and half the thorax united, stout; the apical joints produced on the underside; covered with a pale pubescence; the third joint one fourth longer than the following. Head dilated behind the eyes; the face rather flat, scarcely projecting in the centre. Scutellum with the sides abrupt, the centre with a gradual slope on either side. Metathorax large, gradually sloping to the base of the abdomen, the centre slightly hollowed; the areæ almost obsolete; and without tubercles. Petiole a little depressed

in the centre, smooth, shining, the sides keeled; postpetiole closely covered with large punctures. The rest of the abdomen is more strongly scabrous than the thorax; the segments are contracted at the base; towards the apex the black at the base of the segments becomes less and narrower in the middle. The anterior femora are more or less ferruginous; the black on the underside of the middle pair inclines to piceous. The knees are all ferruginous. The tibiæ (except the hind pair) are of a lighter ferruginous colour than the rest of the body; the spurs are also of this colour. Areolet 5-angled, a little narrower on the upperside; the recurrent nervure is received beyond the middle; the yellow band extends from the base to a little beyond the apex of the stigma.

Closely related to *I. godmani*, which may be easily known from the present species by being longer and stouter, by the metathorax being black, and by the metathoracic areæ being all clearly traced. The abdomen is not so strongly scabrous, and the antennæ are yellowish in the middle.

49. **Ichneumon panamensis.** (Tab. VIII. fig. 4.)

Ferrugineus; antennis, abdominis basi, pedibusque posterioribus nigris; antennarum medio apiceque tarsorum flavis; alis nigris, medio stigmatique flavis. ♂.

Long. 13 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 5000 feet (*Champion*).

Very near to *I. melanopoda*, and not differing from it in sculpture and clothing; but it is broader both in the thorax and abdomen; and the latter has only the base of the petiole black. The antennæ are longer and yellow in the centre; the tips of the tarsi are yellow; the four anterior tibiæ are yellow in front; the suture separating the meso- and metathorax is black; and the wings are much blacker in tint.

It is too large to be the male of *I. lymphatus*, which has, besides, the four anterior legs entirely ferruginous, and the hind tarsi almost entirely black; the petiole, too, bears no black, nor does the suture of the metanotum, while the gastrocœli are more distinct, these in *I. panamensis* and *I. melanopoda* being obsolete.

50. **Ichneumon lymphatus.** (Tab. VII. fig. 19.)

Ferrugineus; apice antennarum pedibusque posticis nigris; alis fumatis, medio flavo-hyalinis, stigmat flavo. ♀.

Long. 9 millim.

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

Strongly punctured, covered with a fuscous pubescence. Head buccate; face with a pale longish pubescence; eyes with a distinct narrow border all round. Scutellum moderately elevated; sides keeled in front, indistinctly keeled behind. Postscutellum broad, finely and longitudinally striated. Metathoracic areæ clearly defined behind, hollow in the middle. Petiole bicarinate on either side, the keels extending to the base of the postpetiole, which is strongly punctured; sides of the petiole with a row of

large punctures. Gastrocoeli transverse, narrow, and aciculate. Abdominal segments constricted at the base, all strongly punctured; sheath of ovipositor projecting, black. Coxæ and femora strongly punctured. The base of the antennæ is of a brighter tint than the body, and it changes to a yellowish hue towards the middle. Wings shortish; areolet 5-angled, square above. The black colour of the hinder legs is not quite pure, being suffused more or less with ferruginous.

51. Ichneumon cupidus.

Ichneumon cupidus, Cresson, Proc. Acad. Phil. 1873, p. 115. no. 16 (♂, ♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

52. Ichneumon championi. (Tab. VII. fig. 17.)

Ferrugineus; pedibus posterioribus, abdominis segmentis 2^o-3^m basi antennarumque apice nigris, his medio flavis; alis flavo-hyalinis, basi fuscis, stigmatibus testaceo. ♀.

Long. 13 millim.

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

Head subbuccate, excavated above; clypeus transverse, rounded at the sides. Antennæ closely punctured. Thorax closely punctured, the sides wrinkled. Scutellum but little raised above the mesonotum, not much longer than broad, rounded at the base and apex; the sides not clearly separated from the scutum, the disc sparsely punctured. Metanotum punctured at the base, the rest wrinkled and irregularly punctured; the areæ not quite clearly defined. Postscutellum longitudinally striated, obscurely punctured at the sides. Petiole smooth, shining, the sides margined. Abdominal segments 2-4 closely, apical faintly, punctured; the base of the second segment reticulate-striate. Gastrocoeli large, deep, smooth, and shining. Legs long, the posterior pair being longer than the body; the four posterior coxæ more or less ferruginous above; the anterior and the middle trochanters more or less black. The first seven joints of the antennæ are ferruginous, the eighth to the fourteenth yellow, the rest black; the third joint is not much longer than the fourth. The costa, except at the extreme apex (which is testaceous), is black. The bases of the second and third abdominal segments are black; the centre of the fourth segment broadly, and the apical one also more or less, black. Areolet deltoidiform.

53. Ichneumon munerosus. (Tab. VII. fig. 10.)

Ferrugineus; apice antennarum, femoribus posticorum apice tibiisque posticis (basi excepta) nigris; tarsis posticis flavis; alis hyalinis, fusco-bifasciatis, nervis flavis. ♂.

Long. 15 millim.

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

Head and thorax closely but not strongly punctured, covered with a white, partly fuscous, pubescence. Head not very robust, rather long in front, the face projecting

in the middle; behind it is entirely black; the ocelli are in a black spot, and from this a thin black line runs to the black excavated part over the antennæ. The orbits of the eyes are faintly yellowish. Mandibles yellowish laterally, their apices blackish. Scutellum not very much raised over the mesonotum, but considerably raised above the postscutellum; covered with long fuscous hair. The metathorax has a gradually rounded slope to the petiole, and is covered with a silvery white pubescence. Metathoracic areæ entirely obliterated. The sutures of the pleuræ, and the metasternum, are black. Petiole long, slender, not much dilated at the apex, smooth, shining, and impunctate; the rest of the abdomen is smooth, shining, and scarcely punctured. Antennæ stout, nearly as long as the thorax and abdomen together, tapering gradually towards the apex, covered with a microscopic pile; third joint distinctly longer than the fourth. Areolet square above, beneath but slightly angled in the middle. The apices of both wings are black; in the anterior pair a yellow band runs obliquely from the stigma to the apical dark cloud, and there is another band before the middle. Legs long.

54. **Ichneumon guatemalensis.** (Tab. VII. fig. 20.)

Ferrugineus; coxis, femoribus, abdominis dorso pro majore parte apiceque antennarum nigris; medio antennarum tibiisque proparte flavis; alis flavo-hyalinis, costa et stigmate testaceis. ♀.

Long. 14 millim.

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

Head wrinkled, subbuccate, excavated above; antennæ covered with white hairs; eyes margined on the inner side, a furrow surrounding them on the outer side. Clypeus rounded at the sides, transverse at the apex; a large fovea on either side above. Thorax closely punctured above, the sides wrinkled, obscurely reticulated at the edges. Scutellum moderately elevated, a deep depression at the base, which is slightly rounded, the sides straight; closely punctured. Scutum at the sides of the scutellum striated, but not throughout. Postscutellum longitudinally striated, the sides punctured. Metanotum closely and irregularly reticulated, the areæ distinct. Petiole smooth, shining, the apex hollow and reticulated, margined at the sides. The other abdominal segments closely punctured; the apex faintly punctured, subovate; segments seven and six together nearly as long as the fifth, which is about one fourth shorter than the fourth; second segment one third longer than the third. The base of the antennæ to the sixth joint ferruginous; joints 6-18 yellow, inclining to ferruginous at the base and apex; the second joint is not much longer than the third, which is a little longer than the fourth. The vertex is for the most part black in the centre; the greater part of the mesonotum on either side of the scutellum, the base of the metanotum and its postmedian area, the sutures of the pleuræ, the petiole [except at the extreme apex], and the abdominal segments [except at the apex], the coxæ and femora, black. The tibiæ are ferruginous at the base all round; the anterior pair are yellow in front and behind not far from the base, the rest being ferruginous; the middle pair have a yellow band in front of the middle; and the

posterior pair are yellow (except at the extreme base), and have a broader ferruginous space at the apex. On all parts of the body the black runs into ferruginous; on either side, at the apex, the postpetiole is yellowish, as is also the apex of the second segment at the side. Legs robust. Anterior tibiæ curved at the base. Areolet broad above, but the lateral nervures still converging; the recurrent nervure is received a little beyond the middle.

55. *Ichneumon opiparus*.

Brunneo-rufus; antennarum scapo medio, abdominis segmentis 1^o-3^m apice tibiæ et dimidio basali, flavis; alis flavo-hyalinis, stigmatibus testaceo. ♀.

Long. 14 millim.

Hab. MEXICO (*Bilimek*).

Head and thorax opaque, coarsely granulated, closely covered with a pale pubescence; clypeus strongly punctured, foveate at the base on either side, the part above it broadly projecting in the middle. Scutellum slightly elevated above the mesonotum, clearly raised from the sides, carinate at the base, longer than broad, narrowed towards the apex, which has a gentle slope. Metathorax rugose; supramedian area distinct, longer than broad, narrowest at the apex; the other areas not defined, except indistinctly at the base; the apex has an almost perpendicular slope, and is hollowed in the centre; the lateral tubercles blunt, but distinct. The centre of the posterior part of the metathorax is brownish red like the rest of the body (the red forming a broad straight line); on either side of this, and extending a little on to the pleuræ, the colour is pale yellow. Petiole black, smooth, and shining; the carinæ well defined at the apex; postpetiole longitudinally and strongly striated. The rest of the abdomen is finely and closely punctured; the base of the second segment longitudinally striated. Gastrocœli broader than long, shining and aciculate in the middle. The apices of the first, second, and third segments are yellow, the remaining part for the greater extent black; the apical segments are obscure dull red. The pronotum is narrowly edged with obscure yellow. The antennæ beyond the broad yellow portion are almost black. The yellow on the four anterior tibiæ is not so distinct behind as it is on the front; the sutures of the pleuræ are yellowish for the most part. Areolet 5-angled, broad above, the lateral nervures but slightly converging. The body is more densely pilose and more opaque than in the preceding species.

56. *Ichneumon tepidus*.

Sordide rufus; sterno abdominisque segmentis basi late nigris; alis flavo-fumatis, nervis testaceis. ♂.

Long. 15 millim.

Hab. MEXICO (*Bilimek*).

Head (except the face) and thorax opaque, closely punctured and covered with a dense pale pubescence. Pleuræ longitudinally punctured, the punctures almost forming striations. The basal half of the antennæ, the four anterior legs, the basal half of the hind tibiæ, the hind tarsi, and the apices of the first to the fourth (the second very

broadly) abdominal segments rufous, running, however, imperceptibly in some places, into the dark brownish-red colour of the body; this last colour again on the thorax and head running into black. The antennæ are scarcely so long as the abdomen and thorax together; the joints are not much serrated. Metathorax coarsely punctured, the punctures forming irregular reticulations at the base; the apex has a rounded and gradual slope; the areæ are not clearly defined, the keels running into and becoming confused with the punctuation; the sides are light rufous, the centre darker; there are no lateral tubercles. The sides of the postpetiole are punctured, the centre longitudinally striated. The rest of the abdomen finely and closely punctured. Areolet 5-angled, longish; the sides converging towards the top.

I. tepidus is a very close ally of *I. opiparus*, but the latter may be known from it by the apex of the metathorax having an abrupt slope (not rounded at the upper part as in *I. tepidus*), the centre too being distinctly hollow. In *I. tepidus* the punctuation is stronger over all the body; the wings clearer; the areolet compared to its breadth shorter, and wider at the upper part; and the pubescence is denser.

57. *Ichneumon sallæi*.

Niger; facie, orbitis oculorum, scutello pedibusque rufo-flavis; coxis trochanteribusque flavis; femoribus posticis fere totis, apice tibiæ coxisque posticis, nigris; abdomine fulvo, segmentis 3^o-5^m margine basali basique nigris; alis flavo-fumatis, costa et stigmate fulvis. ♂.

Long. fere 16 millim.

Hab. MEXICO (*Sallé*).

Head and thorax covered with white glistening hair. Vertex coarsely punctured, face obscurely aciculated. Above the antennæ the front is deeply excavated, smooth, and shining; below the antennæ the head is entire fulvous yellow; on each side of the clypeus above is a round fovea; the yellow border along the eyes scarcely reaches to the ocelli. Scape yellow beneath, black above; [flagellum broken off]. Pronotum projecting, the side of the collar hollow, bordered behind; the middle of the pronotum fulvous above. Thorax coarsely punctured. Scutellum raised, smooth, and shining; subtruncated before and behind, much broader behind than at the apex. Metathorax with a gradual slope, and hollow in the middle behind. Petiole shining, faintly aciculated; the apex with a few punctures; the centre hollow, the hollow carinated, the keels extending to near the apex. Abdomen obscurely aciculated. Gastrocœli broad, large, finely aciculated; the bands on the third, fourth, and fifth segments are broad. The coxæ (especially the posterior pair) are punctured, but not very closely; the sides hollow and shining; the anterior pair black above and behind. The posterior trochanters are black at the base on the inner side.

It is possible this may be the male of *I. illacessitus*, but, apart from the difference in the coloration of the posterior legs, the four anterior coxæ are yellow. The scutellum is longer compared to its width, and narrower at the apex. The petiole is not so shining above, and it is, if anything, longer, and more pubescent.

58. *Ichneumon illaccessitus*. (Tab. VII. fig. 21.)

Niger; antennis (apice excepto) pallide rufis; scutello et postscutello flavis; facie, orbitis oculorum, abdomine (basi et segmentis 3^o–4^m margine basali exceptis), pedibus (coxis exceptis) rufis; alis flavo-hyalinis, tegulis, costa stigmatique luteis, nervis pallide testaceis. ♀.

Long. 12 millim.

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

Antennæ stout, involute; beyond the middle the red colour becoming much paler. Head large, buccate, coarsely punctured; above covered with short, thick, blackish hairs; the face with white glistening hair; there is a fovea on either side of the clypeus above; the front immediately above the antennæ is deeply excavated, smooth and shining, the centre of the hollow aciculated; the red border along the orbits extends to the ocelli; immediately below the antennæ there is a small black space, the remaining portion below this is red. Thorax opaque, coarsely punctured all over, covered with a white glistening pile. Prothorax projecting in front, with a distinct neck separated from the part behind, which rises gradually from it; the sides hollowed in front; the centre of the pronotum red. Scutellum flat, truncated behind, broadly rounded in front, broader than long. Metathorax with a gradual slope to the apex, which is almost perpendicular and hollow in the centre. Upper median area longer than broad, the sides nearly straight; lower area scarcely defined. The other areas indistinct. Petiole aciculated and punctured at the sides and apex; the centre at the base hollow, smooth, and shining; this channel with the sides carinate, the keels extending to the apex, but becoming less distinct as that is reached. The abdomen is aciculated and covered with pale pubescence from the second segment; second segment with a well-defined margin at the base, the margin not quite extending to the middle, where it becomes confluent with the rest of the segment; separated from the petiole by a deep groove. Gastrocoeli longish, narrow, striated. Legs (especially the femora) stout; tarsi covered beneath with stiff hairs; coxæ punctured; anterior trochanters black. Areolet 5-angled, large; the upper side barely one half of the length of the lower side, which is not acutely angled.

59. *Ichneumon turpiculus*. (Tab. VII. fig. 22.)

Niger; facie, ore, palpis, scapo, pedibus anterioribus (basi excepta), trochanteribus posticis, femorum posticorum basi, tibiæ posticarum dimidio basali, tarsis, scutello metanotoque postice, flavis; abdomine ferrugineo, basi segmentis 1^o–5^m nigris; alis flavo-hyalinis, stigmate fulvo. ♂.

Long. 17 millim.

Hab. MEXICO, Puebla (*Bilimek*).

Antennæ stout, tapering at the apex, covered with a microscopic pile, the third joint nearly as long as the two following joints together; the scape broadly marked with black above. Face flat, but slightly projecting in the middle at the upper part. Mandibles yellow, black at the apex. The eyes are bordered on the inner side to near the ocelli. The head is covered with large punctures and with longish hair, and retreats

behind the eyes. Thorax coarsely punctured, and covered with a pale pubescence. Scutellum flat, narrowed considerably behind, where it is truncate. Metathorax depressed in the centre, the areæ all distinct—the supramedian a little longer than broad, and almost truncate at the base and apex; postero-median all present, the central with straight sides; the portion behind the apex of the supramedian is yellow to the extreme apex of the metanotum. The petiole is black, as is also the base of the postpetiole; it is longitudinally striated, and yellow at the apex. Abdomen closely punctured, its apex rather blunt; the black band on the second segment is behind the gastrocœli, which are shallow and indistinct, and is less distinct than upon the others, being almost divided into three; the bands on the third and fourth occupy nearly half the segment, on the fifth more than the half. The tegulæ and a spot in front, the tubercle below them, and the prothorax in front above are clear yellow. Areolet 5-angled, the sides narrowing towards the upper part.

60. *Ichneumon sublutus*.

Hab. MEXICO (*Sallé*).

In coloration this species agrees with the preceding, except that the antennæ have a broad reddish band in the middle. The mark on the metathorax is ferruginous, not yellow, the apex of the postpetiole being also of this colour. The four front coxæ are entirely yellow behind. The scutellum is broader than long, not longer than broad, as in *I. turpiculus*. The thorax is not so densely pilose. The gastrocœli are more distinct, transverse, and finely aciculated; and there is no black on the second segment. The fifth and following segments are missing in the specimen (♂) before me. Another good mark of distinction is that the third joint of the antennæ is not much longer than the fourth.

A smaller species than *I. turpiculus*.

61. *Ichneumon multiplagiatus*. (Tab. VIII. fig. 5.)

Niger, flavo-maculatus; abdomine rufo, basi nigro et flavo maculato; pedibus flavo-testaceis, femoribus tibiisque nigro-lineatis; alis hyalinis, stigmatibus testaceo. ♀.

Long. 15 millim.

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

Closely punctured, but not strongly on the head and thorax. Antennæ stout, semi-involute, a little thickened and compressed beyond the middle. Front projecting in the centre; clypeal foveæ large and deep, a shallow furrow joining them. Eyes bordered all round. Hollow above the antennæ deep, smooth, shining, black, the black continued as a broad band to the back of the head, which is entirely of that colour. There is a broad black band on the pronotum and on the side of the prosternum. Mesonotum black, except two straight narrow lines running from the middle to the pronotum, and two curved ones from the scutellum to the tegulæ. Scutellum flat, broad, not much longer than broad, and not much narrowed towards the apex; black, the sides and apex bordered with yellow; there are two yellow marks at the base, joining the above-

mentioned lateral lines. On the mesopleuræ is a large black mark under the wings, with a large yellow space in its centre. There is a small black mark at the apex of the mesosternum; the sutures joining the meso- with the pro- and metathorax are broadly black. Metanotum black, except two square marks at the base touching the suture, where they are prolonged a little laterally, and a longish mark on either side of the lower median area which bounds them. A large and somewhat roundish mark, bounded with black, on the metapleuræ. The upper median area smooth, shining, impunctate, united to the lower median area, the sides of which are distinct. Petiole hollow in the centre, the sides keeled; the keels continued to the middle of the post-petiole, which is coarsely punctured; black, except a large yellow mark on either side at the apex. Abdomen coarsely and longitudinally punctured; the second segment almost striated, its basal three fourths black; the apex reddish, yellowish at the sides; the basal half of the third segment black, the rest of which and the remaining segments reddish; the segments are a little contracted at the base; the apex acute, pilose; the sheath of the ovipositor black. The four anterior legs are entirely yellow on the under-side; the tarsi inclining to fulvous; the tibiæ black above; the femora also black, and with a longish clear yellow line in the centre of the black part. The posterior femora are broadly black above, yellow like the anterior pairs in the centre, and black also at the apical half on the underside; the apical half of the tibiæ black on the outer side; for the rest, as also the hind tarsi, fulvous, inclining to yellowish. Coxæ marked (slightly on the front pairs) with black on the outer side. The trochanters black at the base; the hind pair also at the apex. Areolet 4-angled, triangular above.

The male has the antennæ without the white ring found in the female, and the black on the legs is more irregularly distributed; the abdominal segments are black, reddish yellow at the apex, the two apical ones entirely reddish.

62. *Ichneumon suffrageneus*. (Tab. VIII. fig. 13.)

Niger; pleuris pro parte, scutello metanotoque (maculis 2 basalibus exceptis) flavis; alis hyalinis, stigmatibus nigro. ♀.

Long. 19 millim.

Hab. GUATEMALA, Zapote (*Champion*).

Antennæ nearly as long as the body. Head slightly punctured; palpi, mandibles, clypeus, face, and orbits broadly (but the yellow is not continuous, being interrupted a little near the ocelli and behind) yellow. Thorax slightly punctured. Prosternum, a line on the pronotum, the tegulæ, the tubercle below them, two marks in the centre of the mesonotum, scutellum, postscutellum, sternum, the greater part of the mesopleura (all below the hollow, except where it projects a little at the head of the latter), a mark under the hind wings, a large mark on the metapleura, a small mark at the side near the base of the metanotum (curving round the spiracle), and a band down the centre [this is continued to the apex, and laterally from the middle], yellow. Scutellum large, flat, broad, with some shallow punctures; at the apex is a transverse furrow, behind

which the scutellum is narrowed. Mesonotum strongly punctured, the middle transversely striated; areæ obsolete; the apex but very slightly hollowed in the middle. Petiole smooth, shining; postpetiole punctured, longitudinally striated. Gastrocoeli small, yellow. Abdominal segments longitudinally punctured.

63. *Ichneumon opiniosus*. (Tab. VIII. fig. 11.)

Flavus; pronoto (linea laterali excepta) mesonoto maculisque 2 metanoti nigris; pedibus fulvo-testaceis, femoribus supra nigro-lineatis; alis hyalinis, stigmatibus testaceo. ♀.

Long. 18 millim.

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

Antennæ porrected, pilose; basal joints of the flagellum longer than broad, the apical joint broader than long, semidentate. Head punctured, the vertex and hinder part black; clypeal foveæ distinct; the clypeus projecting out from the front at the base and forming a semicircular ridge uniting the foveæ, the apex a little projecting. Thorax punctured; prosternum, a line on the pronotum, tegulæ, two short lines on the middle of the mesonotum, scutellum, the suture of mesonotum, postscutellum, pleuræ (except a curved line below the wings), and sternum, yellow. Metanotum yellow, except two broad lateral marks, issuing from the base, and a mark in the centre, black. Scutellum with the sides and apex rather abrupt, the top flattish, punctured, but not closely. The apex of the metanotum is not much hollowed and is somewhat abrupt; tubercles distinct. Petiole smooth, shining, postpetiole punctured; the rest of abdomen closely punctured. Gastrocoeli longer than broad, striated.

64. *Ichneumon trunculentus*. (Tab. VIII. fig. 12.)

Long. 18 millim.

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

In coloration nearly identical with *I. opiniosus*, but wanting the two yellow marks in the middle of the mesonotum, and having instead one at the side of the tegulæ; the antennæ shorter; the scutellum and the base of the metanotum impunctate; the basal segments longer and narrower; the apex of the metathorax not hollowed at the sides, &c.

Antennæ porrected, pilose. Head behind and on the vertex black; clypeal foveæ deep; face rather flat, obsoletely punctured. Thorax smooth, shining, almost impunctate, densely pilose. Prosternum, a line on the pronotum, the tegulæ and a broad mark at their side, the scutellum, postscutellum, sternum, pleuræ, and metanotum (except two large marks at the base), yellow. Scutellum with the sides abrupt, keeled; narrowed behind, longer than broad. Metathoracic areæ obsolete at the base, which is smooth, impunctate, and shining; the rest obscurely reticulated; the apex is not hollow and has a semi-perpendicular slope. Petiole smooth, shining, impunctate. Postpetiole black, except at the apex; the sides punctured. Gastrocoeli shallow, longer than broad, impunctate. The abdominal segments punctured, except at the apex; black, except at the apex and beneath.

65. *Ichneumon democraticus*. (Tab. VIII. fig. 10.)

Niger; sterno, pleuris, macula mesonoti scutelloque, flavis; pedibus flavis, femoribus tibiisque supra nigro-lineatis; alis hyalinis, stigmatе nigro, medio testaceo. ♀.

Long. 16–17 millim.

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

Head and thorax punctured. Metanotum transversely, the collar obliquely, striated; the pleuræ more strongly punctured than the upper part of the thorax, and covered with fuscous or fuscous-black pubescence. Antennæ semi-involute, as long as the abdomen and the metathorax together; a little thickened and compressed beyond the middle. The head is black in the centre above the antennæ, and entirely so behind; with a broad transverse furrow below the lower ocellus. The pronotum is broadly black in the centre; there is a longitudinal black mark below the tubercle under the tegulæ, and from it one of nearly equal length runs along the hollow in the mesopleura. The mesonotum is black save an indented mark on either side in front, a transverse mark (narrower in front and behind) in the centre, and two small marks in front of the scutellum. The scutellum and postscutellum are yellow; the former is longer than broad, narrower in the centre and at the apex, and slightly raised in the centre. The suture separating the meso- from the metanotum is black; on either side of the latter two large marks, double as long as wide, and bulging out in the middle, run from this suture to a little beyond the middle, and an oblique, narrower line runs from its basal third; at the extreme apex in the middle is a small triangular black mark. The metathorax has a gradual slope and has neither areæ nor tubercles. Petiole black beneath, yellow above; postpetiole black, strongly punctured. Abdomen strongly, longitudinally punctured; segments 2–5 with a broad black band, mostly narrowed at the base or apex; longer than the head and thorax together; the apex acute; the sheath of the ovipositor black, projecting. Gastrocoeli shallow. On the four anterior femora, tibiæ, and tarsi there is a black line on the upper side, and broader one on the posterior femora and tibiæ and on the base of the tarsi. There is a broad, somewhat irregular mark in the centre of the posterior coxæ, this line-like mark being continued on to the basal part of the trochanter.

66. *Ichneumon valladolidensis*. (Tab. VIII. fig. 9.)

Niger; linea pronoti, pleuris pro majore parte, maculisque 2 magnis metanoti flavis; pedibus fulvo-flavis, apice femorum et tibiæ posticarum nigro. ♀.

Long. 13 millim.

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

Antennæ involute, thick. Head behind and the vertex broadly black; broad, punctured, shining; clypeal foveæ deep; clypeus with a small incision in the centre at the apex. Thorax punctured, but not deeply or closely. The edge of the pronotum broadly, the tegulæ, a large mark on the meso- and a smaller one on the metapleuræ, the scutellum, and the sides of the metanotum broadly, yellow. Scutellum broad, flat,

the sides keeled, the upper part with scattered punctures. Metathorax hollowed in the middle, the slope somewhat abrupt; lateral tubercles longish, acute; areæ defined, the supramedian broader than long, and with a short field at its base. The base of the metanotum shining, the sides punctured, the middle transversely striated. Petiole smooth, shining; postpetiole closely punctured. Gastroceli shallow, broad, with some large striations at the base. The third and the base of the fourth segments of the abdomen closely punctured; the others impunctate, shining.

67. *Ichneumon subsecivus*. (Tab. VIII. fig. 7.)

Niger, nitidus; linea pronoti, sterno, pleuris, apice scutelli maculisque 4 metanoti, flavis; pedibus flavis, tarsis posticis fulvis; femoribus, tibiis anterioribus supra tibiisque posticis totis, nigris; alis hyalinis, apice fere fumatis, stigmatе nigro. ♂.

Long. 13 millim.

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

Antennæ as long as the body. Head black; the mandibles, clypeus, front, and orbits broadly yellow; the front projecting a little, punctured; the apices of the mandibles black. Thorax black; a line on the edge of the pronotum, the prosternum, the tubercle below the tegulæ, a transverse mark below the front, and a perpendicular one below the hind wings, the lower part of the pleuræ and sternum, the tubercles in front of the scutellum, and a mark in front of these, the apex of the scutellum, the postscutellum, two marks at the base of the metanotum and two large ones at the apex extending from the spines (which are yellow), and two large marks on the metapleuræ, yellow. Mesonotum shining, with scattered punctures. Scutellum more strongly punctured than the mesonotum, broad, the sides projecting as strong keels above the surface. Metathorax strongly, transversely punctured; the apex rather abrupt and hollow in the centre; the spines large; the areæ mostly defined; the supramedian area horseshoe-shaped, shining, aciculate, and with a keel down its centre. Petiole and postpetiole shining, impunctate. Gastroceli small, shining. Second and third segments of the abdomen longitudinally punctured, the third not so strongly; the other segments impunctate; the base of the petiole, the apex of the postpetiole and of all the other segments, yellow. Legs yellow; femora and tibiæ lined with black; the anterior tarsi above, and the middle ones wholly, black; the posterior tarsi fulvous; a small black mark on the middle coxæ, and a large one on the posterior coxæ joining the trochanters, which are entirely black. Areolet 4-angled, triangular above.

68. *Ichneumon yucatanensis*. (Tab. VIII. fig. 8.)

Niger; sterno, maculis 2 mesonoti, apice scutelli maculisque metanoti flavis; pedibus fulvo-flavis, femoribus tibiisque nigro-lineatis; alis hyalinis, stigmatе nigro. ♀.

Long. 16 millim.

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

Antennæ stout, involute; the third joint not much longer than the fourth; the scape shining, minutely punctured. Head broad, yellow, the vertex and behind black;

punctured, but not strongly. Thorax smooth, shining. Scutellum flat, longish; the sides semi-perpendicular; the upper part with some scattered punctures. A broad line on the edge of the pronotum, two short lines in the centre of the mesonotum, the tubercles in front of the scutellum, the apex of the latter, the suture of the mesonotum, and the postscutellum, yellow; the breast and a large mark on the mesopleuræ under the wings also yellow. The pleural suture of the meso- and metanotum crenulated. Metathorax broadly rounded, the centre at the apex deeply and broadly hollowed; the areæ distinct; the upper median area longer than broad, rounded at the base, transverse at the apex; the base shining, bearing scattered punctures, the middle transversely striated; the sides punctured. The lower portion of the metapleuræ broadly yellow; the edges of the areæ mostly lined with yellow, the postmedian very broadly. There are no tubercles, and the metathorax is densely covered with white hair. Petiole smooth, shining, keeled; postpetiole broad, finely punctured. Gastrocœli shallow, small, smooth, and shining. Abdomen closely, but not strongly, punctured; the apex very shining, impunctate, acute; the ventral surface and all the segments at the apex broadly yellow; in the centre of the second segment is a small yellow mark indented at the apex. On the hind coxæ there is a black mark at the base laterally, and there is another mark in front; the hind trochanters bear a black mark on the lower side; the anterior femora and tibiæ are lined above with black; the hind femora are broadly black above; the hind tibiæ at the apical half and the middle tarsi are black.

69. **Ichneumon opaculus.**

Ichneumon opaculus, Cresson, Proc. Acad. Phil. 1873, p. 115. no. 17¹ (♂, ♀).

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

70. **Ichneumon junceus.**

Ichneumon junceus, Proc. Acad. Phil. 1873, p. 116. no. 18¹ (♂).

Hab. MEXICO, Cordova¹ (*Sumichrast*).

71. **Ichneumon zapotecus.**

Ichneumon zapotecus, Cresson, Trans. Amer. Ent. Soc. ii. p. 3¹ (♀); Proc. Acad. Phil. 1873, p. 116. no. 19.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

72. **Ichneumon encaustus.**

Ichneumon encaustus, Cresson, Trans. Amer. Ent. Soc. ii. p. 4 (♀); Proc. Acad. Phil. 1873, p. 116. no. 20¹ (♂, ♀).

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

73. Ichneumon zacatecus.

Ichneumon zacatecus, Cresson, Proc. Acad. Phil. 1873, p. 116. no. 21¹ (♀).

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

74. Ichneumon parredes.

Ichneumon parredes, Cresson, Trans. Amer. Ent. Soc. ii. p. 4¹ (♀); Proc. Acad. Phil. 1873, p. 117. no. 22.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

75. Ichneumon tepanecus.

Ichneumon tepanecus, Cresson, Trans. Amer. Ent. Soc. ii. p. 5¹ (♀); Proc. Acad. Phil. 1873, p. 117. no. 23.

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

76. Ichneumon subspinosus.

Ichneumon subspinosus, Cresson, Trans. Amer. Ent. Soc. ii. p. 17¹ (♂); Proc. Acad. Phil. 1873, p. 117. no. 24.

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

Cresson thinks this may be the male of *I. tepanecus*.

77. Ichneumon actuosus.

Ichneumon actuosus, Cresson, Proc. Acad. Phil. 1873, p. 117. no. 25¹ (♂).

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

78. Ichneumon nestor.

Ichneumon nestor, Cresson, Trans. Amer. Ent. Soc. ii. p. 12¹ (♀); Proc. Acad. Phil. 1873, p. 117. no. 26.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

79. Ichneumon toros.

Ichneumon toros, Cresson, Trans. Amer. Ent. Soc. ii. p. 14¹ (♀); Proc. Acad. Phil. 1873, p. 117. no. 27.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

80. Ichneumon famelicus.

Ichneumon famelicus, Cresson, Trans. Amer. Ent. Soc. ii. p. 14¹ (♂); Proc. Acad. Phil. 1873, p. 117. no. 28.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

81. Ichneumon tenebricus.

Ichneumon tenebricus, Cresson, Trans. Amer. Ent. Soc. ii. p. 15 (♂, ♀); Proc. Acad. Phil. 1873, p. 117. no. 29¹.

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

82. **Ichneumon intentus.**

Ichneumon intentus, Cresson, Trans. Amer. Ent. Soc. ii. p. 15 (♂); Proc. Acad. Phil. 1873, p. 117. no. 30¹ (♂, ♀).

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

This and the preceding species are said to be common, and to vary in length from 4½ to 7 lines.

83. **Ichneumon gracilentus.**

Ichneumon gracilentus, Cresson, Trans. Amer. Ent. Soc. ii. p. 16¹ (♀); Proc. Acad. Phil. 1873, p. 118. no. 31.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

84. **Ichneumon arista.**

Ichneumon arista, Cresson, Trans. Amer. Ent. Soc. ii. p. 16¹ (♂); Proc. Acad. Phil. 1873, p. 118. no. 32.

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

85. **Ichneumon maritus.**

Ichneumon maritus, Cresson, Trans. Amer. Ent. Soc. ii. p. 16¹ (♂, ♀); Proc. Acad. Phil. 1873, p. 118. no. 33.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

86. **Ichneumon tuxtla.**

Ichneumon tuxtla, Cresson, Trans. Amer. Ent. Soc. ii. p. 17¹ (♀); Proc. Acad. Phil. 1873, p. 118. no. 34.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

87. **Ichneumon solitarius.**

Ichneumon solitarius, Cresson, Proc. Acad. Phil. 1873, p. 118. no. 35¹ (♂).

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

88. **Ichneumon prolixus.**

Ichneumon prolixus, Cresson, Proc. Acad. Phil. 1873, p. 118. no. 36¹ (♂).

Hab. MEXICO, Cordova¹ (*Sumichrast*).

89. **Ichneumon cholula.**

Ichneumon cholula, Cresson, Trans. Amer. Ent. Soc. ii. p. 5¹ (♀); Proc. Acad. Phil. 1873, p. 119. no. 37.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

90. Ichneumon zaptlanus.

Ichneumon zaptlanus, Cresson, Proc. Acad. Phil. 1873, p. 119. no. 38¹ (♀).

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

91. Ichneumon excuratus.

Ichneumon excuratus, Cresson, Proc. Acad. Phil. 1873, p. 119. no. 39¹ (♂).

Hab. MEXICO, Cordova¹ (*Sumichrast*).

92. Ichneumon toluca.

Ichneumon toluca, Cresson, Trans. Am. Ent. Soc. ii. p. 6¹ (♂); Proc. Acad. Phil. 1873, p. 120. no. 40.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

93. Ichneumon chalco.

Ichneumon chalco, Cresson, Trans. Am. Ent. Soc. p. 7¹ (♂); Proc. Acad. Phil. 1873, p. 120. no. 41.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

Cresson thinks this may be a variety of *I. toluca*.

94. Ichneumon inoratus.

Ichneumon inoratus, Cresson, Proc. Acad. Phil. 1873, p. 120. no. 42¹ (♂).

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

95. Ichneumon mendicus.

Ichneumon mendicus, Cresson, Proc. Acad. Phil. 1873, p. 120. no. 43¹ (♀).

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

96. Ichneumon ignarus.

Ichneumon ignarus, Cresson, Proc. Acad. Phil. 1873, p. 121. no. 44¹ (♂).

Hab. MEXICO, Cordova¹ (*Sumichrast*).

97. Ichneumon placitus.

Ichneumon placitus, Cresson, Proc. Acad. Phil. 1873, p. 121. no. 45¹ (♀).

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

98. Ichneumon epicus.

Ichneumon epicus, Cresson, Proc. Acad. Phil. 1873, p. 121. no. 46¹ (♂).

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

99. Ichneumon nigrofemoratus.

Ichneumon nigrofemoratus, Cresson, Proc. Acad. Phil. 1873, p. 122. no. 47¹ (♂).

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

100. **Ichneumon abjectus.***Ichneumon abjectus*, Cresson, Proc. Acad. Phil. 1873, p. 122. no. 48¹ (♂).*Hab.* MEXICO, Cordova¹ (*Sumichrast*).101. **Ichneumon cephalotes.***Ichneumon cephalotes*, Cresson, Proc. Acad. Phil. 1873, p. 123. no. 49¹ (♀).*Hab.* MEXICO, Mirador¹ (*Dr. Sartorius*).102. **Ichneumon chichimecus.***Ichneumon chichimecus*, Cresson, Trans. Am. Ent. Soc. ii. p. 19¹ (♂); Proc. Acad. Phil. 1873, p. 123. no. 50.*Hab.* MEXICO, Orizaba, Cordova¹ (*Sumichrast*).103. **Ichneumon teres.***Ichneumon teres*, Cresson, Trans. Am. Ent. Soc. ii. p. 18¹ (♂); Proc. Acad. Phil. 1873, p. 123. no. 51.*Hab.* MEXICO, Cordova¹ (*Sumichrast*).104. **Ichneumon amecus.***Ichneumon amecus*, Cresson, Proc. Acad. Phil. 1873, p. 123. no. 52¹ (♂).*Hab.* MEXICO, Mirador¹ (*Dr. Sartorius*).105. **Ichneumon parandus.***Ichneumon parandus*, Cresson, Proc. Acad. Phil. 1873, p. 124. no. 53¹ (♂).*Hab.* MEXICO, Orizaba, Cordova (*Sumichrast*), Mirador¹ (*Dr. Sartorius*).106. **Ichneumon abaculus.***Ichneumon abaculus*, Cresson, Proc. Acad. Phil. 1873, p. 124. no. 54¹ (♂).*Hab.* MEXICO, Orizaba¹ (*Sumichrast*).107. **Ichneumon centralis.** (Tab. VIII. fig. 15.)

Flavus; vertice, mesonoti lineis 4, metanoti 3, abdominis segmentis 1^o-5^m basi læte, femoribus anterioribus supra, posticarum basi et apice, tibiarum posticis apice maculaque posticarum coxarum, nigris; basi antennarum brunnea, medio flavo, apice nigro; alis flavo-hyalinis, costa et stigmate testaceis. ♀.

Long. 13 millim.

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

Head subbuccated; the eyes surrounded by a narrow furrow; face obscurely punctured, the centre of the vertex transversely striated, the sides with scattered punctures; front excavated above the antennæ, smooth, shining; at the side above the clypeus is a deep round fovea, and over the clypeus and going through the fovea is a semicircular suture; clypeus slightly incised at the apex. Antennæ stout, involute; second joint one third longer than the third, which is scarcely one fourth longer than the fourth.

Thorax (especially the mesonotum) punctured; the pleuræ obscurely, transversely striated. Scutellum slightly elevated, much broader at the base than at the apex, the sides curved, the base and apex scarcely truncate; the upper part bearing some slight scattered punctures, the base almost impunctate. At the side of the scutellum there are five or six conspicuous striations running from it to a carina which proceeds from the base of the posterior wings to the postscutellum; a similar carina runs from the wings to the apex of the postscutellum, the space enclosed being hollow and striated. Metanotum punctured, the centre coarsely shagreened; upper median area a little longer than broad. Petiole smooth, shining, the sides margined and hollowed, and with a row of punctures below the upper margin. Postpetiole closely, finely, and longitudinally striated, punctured laterally. The remaining abdominal segments closely punctured, the punctuation becoming weaker towards the apex; the second segment at the base striated and reticulated, especially at the sides; the segments constricted somewhat at the base; the apex bluntly rounded, and wider than the base of the second segment, which is one fourth longer than the third, this again being longer than the fourth; the fifth segment is much shorter than the fourth, and the sixth and seventh together are not half the length of the fifth. Gastrocœli almost obsolete. Legs robust; anterior tarsi indented at the base. The basal joint of the antennæ is yellow, brownish above; joints two to seven brownish beneath and at the sides, blackish in the centre above, eight to fifteen clear yellow, the rest black. The vertex in the centre is black, the black becoming narrowed towards the antennæ; and there is a black transverse line behind the ocelli joining the eyes; the extreme back of the head is black. On the pronotum there is a black line in front, close to the head; the sides of the mesonotum are for the most part black at the junction with the pronotum; there is a \cap -shaped mark along the side originating close to the scutellum, and, in its centre, a broad longitudinal line runs from near its apex to the end of the mesonotum. The sutures of the pleuræ are more or less black, as are also the sides of the scutellum and postscutellum; the base of the metanotum, a curved line along the spiracular area, and the whole of the median areæ are black. The petiole is black above to the postpetiole, so is more than half of the second and third segments, the black being transverse at the apex; the basal halves of the fourth and fifth segments are also black, but the black is rounded off (especially on the fifth) at the apex. The extreme base of the coxæ, a mark at the apex of them all (that on the posterior pair being much the largest), a line along the top of all the femora, a short line beneath at the apex, and a shorter one (forming a ring) at the base of the four posterior pairs, the inner side of the middle tibiæ, and the hind tibiæ at the apex all round, black. The tarsi incline to ferruginous, especially at the apex. Areolet 5-angled, broad above.

108. **Ichneumon parsimonicus.** (Tab. VII. fig. 23.)

Flavo-testaceus; vertice, antennis, lineis 3 mesonoti, 1 metanoti, segmentis abdominis basi, linea femorum posticorum, tibiæ posticarum apice tarsisque posticis, nigris; alis hyalinis, stigmate testaceo. ♂.
Long. 13 millim.

Hab. MEXICO (*Sallé*).

Head and mesonotum punctured, but not strongly, scarcely dilated behind; the centre of the vertex is black to near the antennæ, and behind the black is prolonged, on either side, to the eyes. The outer black lines on the mesonotum are united behind, and in front they are united to a narrow line which extends backwards to the tegulæ and beneath the latter there are two small black lines. The suture between the meso- and metanotum is black nearly all round, and there is a transverse line behind the post-scutellum; the central line on the metanotum is narrow. Scutellum raised, the sides carinate. Metathoracic areæ clearly defined; without lateral tubercles. Petiole smooth, shining, impunctate, the sides carinate, a longish fovea at the apex; postpetiole punctured, the sides depressed above. Gastrocœli indistinct. Abdominal segments strongly punctured; the second and third segments have the basal half black, and the black bands are of nearly equal width throughout; the black on the other segments extends beyond the middle at the centre, but is contracted at the sides. There is a small black mark on the inner side of the posterior coxæ at the base, and another at the apex on the outer side; the line over the posterior femora is fuscous rather than black. Areolet 5-angled, square above.

109. **Ichneumon abitus.**

Ichneumon abitus, Cresson, Proc. Acad. Phil. 1873, p. 125. no. 55¹ (♂).

Hab. MEXICO, Cordova¹ (*Sumichrast*).

110. **Ichneumon durus.**

Ichneumon durus, Cresson, Proc. Acad. Phil. 1873, p. 125. no. 56¹ (♂).

Hab. MEXICO, Cordova¹ (*Sumichrast*).

111. **Ichneumon alvarado.** (Tab. VII. fig. 24.)

Ichneumon alvarado, Cresson, Trans. Am. Ent. Soc. ii. p. 7 (♂); Proc. Acad. Phil. 1873, p. 125. no. 57¹ (♂, ♀).

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

112. **Ichneumon decorosus.**

Ichneumon decorosus, Cresson, Trans. Am. Ent. Soc. ii. p. 8¹ (♂); Proc. Acad. Phil. 1873, p. 125. no. 58.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

113. **Ichneumon centrosus.**

Ichneumon centrosus, Cresson, Trans. Am. Ent. Soc. ii. p. 8¹ (♂); Proc. Acad. Phil. 1873, p. 126. no. 59.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

114. **Ichneumon jugiosus.**

Ichneumon jugiosus, Cresson, Trans. Am. Ent. Soc. ii. p. 9 (♀); Proc. Acad. Phil. 1873, p. 126. no. 60¹ (♂, ♀).

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

115. **Ichneumon limitaris.**

Ichneumon limitaris, Cresson, Trans. Am. Ent. Soc. ii. p. 9¹ (♂); Proc. Acad. Phil. 1873, p. 126. no. 61.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

116. **Ichneumon tenuicornis.**

Ichneumon tenuicornis, Cresson, Trans. Am. Ent. Soc. ii. p. 9¹ (♂); Proc. Acad. Phil. 1873, p. 126. no. 62.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

117. **Ichneumon monitus.**

Ichneumon monitus, Cresson, Trans. Am. Ent. Soc. ii. p. 10¹ (♀); Proc. Acad. Phil. 1873, p. 126. no. 63.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

118. **Ichneumon motivus.** (Tab. VIII. fig. 16.)

Capite et thorace flavis, nigro maculatis; abdomine nigro-cæruleo; antennis nigris, annulo albo; pedibus flavis, anterioribus supra nigro lineatis, femoribus posticis (medio excepto), apice tibiæ tarsisque, nigris; alis hyalinis, stigmatibus fuscis. ♀.

Long. 20 millim.

Hab. MEXICO, Orizaba (*Bilimek*).

Antennæ not much longer than the abdomen, stout, semi-involute, shortly pilose, the third joint not much longer than the fourth; basal joints of the flagellum microscopically punctured; scape yellow beneath, more strongly punctured than the flagellum. Head broad, the front only slightly projecting; punctured most strongly on the vertex and front; eyes margined; clypeal foveæ large; vertex broadly and the posterior region black. Thorax stout, much broader than the abdomen, and also broader than the head, punctured. Scutellum flat, longer than broad, narrowed towards the apex, the sides not margined. The pleuræ, except a long black line immediately beneath the wings, a shorter one in the middle, and a large mark in front of the middle coxæ, yellow. Prothorax, except a transverse mark in front, and a large and somewhat triangular mark on the side, yellow. Mesonotum black, with two long yellow longitudinal lines in the centre, and a short one at the tegulæ; the tubercles in front of the scutellum, which is itself yellow (except a broad black line down the centre), and the postscutellum, yellow. Metathorax longish, with a gradual rounded slope, the middle but slightly hollowed;

areæ and tubercles obsolete; the extreme base is smooth and impunctate, beyond this smooth space it is for a short distance striated (the middle transversely, the sides longitudinally), the rest is punctured. The pleuræ are yellow, bordered all round with black; the spiracular area is yellow, black in the middle. The centre of the metanotum is black, broadly bordered with yellow, the yellow being continued up on either side of the apex of the supramedian area; the base is black. Petiole longitudinally striated, the striæ continued into the middle of the postpetiole, which is raised on either side and laterally depressed at the base; the sides and apex of the postpetiole punctured. Abdomen longish, becoming dilated to the fifth segment; the apex acute; the segments contracted at the base; strongly punctured; gastrocœli large, deep, transverse, broader than long, aciculate; the ventral surface is yellow to the base of the ovipositor, and with three broad black marks on either side. Legs stout. Coxæ large, especially the posterior pair; the two anterior pairs are entirely yellow; there is a large black mark on the posterior pair beneath at the base, and a narrower mark above, the extreme apex being also bordered with black. The four anterior legs are entirely yellow beneath, except a black mark at the base of the middle tibiæ; above they are lined with black, except a long yellow mark in the centre of the yellow on the femora and a small yellow line at the base of the middle tibiæ. The hind femora are yellow, black at the extreme base, and broadly black at the apex; hind tarsi and spurs entirely black. The anterior metatarsi are sharply curved at the base, the spurs being also curved. The middle femora are short and thick, and have a blunt keel on the underside; this keel projects at the apex and forms a leaf-like tooth. The middle tibiæ are narrow at the base, and have also a blunt tooth, beyond which the tibia thickens. Areolet 5-angled, converging above.

119. *Ichneumon beatus*. (Tab. VIII. fig. 17.)

Cæruleo; annulo antennarum, palpis, mandibularum basi, orbitis oculorum, tegulis, lineis pronoti tibiisque anticis, albis, posticis nigris; alis subfumatis, stigmatibus nigro-fusco. ♀.

Long. 14 millim.

Hab. MEXICO, Takubaya (*Bilimek*).

Antennæ stout, involute, the third joint longer than the fourth. Head and thorax closely punctured. Scutellum apparently flat*; the tubercles in front of it white. Metathorax broadly rounded, but slightly hollowed in the centre at the apex; without tubercles; all the areæ distinct; upper median area harp-shaped, broader than long; the base striated, the apex and sides rugosely punctured. Petiole keeled, finely punctured; postpetiole reticulate-punctate in the middle, the sides finely punctured. Gastrocœli very broad and deep, finely aciculate. Abdomen with the second segment reticulate-striate in the middle, the sides coarsely punctured; the third segment coarsely and longitudinally striated in the middle, the sides coarsely punctured; the fourth

* The pin goes through it, so I am unable to describe it fully.

segment shortly and longitudinally striated at the base, the sides punctured, but much less strongly so than the third; apical segments smooth, shining, almost impunctate. Areolet 5-angled, longish, narrowed above. Anterior tarsi obscure-white on the lower side, the tibiae lined with blue behind.

120. **Ichneumon virescens.**

Ichneumon virescens, Cresson, Proc. Acad. Phil. 1873, p. 126. no. 64 (♀)¹.

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

121. **Ichneumon rixosus.**

Hoplismenus rixosus, Cresson, Trans. Am. Ent. Soc. ii. p. 20 (♀)¹.

Ichneumon rixosus, Cresson, Proc. Acad. Phil. 1873, p. 126. no. 65².

Hab. MEXICO, Cordova^{1 2} (*Sumichrast*).

122. **Ichneumon munitus.**

Hoplismenus munitus, Cresson, Trans. Am. Ent. Soc. ii. p. 21 (♂ ♀)¹.

Ichneumon munitus, Cresson, Proc. Acad. Phil. 1873, p. 127. no. 66².

Hab. MEXICO, Orizaba, Cordova^{1 2} (*Sumichrast*).

123. **Ichneumon propinquus.**

Hoplismenus propinquus, Cresson, Trans. Am. Ent. Soc. ii. p. 22 (♀)¹.

Ichneumon propinquus, Cresson, Proc. Acad. Phil. 1873, p. 127. no. 67.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

124. **Ichneumon picturatus.**

Hoplismenus picturatus, Cresson, Trans. Am. Ent. Soc. ii. p. 22 (♀)¹.

Ichneumon picturatus, Cresson, Proc. Acad. Phil. 1873, p. 127. no. 68.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

125. **Ichneumon dissonus.**

Hoplismenus dissonus, Cresson, Trans. Am. Ent. Soc. ii. p. 23 (♀)¹.

Ichneumon dissonus, Cresson, Proc. Acad. Phil. 1873, p. 127. no. 69.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

126. **Ichneumon minax.**

Hoplismenus minax, Cresson, Trans. Am. Ent. Soc. ii. p. 23 (♂)¹.

Ichneumon minax, Cresson, Proc. Acad. Phil. 1873, p. 127. no. 70².

Hab. MEXICO, Orizaba, Cordova^{1 2} (*Sumichrast*).

127. **Ichneumon limatus.**

Hoplismenus limatus, Cresson, Trans. Am. Ent. Soc. ii. p. 24 (♂)¹.

Ichneumon limatus, Cresson, Proc. Acad. Phil. 1873, p. 127. no. 71².

Hab. MEXICO, Cordova^{1 2} (*Sumichrast*).

Scutellum flat, scarcely raised above the scutum, broader than long, sharply and obliquely narrowed from the middle to the apex. Antennæ of the male as long as the head, thorax, and basal segment of the abdomen together; thick, compressed and dilated towards the apex, as in Joppa female. Abdomen long, narrow, of nearly equal width from the second segment, the latter strongly longitudinally striated at the base; segments two and three with a longitudinal fold. Areolet 4-angled, triangular above. Apex of the clypeus rounded in the male.

See Nos. 129, 134, 141, 145

128. Ichneumon maculosus. (Tab. VIII. fig. 6.)

Joppa maculosa, F. Smith, Descr. of New Species of Hymen. p. 233 (1879)¹.

Hab. GUATEMALA, San Gerónimo (*Champion*); COSTA RICA, Volcan de Irazu 6000 feet¹ (*H. Rogers*).

Scutellum conical, the apex obtuse.

See Nos. 129, 134, 141, 145

129. Ichneumon montezuma.

Ichneumon montezuma, Cresson, Trans. Am. Ent. Soc. ii. p. 13 (♂)¹; Proc. Acad. Phil. 1873, p. 127. no. 72.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

130. Ichneumon exquisitus. (Tab. VII. fig. 25.)

Ichneumon exquisitus, Cresson, Trans. Am. Ent. Soc. ii. p. 12 (♂ ♀)¹; Proc. Acad. Phil. 1873, p. 127. no. 73.

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

131. Ichneumon piliventris. (Tab. VIII. fig. 19.)

Flavo-testaceus; antennis (scapo subtus excepto), linea media metanoti, geniculis posticis, tarsis posticis abdominisque segmentis basi, nigris; alis hyalinis, apice fumatis, nervis et stigmate nigris. ♂.
Long. 15 millim.

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

Face smooth, shining, impunctate, pale yellow, projecting, bluntly keeled in the middle; clypeal foveæ large and deep; front deeply excavated above the antennæ, smooth and shining; vertex aciculated, obscure fulvous in the centre, punctured, the sides shining and impunctate. Thorax punctured, covered with a black pubescence, which is longest on the scutellum; the sutures black; a black mark in the middle of the pronotum, and two obscure blackish lines in front of the mesonotum, the latter almost obsolete. Scutellum elevated, a little broader than long, the sides and apex (especially the latter) almost perpendicular, the sides above obscurely margined; scutellar fovea at the base black, the deep lateral keels acute. Metathorax with two broad tubercles at the sides,

punctured, and with a large broad black mark in the middle, the base being rounded; the areæ obsolete. Petiole smooth, shining, impunctate; postpetiole shining, with a few obscure punctures at the apex. Remaining segments of the abdomen punctured, pilose, the pubescence on the apex being especially long; on the second segment there is, at the base, a broad black band, which narrows at the middle, then runs on either side along the gastrocoeli, the base of which is black; on the third segment is a narrower black band; on the apical segments the basal band is obscure, if not obsolete, and the apex itself is almost fulvous, smooth, shining, and almost impunctate. Gastrocoeli very broad, the bottom with large longitudinal striations; sides smooth, impunctate. Areolet 4-angled, triangular above.

In some examples the black basal band on the abdominal segments is broad and distinct on all the segments; others have the apex of the posterior tarsi black, and the line on the metanotum frequently small and obscure.

132. *Ichneumon notabilis*. (Tab. VIII. fig. 20.)

Flavo-testaceus; flagello antennarum, vertice, basi tarsorum anteriorum, geniculis posticis, tarsis posticis dimidioque apicali tibiæ posticarum, nigris; alis hyalinis, stigmatibus fusco, basi testaceo. ♂.
Long. 16 millim.

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

Body covered with a short pubescence. Head and thorax closely but not deeply punctured, the former excavated above the antennæ, and with the vertex in the middle broadly, and the greater part behind, black. Mesonotum covered with a black pubescence, more or less blackish, especially in the centre, and semiopaque. Scutellum gibbous, broadly rounded at the base, narrower at the apex, the sides above margined. Metathorax with two large, acute tubercles; the sides projecting at the apex (which has a slight slope), thus making the centre hollow; the areæ obsolete, the surface subrugose. Petiole yellow for the greater part, smooth, shining, and with a longish hollow on either side at the apex; postpetiole punctured, the apex in the middle smooth, shining, and impunctate. Gastrocoeli deep, aciculated, double as wide as long, and situated quite close to the base of the segment. Abdominal segments punctured, covered with a close pubescence; at the base of the third segment there is a small black mark, narrowed in the centre; a broader and wider mark on the next segment, a longer and narrower band on the following, and a shorter and broader one on the apical segment, all black. The apices of the wings are faintly clouded; the areolet sharply triangular above; the nervures black.

133. *Ichneumon abactus*.

Ichneumon abactus, Cresson, Proc. Acad. Phil. 1873, p. 127. no. 74¹ (♂).

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

Scutellum conical, the apex acute.

^{128,}
See Nos. 129, 141, 145
^

134. *Ichneumon ariel*. (Tab. VIII. fig. 14.)

Niger; facie, orbitis, annulo antennarum, maculis pleuralis, linea pronoti, scutello maculisque 2 metanoti, albis; pedibus testaceis, coxis posticis, femoribus posterioribus, tibiis posticis dimidio apicali tarsisque posticis (apice excepto), nigris. ♂.

Long. 16 millim.

Hab. GUATEMALA, Panima (*Champion*).

Antennæ nearly as long as the body. Head, except the vertex and behind, black; strongly punctured. Mesothorax opaque, very finely and closely punctured. Prosternum, a line on the pronotum, the tegulæ and the tubercle beneath them, the tubercles in front of the scutellum, the scutellum, the postscutellum, a large mark on the mesopleuræ close to the sternum, and the sides of the metanotum at the tubercles (which are very prominent and yellow), yellow. Scutellum sharply conical, closely punctured, and covered with longish hair. Metathorax more strongly punctured than the mesothorax, the middle transversely striated. Petiole smooth, shining, and impunctate, except at the apex; postpetiole punctured, finely and longitudinally striated at the apex. Abdominal segments very closely and strongly punctured, striated at the base of the anterior segments. Base and apex of the petiole, and the apices of the other segments, yellow.

135. *Ichneumon blandicus*.

Rufus; vertice, antennis, pronoto mesonotoque nigris; annulo antennarum, facie, pedibus anterioribus basi sternoque, albis; alis hyalinis, stigmatibus sordide rufo. ♂.

Long. 18 millim.

Hab. GUATEMALA, Purula (*Champion*).

Antennæ as long as the body, the apical and middle joints dentate, pilose; the scape beneath, and a narrow ring beyond the middle, white. Face strongly punctured, striated in the middle, only slightly projecting; apex of the clypeus sharply transverse; except the orbits on the outer side below the middle, the head is black above the antennæ. Mesonotum opaque, closely and rugosely punctured; pleuræ finely granulated. Scutellum strongly punctured, densely covered with long black hairs, conical, the apex ending in a distinct conical reddish point, the sides keeled. Metathorax rugose, the sides rugosely striated, covered with long pale hair; the upper median area not clearly defined; the apex gradually rounded; the spines long and acute. The prothorax, except on the lower side, and a line on the edge, is black; the mesonotum and scutellum black, except a mark at the tegulæ (which are black), and the base of the scutellar keels. Abdomen strongly and closely punctured; petiole shining, impunctate; gastrocœli obsolete. Legs longish; coxæ punctured; hind tarsi black, white at the apex. Areolet longish, 5-angled, the lateral nervures converging above.

136. **Ichneumon occiputalis.**

Hoplismenus occiputalis, Cresson, Trans. Am. Ent. Soc. ii. p. 24 (♂ ♀)¹.

Ichneumon occiputalis, Cresson, Proc. Acad. Phil. 1873, p. 127. no. 75².

Hab. MEXICO, Orizaba, Cordova^{1 2} (*Sumichrast*).

137. **Ichneumon esurialis.**

Hoplismenus esurialis, Cresson, Trans. Am. Ent. Soc. ii. p. 25 (♂ ♀)¹.

Ichneumon esurialis, Cresson, Proc. Acad. Phil. 1873, p. 128. no. 76².

Hab. MEXICO, Orizaba, Cordova^{1 2} (*Sumichrast*).

138. **Ichneumon scutellaris.**

Hoplismenus scutellaris, Cresson, Trans. Am. Ent. Soc. ii. p. 26 (♂)¹.

Ichneumon scutellaris, Cresson, Proc. Acad. Phil. 1873, p. 128. no. 77 (♂ ♀)².

Hab. MEXICO, Orizaba, Cordova^{1 2} (*Sumichrast*), Mirador² (*Dr. Sartorius*).

139. **Ichneumon similans.**

Ichneumon similans, Cresson, Proc. Acad. Phil. 1873, p. 128. no. 78 (♂)¹.

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

140. **Ichneumon acclivus.**

Hoplismenus acclivus, Cresson, Trans. Am. Ent. Soc. ii. p. 25 (♂)¹.

Ichneumon acclivus, Cresson, Proc. Acad. Phil. 1873, p. 128. no. 79.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

Scutellum much elevated, oblique, the apex with transverse edge.

See Nos. 128, 129, 134, 145

141. **Ichneumon aztecus.** (Tab. VIII. fig. 18.)

Ichneumon aztecus, Cresson, Trans. Am. Ent. Soc. ii. p. 20 (♂)¹; Proc. Acad. Phil. 1873, p. 128. no. 80.

Hab. MEXICO, Orizaba, Isthmus of Tehuantepec¹ (*Sumichrast*); GUATEMALA, San Gerónimo, Purula (*Champion*).

Head obscurely punctured, the front deeply excavated; the back of the head entirely and the vertex broadly black in the middle to the base of the antennæ. Thorax strongly punctured; a broad black line on either side of the pronotum; mesonotum entirely black, except two narrow lines in the middle; a roundish black mark at the side of the scutellum, and a thin black line along the base of the metanotum. Scutellum strongly gibbous, projecting into a narrow truncated point at the apex above, and covered (as is also the metathorax, and to a less extent the mesothorax) with long fuscous hair. Metathorax subrugose; the base, apex, and sides reticulated; the areæ obsolete; with a long blunt tubercle on either side. Petiole smooth and shining; the postpetiole

punctured. Gastrocoeli large, moderately deep, aciculated, as long as broad. Abdomen with the middle of the second segment obscurely carinated on the back, the sides above a little depressed in the centre; the segments coarsely punctured; a small black mark at the extreme base of the petiole; the black mark on the second segment is produced to a point at the apex, that on the next two segments of nearly equal width throughout, on the fifth and sixth narrower at the side. Areolet sharply triangular above; the stigma obscurely fuscous in the centre.

142. **Ichneumon tragicus.**

Ichneumon tragicus, Cresson, Trans. Am. Ent. Soc. ii. p. 11¹ (♂); Proc. Acad. Phil. 1873, p. 128. no. 81.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

143. **Ichneumon lenis.**

Ichneumon lenis, Cresson, Trans. Am. Ent. Soc. ii. p. 19¹ (♀); Proc. Acad. Phil. 1873, p. 128. no. 82.

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

144. **Ichneumon infulatus.**

Ichneumon infulatus, Cresson, Trans. Am. Ent. Soc. ii. p. 12¹ (♀); Proc. Acad. Phil. 1873, p. 128. no. 83.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

Scutellum much elevated, depressed in the centre at the apex or bispinose.

See nos. 128, 129, 134, 141.

145. **Ichneumon abnormis.**

Hoplismenus abnormis, Cresson, Trans. Am. Ent. Soc. ii. p. 26¹ (♀).

Ichneumon abnormis, Cresson, Proc. Acad. Phil. 1873, p. 128. no. 84.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

146. **Ichneumon orizabensis.** (Tab. VIII. fig. 21.)

Flavus; antennis nigris, albo annulato; vertice, pronoto, mesonoto pro majore parte, macula mesopleurali, maculis 2 metanoti, abdominis segmentis basi læte, femoribus supra, tarsis tibiisque posticis, nigris; alis hyalinis, nervis nigris. ♀.

Long. 15 millim.

Hab. MEXICO, Orizaba (*Bilimek*).

Antennæ nearly as long as the thorax and abdomen together; dilated and compressed slightly beyond the middle, the apex much thinner; the sixth to the twelfth joints clear white; the third joint a little longer than the fourth. The hollow space above the antennæ is black, and the black proceeds up through the ocelli to the back of the head, which is, for the greater part, black behind. The vertex is somewhat depressed; below the ocelli there

are some transverse striations. The face projects in the centre; the projecting part is interrupted beyond the middle by a broad transverse hollow and ends at the base of the clypeus, which projects outwardly at the apex, thus forming a hollow. The foveæ at the sides of the clypeus are large and deep. Labrum projecting, semicircular at the apex, and covered there with longish hair. The entire head (except the hollow space above the antennæ) covered with distinct punctures. Thorax closely punctured. The pronotum is black, except round the edges, which are broadly yellow; on the mesonotum there are two yellow longitudinal lines in the centre, running from the pronotum to a little past the yellow tegulæ; the carinæ running to the scutellum are clear yellow at the base. The scutellum is yellow on its apical half and behind; the junction between the meso- and metanotum and the postscutellum are also yellow. Below the wings there is a broad black line, and the hollow in the centre of the mesopleura and the sutures are also black. On the metanotum is a broad black mark (narrowest behind) reaching from the base to the tubercles. The scutellum rises obliquely, narrowing gradually to the apex, which is slightly depressed in the centre. The scutellum itself is not keeled, but the keels at its base are broad. The keels on the median areæ are not very distinct, but that bordering the outside of the spiracular is. The supramedian area is not very clear; it is rounded at the base and transverse at the apex; at its base the metanotum is raised above its level. The lateral tubercles are large (and triangular in form if viewed from the side), their apices not very acute. The pleuræ in the middle are longitudinally, the metanotum behind transversely, striated. The petiole is smooth, shining, and impunctate at the base, shallowly punctured at the apex; the postpetiole is broad, slightly depressed at the sides, and punctured; the petiole, to near the apex, is black. Gastrocelli large, broader than long, coarsely striated. The abdomen is closely punctured and acute at the apex; the black mark on the second segment occupies somewhat more than the basal half, and is transverse at the apex; on the three following segments it occupies scarcely the half, and is rounded, narrowing at the sides; on the fifth segment it does not occupy more than one third; there is no black on the apical segment, but the sheath of the ovipositor is black. There is a small black spot at the base of the hind coxæ and a larger one at the apex, both being on the upper side; on the underside and at the apex the hind tibiæ are brownish; the lower side of the tarsi inclines also to brownish. Areolet triangular above, the lateral nervures almost touching.

In one specimen, apparently a variety of the above, the upper part of the scutellum is roundly depressed, thus forming two tubercles, and the black on the mesopleura is longer and has a yellow spot in the centre.

147. *Ichneumon marginiscutellatus*.

Niger, flavo-varius; ore, facie, orbitis, annulo flagello antennarum, linea pronoti, maculis 2 mesonoti, scutelli medio, postscutello, maculis 4 pleuralibus, maculis 2 metanoti abdominisque segmentis apice, flavis; pedibus

flavis, macula coxarum posticarum, linea femorum posticorum dimidioque apicali tibiæ posticarum, nigris; alis hyalinis, stigmate nigro. ♀.

Long. 13 millim.

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

Antennæ a little longer than the body, dilated somewhat towards the apex. Head buccated; face with shallow punctures; clypeal foveæ deep; vertex depressed between the eyes. Thorax with shallow scattered punctures; the base of the metanotum impunctate, obscurely shagreened; the rest and the pleuræ transversely striated; the sides also punctured. The yellow line on the pronotum is broad; the two lines on the mesonotum more than double as long as wide. The scutellum yellow above throughout, the projecting sides entirely black. The two marks on the metanotum occupy the greater portion of the sides, and cover the spines, but they do not extend on to the central area. On the mesopleura there is, beneath the fore wings, a large yellow mark; below this again, but placed more in the rear, is a slightly smaller mark; there is a much smaller mark beneath the hind wings, and the greater part of the metapleura is yellow. The metathoracic areæ are all distinct; the supramedian area a little longer than broad, dilated towards the apex; the spines large, stout, and sub-acute at the apex. Petiole shining, bearing scattered punctures; postpetiole impunctate, a longish moderately deep fovea in the centre above. Gastrocœli deep, wider than long, aciculate, the sides striated. Abdomen not much longer than the head and thorax together; the base of the second segment longitudinally striated; the following segments closely and strongly punctured, the punctuation becoming weaker until the apical segment is almost impunctate. Legs stout; the hind coxæ punctured, black at the base and apex; the hind trochanters black beneath; the hind femora black except above; the tibiæ with the apical half black; the tarsi incline to fulvous. The scutellum, in the middle, rises nearly equally from the base and apex; the sides project above it into large stout teeth, which are blunt and a little bent at the end. Viewed from the side the scutellum is somewhat triangular. Areolet 5-angled, the lower side distinctly angled; the lateral nervures converging above.

148. **Ichneumon fortispina.** (Tab. VIII. fig. 24.)

Niger, flavo-variegatus; flagello antennarum annulo, maculis 2 mesonoti, apice scutelli, maculis 2 metanoti, pedibus anterioribus tarsisque posticis, flavis. ♂.

Long. 8 millim.

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

Antennæ nearly as long as the body, a little compressed before the apex; the scape white beneath. Head large, dilated behind the antennæ; face flattish; yellow, except behind; the centre of the vertex, and the orbits behind narrowly, black; in the black behind and nearly touching the eyes above is a yellow mark. Thorax black; a short broad mark on the edge of the pronotum, two broad lines in front of the

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scutellum, the apex of the scutellum, the postscutellum, two large marks on the metanotum, the tubercle below the tegulæ, an oblong mark below, a round one below the hind wings, a large mark close to the mesosternum, and an equally large one on the metapleuræ, yellow. Metanotum coarsely punctured and reticulated; the apex semi-oblique, hollow in the centre, the hollow being less strongly punctured than the rest, and with the sides margined. Petiole and postpetiole smooth, impunctate, the latter with a few punctures at the apex. The rest of the abdomen oval, punctured, black; the edge of the second, the third at the apex, and the apical segment almost entirely, yellow; gastrocoeli large, deep, shining, striated, aciculate; a large transverse furrow at the base of the third segment; the second segment strongly, the third and fourth more finely, punctured; the apical segment almost impunctate. Four anterior legs entirely, and the hind tarsi, fulvous; hind coxæ, trochanters, femora, and tibiæ, black; the coxæ yellow behind.

149. *Ichneumon fastidiosissimus*.

Niger; facie, orbitis, annulo flagello antennarum, linea pronoti, maculis thoracis, coxis trochanteribusque anterioribus, macula coxarum posticarum, maculisque lateralibus abdominis, albis; pedibus rufis, coxis trochanteribusque posticis (macula excepto) nigris; alis hyalinis, nervis stigmatibusque nigris. ♂.

Long. 13 millim.

Hab. PANAMA, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

Antennæ nearly as long as the body, stout, covered with a microscopic pile; the third and fourth joints subequal. Face densely covered with white hair, punctured; the clypeus scarcely transverse at the apex; mandibles for the greater part piceous black; behind and above the antennæ (except at the orbits) the head is black. Ocelli raised, a curved deep furrow in front of them. The collar is white and raised in the centre, the raised part being lower than the pronotum close to the mesonotum, and there is also a longish mark on its side; the line on the edge of the pronotum is short, and from it the pronotum runs quite straight and flat to the collar; the pronotum is strongly punctured, the sides shining. Mesonotum strongly punctured all over; the pleuræ in front strongly projecting out from the prothorax; a deep curved hollow in the centre. The carinæ in front of the scutellum are white at the base; the scutellum is white behind; tegulæ, the tubercle below, one about the same size below the fore wings, a large longitudinal mark in the middle of the mesopleuræ, two marks below the hind wings, a roundish mark on the metapleuræ, a small mark on either side of the metanotum, and the tubercles, white. Scutellum largely projecting, almost equally from the base and apex; the sides bluntly keeled; the upper part depressed in the centre, and having a tubercle-like projection on either side. Metathorax coarsely and transversely striated and punctured; the areæ complete; the supramedian area with a longitudinal keel in its centre, from which run strong striations to the sides; it widens towards the apex, and is longer than broad; petiolate area hollowed; tubercles

very large and stout. Petiole smooth and shining, hollowed in the centre, contracted in the middle, the apex aciculate; postpetiole coarsely punctured, the middle bluntly carinate on either side to near the apex. Gastrocoeli transverse, indistinct. The second, third, and the basal half of the fourth segments of the abdomen coarsely and longitudinally punctured; the apex shining and almost impunctate; a transverse white mark on either side of every segment (including the petiole), the marks becoming wider and narrower as the apex is reached; ventral surface white in the centre, the apical segments banded with white. Areolet 5-angled, converging above. Hind coxæ strongly punctured.

The following species has the general form (especially the thorax and abdomen) of *Joppa*, but the antennæ in the female are slender, and not dilated and compressed. The punctuation of the thorax and abdomen varies in intensity. Brullé places the species in *Joppa*, Cresson in *Ichneumon*. Actually it is intermediate between these genera.

150. **Ichneumon (?) conicus.** (Tab. VIII. fig. 22.)

Joppa conica, Brullé, Hymén. iv. p. 286. no. 31; Cresson, Trans. Am. Ent. Soc. ii. p. 29 (♂ ♀)¹.

Ichneumon breviventris, Cresson, Proc. Ent. Soc. Phil. iv. p. 12 (♂)².

Ichneumon conicus, Cresson, Proc. Acad. Phil. 1873, no. 1 (♂ ♀)³.

Hab. MEXICO, Cordova^{1 3} (*Sumichrast*), Orizaba³ (*Sumichrast*, *Bilimek*); BRITISH HONDURAS, Belize (*Blancaneaux*).—ANTILLES, Cuba².

As the punctuation of the thorax and abdomen varies, I have no doubt that the Cuban *I. breviventris* is an aberration, as Cresson suspected.

ÆDICEPHALUS.

Ædicephalus, Cresson, Trans. Am. Ent. Soc. ii. p. 27; Proc. Acad. Phil. 1873, p. 129.

This genus is chiefly remarkable for having the head “unusually large and swollen, very broad behind the eyes, the occiput deeply emarginate,” and the basal foveæ on the second abdominal segment “broad, transverse, and very deep.” Cresson looks upon it as only a subgenus of *Ichneumon*. All the described species are from Cuba and Mexico.

1. **Ædicephalus longicornis.**

Ædicephalus longicornis, Cresson, Trans. Am. Ent. Soc. ii. p. 27 (♀)¹; Proc. Acad. Phil. 1873, p. 129.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

2. *Ædicephalus sororius*.

Ædicephalus sororius, Cresson, Trans. Am. Ent. Soc. ii. p. 28 (♀)¹; Proc. Acad. Phil. 1873, p. 129.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

3. *Ædicephalus glucidatus*. (Tab. VIII. fig. 23.)

Niger, flavo-variegatus; annulo flagello antennarum, scutelli lateribus maculisque 2 mesonoti, flavis; pedibus anterioribus, femoribus posticis supra basique tibiæ et posticarum, nigris; stigmate testaceo. ♀.
Long. 11 millim.

Hab. GUATEMALA, Zapote (*Champion*).

Antennæ as long as the body, thickened and compressed before the apex. Head smooth, shining, impunctate, yellow behind; the vertex in the centre, a band going from the back to the eyes, and the orbits narrowly behind, black; a narrow line runs also from the clypeal foveæ to the side. Thorax shining and almost impunctate, a few punctures on the scutellum; black; a broad line on the pronotum, the prosternum, the meso- and metapleuræ, except a large black space (with a yellow mark in its centre), the sternum, the tegulæ, two broad marks in the middle of the mesonotum, two smaller and more rounded ones in front of the scutellum, the sides of the latter broadly, and the apex narrowly, the suture of the mesonotum, the postscutellum, a transverse line at the base of the metanotum, the apex of the metanotum (except a black line down the centre and a large oval mark occupying the greater part of the metapleuræ), yellow. The base of the metanotum is punctured; the apex transversely striated, with an oblique slope, and scarcely hollowed in the centre. Petiole smooth, shining; postpetiole slightly punctured on the upper part. Gastrocœli transverse, deep, impunctate, almost touching in the centre, the part between black and longitudinally striated; a little beyond the gastrocœli is a deep transverse depression, black, and with large longitudinal striations. The rest of abdomen shining, impunctate, and bearing long scattered hairs; the postpetiole, the depression on the second segment, the base of the same segment broadly, and of the other segments narrowly, black. The hind coxæ are lined with black all round at the base, and have a large black mark behind; the four anterior legs are narrowly lined with black above; the hind femora are black all round at the base and broadly so above, there being, however, a yellow space in the centre of the black; the hind tibiæ are black at the base. The yellow of the legs has a fulvous tinge. Areolet 5-angled, the lateral nervures converging above, the outer nervure with a short bulla; nervures black; the stigma testaceous, black above.

4. *Ædicephalus gracilicornis*.

Ædicephalus gracilicornis, Cresson, Trans. Am. Ent. Soc. ii. p. 28 (♂ ♀)¹; Proc. Acad. Phil. 1873, p. 130.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

5. **Ædicephalus vicinus.**

Ædicephalus vicinus, Cresson, Proc. Acad. Phil. 1873, p. 130 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

ORTEZIA.

Ortezia, Cresson, Proc. Acad. Phil. 1873, p. 130.

In this subgenus the head is small; the scutellum broadly quadrate, shield-like, and perfectly flat; the metathorax broad and without spines or tubercles; the legs short and stout; the abdomen short, broad, ovate, depressed, longitudinally rugose or aciculated, with the segments more or less constricted at the base. (*Cresson*.)

1. **Ortezia egregia.**

Joppa egregia, Cresson, Trans. Am. Ent. Soc. ii. p. 30 (♀)¹.

Ortezia egregia, Cresson, Proc. Acad. Phil. 1873, p. 130.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

2. **Ortezia aciculata.**

Joppa? aciculata, Cresson, Trans. Am. Ent. Soc. ii. p. 30 (♂ ♀)¹.

Ortezia aciculata, Cresson, Proc. Acad. Phil. 1873, p. 130.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

TROGUS.

Trogus, Panzer, Krit. Revis. ii. 1806, p. 80.

The species here included in this genus are typical forms, excepting perhaps *T. excellens*, which has not the scutellum quite so sharply peaked as the others; but it agrees so closely otherwise with *T. ornaticornis* that I do not see how the two can be separated generically. But see my remarks on pp. 136, 137.

- 1 (6). Wings violaceous throughout.
- 2 (3). Anterior half of the thorax and the anterior legs yellowish red . . . *latipennis*.
- 3 (2). Thorax entirely bluish.
- 4 (5). Antennæ broadly white in the middle, the head with only the inner
and lower orbits of the eyes yellow, the palpi blackish . . . *ornaticornis*.
- 5 (4). Antennæ entirely black, face and palpi yellow . . . *excellens*.
- 6 (7). Wings with two violaceous bands . . . *blandita*.
- 7 (6). Wings only violaceous at the apex.
- 8 (9). Abdomen largely marked with yellowish white, a transverse yellow
line on the metathorax, the legs more or less yellow . . . *inclita*.
- 9 (8). Thorax entirely black, the abdomen with only four small yellow
marks; the legs black, except the hind tarsi. . . *pulchripennis*.

1. *Trogus latipennis*.

Trogus latipennis, Cresson, Proc. Acad. Phil. 1873, p. 132 (♀) ¹.

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

2. *Trogus excellens*.

Cærulea; facie (medio excepto), ore, palpis, tibiis tarsisque anticis, flavis; alis nigro-violaceis. ♂.
Long. 17 millim.

Hab. GUATEMALA, Purula (*Champion*).

Head and thorax closely and rather strongly punctured; the middle of the mesopleura more shining and less closely punctured; the base of the metanotum smooth, shining, and impunctate. Petiole punctured, the postpetiole more strongly and closely: a furrow runs through the middle of the latter, the furrow keeled on either side. The rest of the abdomen strongly and coarsely punctured, the punctures running into reticulations on the second and third segments; the apical segments are not so strongly punctured, and the punctures are wider apart. Areæ of the metanotum all present, except the upper median. Scutellum raised into a blunt peak. Gastrocœli large, deep, shining in the centre; the space between the two longitudinally striated. The entire face (except a black line which runs down from the antennæ to the clypeus), the inner orbits of the eye, and the mandibles and palpi, bright yellow. Wings large; areolet broad at the bottom, the lateral nervures curved and meeting above. The abdominal segments are not much constricted at the base.

3. *Trogus ornaticornis*. (Tab. IX. fig. 2.)

Cærulea; antennarum articulis 2^o-10^m flavo-albidis, tibiis anticis sordide albis, alis violaceis. ♂.
Long. 17 millim.

Hab. GUATEMALA, Purula (*Champion*).

Body closely punctured all over; mesopleura transversely and coarsely striated. Front deeply excavated immediately above and below the antennæ; the excavation smooth, shining, and impunctate; eyes projecting, the head retreating behind them; head not buccate. Scutellum not very much elevated above the scutum, shining, covered with scattered punctures, the upper part bluntly rounded, and with a deep depression at the base; postscutellum smooth, shining, impunctate, and with a deep wide transverse suture at its apex. The centre of the metanotum is broadly raised, and more shining and less punctured than the rest; the apex with a rather abrupt slope; coarsely punctured; the central and lateral keels well developed. Basal half of the petiole depressed in the centre, shining, faintly striated; the rest punctured like the other abdominal segments; the petiole at the base with a keel on both sides, which is prolonged into the end along the middle of the thicker apical portion. Abdominal segments convex above, strongly constricted at the base. Gastrocœli deep,

double as wide as long. Coxæ punctured like the abdomen, the punctuation on the femora and tibiæ less strong. Areolet triangular above, the nervures touching, the lateral outer nervure curved. Below each of the antennæ and touching the eyes is a whitish-yellow mark. The entire body is covered with a close, fuscous-black pubescence.

4. **Trogus blandita.** (Tab. IX. fig. 1.)

Trogus blandita, Cresson, Proc. Acad. Phil. 1873, p. 132 (♂ ♀)¹.

Joppa elegantula, F. Smith, Descr. of New Species of Hymen. p. 233 (1879) (♀)².

Hab. MEXICO, Orizaba¹ (*Sumichrast*); GUATEMALA, Cubilguitz, Panzos, Senahu, and Sabo in Vera Paz, Zapôte, Las Mercedes 3000 feet, San Isidro, Coatepeque 1300 feet (*Champion*); COSTA RICA, Cache² (*Rogers*); PANAMA, Volcan de Chiriqui 2500 to 3000 feet, Bugaba (*Champion*).

A common and widely distributed species in Central America.

5. **Trogus inclyta.**

Joppa inclyta, Cresson, Trans. Am. Ent. Soc. ii. p. 29¹ (♀).

Trogus inclyta, Cresson, Proc. Acad. Phil. 1873, p. 133.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

6. **Trogus pulchripennis.** (Tab. VIII. fig. 25.)

Joppa pulchripennis, F. Smith, Descr. of New Species of Hymen. p. 232 (1879)¹.

Hab. GUATEMALA, Cubilguitz (*Champion*); COSTA RICA, Cache¹ (*Rogers*); PANAMA, Volcan de Chiriqui 2000 to 6000 feet, Bugaba 800 to 1500 feet (*Champion*).

JOPPA.

Joppa, Fabricius, Syst. Piez. p. 120.

The species of this genus are probably the most elegant, as regards coloration and shape, among the Ichneumonidæ. Yellow or lemon-yellow is the predominating ground-colour, the head, thorax, and, more rarely, the abdomen being marked with black; the wings are yellowish or hyaline, marked with black, or, more rarely, entirely black. They are (except a few species from India, South Africa, and Australia) natives of the Neotropical region. It is very difficult to point out any characters whereby the species, as a whole, may be distinguished from *Ichneumon*, and especially from *Trogus*.

A. *Areolet triangular, or, at least, with the lateral nervures distinctly converging above; abdomen longitudinally striated**.

Synopsis of the Species.

- 1 (9). Mesonotum without black.
- 2 (8). Wings hyaline, black at base. *apex*
- 3 (4). Head entirely black *melanocephala*.
- 4 (3). Head only black above.
- 5 (6). Hind coxæ entirely yellow, base of second abdominal segment not black, extreme apex of hind femora only black *varipes*.
- 6 (7). Hind coxæ entirely black; metanotum smooth, impunctate; abdomen longitudinally striated *variolosa*.
- 7 (6). Hind coxæ yellow, with two black spots; abdomen longitudinally aciculate, metathorax longitudinally striated *elegantula*.
- 8 (2). Wings entirely black *fumipennis*.
- 9 (1). Mesonotum marked with black.
- 10 (11). Wings entirely yellow *alternans*.
- 11 (12). Wings yellowish, a small fascia at base of radial cellule; metathorax with two short spines behind; petiole black *suturalis*.
- 12 (15). Wings yellowish, the apex smoky.
- 13 (14). Apex of tibiæ and stigma black *melanostigma*.
- 14 (13). Apex of tibiæ and stigma yellow *xanthostigma*.
- 15 (22). Wings yellowish, the base and apex black.
- 16 (19). Pleuræ entirely yellow.
- 17 (18). Scutellum and base of metathorax black *decorata*.
- 18 (17). Scutellum and base of metathorax yellow *incerta*.
- 19 (16). Mesopleuræ black.
- 20 (21). Apex of hind femora black, apex of tibiæ yellow *maculicornis*.
- 21 (20). Apex of hind femora yellow, tibiæ broadly black *hilaris*.
- 22 (27). Wings violaceous, the middle more or less hyaline.
- 23 (26). Pro- and mesothorax and head black, femora broadly black.
- 24 (25). Scutellum flat in centre, third abdominal segment shorter than all the following together *rogersi*.
- 25 (24). Scutellum sharply peaked, third abdominal segment almost longer than all the succeeding together *nigriceps*.
- 26 (23). Pronotum and pleuræ yellow, hind knees only black *modesta*.
- 27 (22). Wings hyaline, apex and one or two fasciæ in the middle black.
- 28 (33). Mesonotum entirely black.
- 29 (30). Pleuræ entirely yellow, hind knees only black *chiriquensis*.

* Brullé (Hymén. iv. pp. 270 & 287) divides the genus into two divisions, but he gives the same distinctive characteristic to both, namely, the possession of a pentagonal areolet. His first section has certainly the areolet pentagonal; but I cannot make out if his second group has it 4-angled, as he does not mention its form in any of the species, other than in the (probably erroneous) sectional heading on p. 287.

- 30 (29). Pleuræ entirely black, femora broadly black.
 31 (32). Metanotum black, a small fascia in middle of hind wings *geniculata*.
 32 (31). Metanotum yellow, no fascia in hind wings *xanthostoma*.
 33 (28). Mesonotum yellow, with three black longitudinal lines; metanotum
 spotted with black *sumichrasti*.

1. **Joppa melanocephala.** (Tab. IX. fig. 4.)

Joppa melanocephala, Cameron, Ent. Mo. Mag. xxi. p. 104¹.

Flavo-testacea; capite, antennis, abdominis apice tarsisque posterioribus, nigris; alis flavo-hyalinis, apice violaceis, stigmatе flavo.

Long. 21–22 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 4000 feet, Bugaba 800 to 1200 feet¹ (*Champion*).

Head shining, smooth, bearing a few shallow punctures, especially on the face; mandibles and palpi yellow. Scape of the antennæ punctured. Sides of the pronotum obscurely striated in front. Mesonotum semiopaque, closely punctured all over, the punctures being more widely separated along the sides. Meso- and metapleuræ punctured, obscurely striated. Scutellum longitudinally striated, the striations large, widely separated, especially at the sides, where they form almost keels; the depression at the base is also striated. Metanotum punctured, transversely striated in the middle; there is one large median area, the base of which is rounded; on either side is another area of nearly equal length; outside of these again is one which is still longer, as it originates further back; there is a deep depression between the smooth, shining, impunctate postscutellum and the metanotum, which rises gradually from this hollow, it being there smooth and shining to the commencement of the median area. Petiole smooth, shining, hollow in the middle, the sides obscurely margined, the apex punctured; postpetiole longitudinally striated, the striations large, the centre hollow. Gastroceli transverse, large, deep, united by a wide furrow, which, like the whole of the segment, is striated; the striation on the abdominal segments is strong, becoming gradually weaker towards the apex of the third, which is scarcely striated there; the apical segments are not striated, but are obscurely punctured. Coxæ punctured. The violaceous cloud in the fore wings commences at the base of the radial cellule.

A specimen from Bugaba has three blackish, almost confluent, marks on the mesonotum. Sometimes the apex of the third segment is blackish and the apex of the clypeus yellow; the scape is sometimes piceous. As in most of the species, the yellow on thorax varies from yellow to fulvous.

2. **Joppa varipes.** (Tab. IX. fig. 9.)

Joppa varipes, Cameron, Ent. Mo. Mag. xxi. p. 104¹.

Flavo-testacea; antennis, vertice, abdominis apice, tarsis, tibiæ apice femoribusque pro parte, nigris; tarsis albidis; alis flavo-hyalinis, apice fumatis, stigmatе flavo.

Long. 11–12 millim.

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Hab. PANAMA, Volcan de Chiriqui 2500 to 6000 feet¹ (*Champion*).

Occiput, the upper part of the back, and the front of the head to the base of the antennæ, except the orbits of the eyes in front, black, smooth, shining, impunctate. Mesonotum shining, bearing a few scattered punctures. Scutellum with prominent longitudinal striations. Metanotum hollow in the middle, the hollow transversely striated; the top smooth, shining, slightly punctured, as are also the sides. Petiole smooth, shining; postpetiole longitudinally striated. Gastrocoeli transverse, shallow, smooth shining; the second, third, and basal three fourths of fourth segment longitudinally striated; the apex of the fourth shining, bearing a few punctures; the other segments impunctate, shining, as are also the coxæ; the third and the following abdominal segments are black entirely, except that there is usually a dark fulvous mark on either side of the third above. Tarsi black, except the anterior pair at the base; femora and the four anterior tibiæ more or less lined with black behind; posterior tibiæ white, black at the extreme base and broadly so at the apex. Labrum in the centre, the apex of the mandibles, and the spurs, black; face and petiole yellowish; the thorax may be testaceous or dark fulvous. The body is closely covered with fuscous pubescence, almost black on the abdomen. The cloud in the apex of the wing commences a little beyond the stigma. The male does not differ in coloration from the female.

3. *Joppa elegantula*.

Joppa elegantula, Cresson, Trans. Am. Ent. Soc. ii. p. 32 (♂)¹.

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

A specimen from Sabo, Vera Paz (*Champion*), is perhaps referable to this species, it differing from the type merely in having the hind coxæ entirely black, and the tibiæ black at the base, and in having a small yellow spot on either side of the third abdominal segment. It differs from *J. varipes* in having only a small triangular black mark on the vertex covering the ocelli, in the hind femora being entirely black, except at the base, and in the hind coxæ being black; the metanotum behind is not so strongly striated, and the second segment is black at the base.

4. *Joppa variolosa*.

Joppa variolosa, F. Smith, Descr. of New Species of Hymen. p. 232¹.

Hab. COSTA RICA, Caché¹ (*Rogers*).

From the typical *J. elegantula* this species differs in having the hind coxæ and trochanters black, except at the extreme apices; the four anterior femora black, except at the base and apex (*elegantula* has the "tips of them behind" only); all the tibiæ black at the base, the front pair lined also with black behind; and the metanotum can scarcely be called "longitudinally rugulose." It is more slender than the above-described variety from Sabo, with which it agrees in the amount and arrangement of

the black; but the tibiae are distinctly white, the two basal segments of the abdomen pallid lemon-white, and the metanotum behind is not so much excavated.

5. **Joppa fumipennis.** (Tab. IX. fig. 11.)

Joppa fumipennis, Cresson, Trans. Am. Ent. Soc. ii. p. 32 (♂ ♀)¹.

Hab. MEXICO, Orizaba, Cordova¹ (*Sumichrast*); GUATEMALA, Panima in Vera Paz (*Champion*); NICARAGUA, Chontales (*Janson*).—VENEZUELA.

A Venezuelan specimen has the tibiae without any yellow annulus; the Guatemalan individual has it very broad on all of them.

6. **Joppa alternans.**

Joppa alternans, Brullé, Hymén. iv. p. 278. no. 16¹.

Hab. MEXICO¹.

7. **Joppa suturalis.**

Joppa suturalis, Brullé, Hymén. iv. p. 281. no. 21¹.

Hab. MEXICO¹.

8. **Joppa melanostigma.** (Tab. IX. fig. 10.)

Joppa melanostigma, Cameron, Ent. Mo. Mag. xxi. p. 104¹.

Flava; antennis, vertice, mesonoto, abdominis apice, geniculis posterioribus læte, tarsisque posterioribus, nigris; alis flavo-hyalinis, apice fumatis, stigmatibus nigro.
Long. 14 millim.

Hab. PANAMA, Bugaba¹, Volcan de Chiriqui 2500 to 3000 feet (*Champion*).

Face pallid yellow (perhaps discoloured), marked with some scattered microscopic punctures; clypeus broad, sharply transverse, the sides rather acute; labrum and the apex of the mandibles black; the top of the head is entirely black, and the black extends, as a triangular prolongation, nearly to the base of the antennæ. Mesonotum shining, impunctate, almost glabrous. Scutellum broad, flat, keeled at the sides, which bear a yellow mark; the top with a few punctures. Metanotum distinctly areolated, punctured, very slightly excavated behind. Postpetiole, the second segment, and the basal three fourths of the third segment, longitudinally striated above, the sides punctured and with a conspicuous keel; apical segments impunctate. The third segment bears a large black mark, contracted at the apex in the middle; the following segments are entirely black. The four anterior knees are only black behind; the posterior knees entirely so, there being double the amount of black on the femora that there is on the tibiae; on the front pair it is much less. The black cloud is present in both wings; the areolet is sharply triangular above.

The specimen from the Volcan de Chiriqui wants the black on the third abdominal segment, and the black on the hind knees scarcely extends on to the femora.

9. *Joppa xanthostigma*.

Joppa xanthostigma, Cameron, Ent. Mo. Mag. xxi. p. 105¹.

Flava; antennis, vertice, mesonoto, mesosterno, abdominis apice, tarsi posterioribus tibiisque posticarum apice, nigris; alis flavis, apice fumatis, stigmate flavo. ♂.

Long. 13 millim.

Hab. COSTA RICA, Caché¹ (*Rogers*).

Body smooth, shining, impunctate, covered with a dense blackish or fuscous pubescence. Petiole shining, impunctate, the rest of the back of the abdomen obscurely punctured, the punctures scarcely visible on account of the pubescence. Metanotum excavated in the middle behind; the areæ obsolete, but there is a curved keel on each side. There is a small black line at the base of the third abdominal segment; the fourth and following segments are black, except a fulvous fascia in the middle of the fourth. Areolet sharply triangular above.

Differs from *J. melanostigma* in the abdomen not being longitudinally striated, in the cloud at the apex of the wing extending to the areolet, in there being no black on the femora, in the breast being black, &c.

10. *Joppa decorata*.

Joppa decorata, Cresson, Trans. Am. Ent. Soc. ii. p. 32 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

11. *Joppa incerta*.

Joppa incerta, Cresson, Proc. Acad. Phil. 1873, p. 131¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

12. *Joppa maculicornis*.

Joppa maculicornis, Cameron, Ent. Mo. Mag. xxi. p. 105¹.

Flava; antennis, capite postice, mesonoto, mesopleuris, metanoti basi, abdominis apice, tarsi posterioribus, femoribusque posterioribus dimidio apicali, nigris; antennarum annulo medio albo; alis nigris, medio flavo-hyalinis.

Long. 12 millim.

Hab. PANAMA, Volcan de Chiriqui 4000 to 6000 feet¹, Bugaba (*Champion*).

Head smooth, shining, impunctate; the black marking does not extend much beyond the eyes behind; in front it reaches the commencement of the frontal depression and projects to a point in the middle, and, to a less extent, on either side; labrum and the apex of the mandibles black. Antennæ stout, as long as the thorax and abdomen together; scape yellow beneath. Thorax densely pubescent; mesonotum shagreened; the black does reach the prothorax at the sides, and there are two short yellow bands at the sides. Scutellum smooth, shining, margined at the sides, broad and raised at the

base, the apex flat, the upper surface covered with scattered microscopic punctures; postscutellum smooth, shining, impunctate; the thorax on either side of it reticulated. Metanotum impunctate, the apex a little excavated in the middle; the areæ distinct. Postpetiole and the second and third segments longitudinally striated above, smooth, with scattered punctures along the sides; base of the fourth segment obscurely striated, the apex slightly punctured; apical segments with scattered punctures, and densely pilose. Sheath of the ovipositor densely pilose. On the anterior femora the black is only behind, on the posterior femora it extends all round. As in most of the species, the yellow on the legs tends to change to fulvous.

13. *Joppa hilaris*.

Joppa hilaris, F. Smith, Descr. of New Species of Hymen. p. 232¹.

Hab. COSTA RICA, Caché¹ (*Rogers*); PANAMA, Bugaba 800 to 1500 feet (*Champion*).

This species is readily known from *J. maculicornis* by the femora being entirely yellow, by the areolet not being triangular at the top, the lateral nervures but slightly converging above, and by the abdomen being perfectly smooth, and not in any way striated.

14. *Joppa nigriceps*. (Tab. IX. fig. 5.)

Joppa nigriceps, Cameron, Ent. Mo. Mag. xxi. p. 105¹.

Nigra; metathorace, abdominis segmentis 1-2, coxis, trochanteribus, femoribus tibiisque pro parte, flavis; alis violaceis, albo-maculatis.

Long. 18-19 millim.

Hab. GUATEMALA, Sabo in Vera Paz¹ (*Champion*); PANAMA, Volcan de Chiriqui¹ (*Champion*).

Head with scattered punctures, aciculated on the top; mandibles and palpi yellow. Mesonotum with scattered punctures, semi-opaque; pleuræ rugose, longitudinally striated, except in the centre of the mesopleura, which is shining, impunctate. Scutellum sharply gibbous, acute at the top, the sides keeled, the space between the keel and the raised central peak hollow. Metapleura transversely striated. Abdomen entirely longitudinally striated above. The anterior femora are black, except at the base and apex and a small part of the middle in front; the intermediate femora have the apical three fourths, and the posterior pair a little more than the apical third, bluish-black. The four anterior tibiæ are bluish-black behind, the posterior tibiæ entirely yellow. Generally the part of the wing between the base and the apex of the stigma is hyaline, and there is usually a hyaline spot in the black basal part. The hind wings are only smoky at the apex. Mandibles, palpi, and a spot on either side of the clypeus, yellow.

15. *Joppa rogersi*.

Joppa rogersi, Cameron, Ent. Mo. Mag. xxi. p. 105¹.

Hab. COSTA RICA, Volcan de Irazu 6000 to 7000 feet¹ (*Rogers*); PANAMA, Volcan de Chiriqui 2000 to 4000 feet (*Champion*).

In size, coloration, and punctuation this species does not differ much, if at all, from the preceding; the only differences of any importance that I can find between them are that the scutellum is not raised into a sharp peak in the centre, it being flat along its entire extent, and traversed by two or three carinae, the sides being also keeled; that the third abdominal segment is shorter than the following segments together (the opposite being the case in *J. nigriceps*), and that the metathoracic areae are all clearly defined, and the pronotum not transversely striated.

16. *Joppa modesta*. (Tab. IX. fig. 8.)

Joppa modesta, F. Smith, Descr. of New Species of Hymen. p. 233¹.

Hab. COSTA RICA, Caché¹ (*Rogers*).

17. *Joppa xanthostoma*. (Tab. IX. fig. 6.)

Joppa xanthostoma, Cameron, Ent. Mo. Mag. xxi. p. 105*.

Nigra; ore, facie, palpis, metathorace, coxis, trochanteribus, femoribus pro parte, tibiis anterioribus pro parte, posticisque fere totis, flavis; alis hyalinis, apice fasciaque medio violaceis.
Long. 20 millim.

Hab. COSTA RICA, Caché (*Rogers*).

Head smooth, shining; the face and sides with some scattered punctures. Mesonotum shining, smooth, finely punctured, the punctures wide apart. Pleurae finely punctured, striated posteriorly. Scutellum flattish, smooth, shining, indistinctly punctured; postscutellum smooth, shining, impunctate. Base of the metanotum smooth, shining, impunctate; the rest irregularly reticulated and striated; the areae not very clearly defined; the metanotum has but a gentle slope, and the centre behind is a little hollowed. Petiole smooth, shining; postpetiole, and the second and third segments, longitudinally striated; the rest of the abdomen impunctate, smooth, and shining. Gastrocoeli large, deep, transverse, shining in the centre; the sides striated. The mandibles, palpi, labrum, clypeus, and the lower orbits of the eyes are yellow, the black extending down the centre of the face from the antennae to the clypeus. The prosternum is yellow, as is also the hind portion of the mesothorax and the whole of the metathorax. The four anterior tibiae and tarsi are entirely black behind; the anterior femora are black, except at the base and apex; the middle femora have about the apical half black; the posterior tarsi are entirely black, as are also the hind

* The localities "Guatemala and Panama," given for this species (*loc. cit.*), are erroneous. I have only seen it from Costa Rica as yet.

knees. The wings are as in *J. geniculata*, except that there is no black fascia in the middle of the hind ones.

A stouter insect than *J. geniculata*, and readily known from it by the absence of black from the metathorax, and of a black fascia in the hind wings.

18. *Joppa geniculata*.

Joppa geniculata, Cameron, Ent. Mo. Mag. xxi. p. 105¹.

Nigro-violacea; facie, metapleuris, abdominis segmentis 1-2, coxis, trochanteribus, femoribus tibiisque pro parte, flavis; alis violaceis, albo-fasciatis.

Long. 16-18 millim.

Hab. GUATEMALA, Cubilguitz¹ and Panima in Vera Paz (*Champion*); PANAMA, Volcan de Chiriqui 2500 to 4000 feet¹ (*Champion*).

Face almost impunctate; mesonotum shining, minutely punctured, the lower part and the sides of the pleuræ punctured. Scutellum flat, the sides bordered, very obscurely striated, and with a few punctures on the top. Base of the metanotum smooth and shining, the rest punctured, striated and reticulated irregularly, the reticulations being most conspicuous on the area next the upper median; middle of the metanotum excavated, but not very deeply. Petiole smooth, shining; postpetiole broad, hollow in the centre, longitudinally striated above; the sides smooth, impunctate; the second and the basal three fourths of the third segment longitudinally striated, punctured at the sides, the apical segment microscopically punctured. The inner and lower orbits of the eyes, the face below the antennæ, the mandibles, and the palpi are lemon-yellow; but there may be a large black mark below the antennæ extending to the clypeus or near to it. The sides of the collar are sometimes more or less yellow. The tibiæ and femora are entirely yellow in front; the anterior ones are almost entirely black behind; the posterior knees and the apices of the tibiæ only are black; the anterior tibiæ are yellowish at the base; the third abdominal segment at the sides is usually yellow above. The metanotum is sometimes yellowish at the sides, and there may be a yellow spot in the centre, or it may be entirely black. The anterior wings are usually violaceous in front of the areolet and behind the stigma, but there is generally a long fascia on the cellule; the posterior ones have the apices and a narrow fascia in the middle violaceous.

19. *Joppa chiriquensis*.

Flava; antennis, vertice, mesonoto, scutello, geniculis posticis tarsisque posterioribus, nigris; alis hyalinis, bifasciatis, stigmatibus nigro.

Long. 12 millim.

Hab. PANAMA, Volcan de Chiriqui 2500 to 3000 feet (*Champion*).

Smooth, shining, impunctate. Metanotum obscurely and irregularly reticulated; postpetiole and the second and third abdominal segments strongly longitudinally striated.

Gastrocoeli transverse, narrower on the inner side. The black on the vertex extends right across and halfway down behind, and in front projects into a sharp triangle. The mesonotum is black to the scutellum; the latter may be entirely black or have the sides yellow. There is an irregular black mark in the centre of the second and third segments at the base. The anterior tibiæ and the apices of the femora have an obscure black line on the upper side. The apices of both wings are broadly infuscated, and there is also, in both, a large fascia before the middle.

— 20. **Joppa sumichrasti.** (Tab. IX. fig. 7.)

Joppa sumichrasti, Cresson, Trans. Am. Ent. Soc. ii. p. 31 (♂ ♀) ¹.

Hab. MEXICO, Orizaba, Cordova ¹ (*Sumichrast*); GUATEMALA, Cerro Zunil 4000 to 5000 feet, Panama in Vera Paz (*Champion*).

This is a variable species so far as the quantity of black on the thorax and abdomen is concerned. It is easily known from *J. chiriquensis* by the black on the mesonotum being divided, by there always being black on the metanotum, and by the stigma being yellow.

B. *Areolet quadrangular, large, a little longer than broad, scarcely angled in the middle, where the recurrent nervure is received; gastrocoeli semiobsolete; abdominal segments not striated.*

21. **Joppa maculicollis.**

Flava; antennis, vertice, macula pronoti, tegulis, mesonoto cum scutello, abdominis apice, coxis posticis, femorum posticorum dimidio basali, tarsis posterioribus tibiisque posticis, nigris; alis hyalinis, stigmate et apice nigris. ♀.

Long. 18 millim.

Hab. PANAMA, Bugaba (*Champion*).

Antennæ as long as the body, of the usual form; the scape yellow on the lower side. Head impunctate; the tips of the mandibles, the vertex in the centre in front and broadly behind, black. Pro- and mesothorax impunctate, shining. Metanotum transversely striated, except in the centre behind, and without distinct tubercles. Scutellum keeled along the sides. Abdomen a little longer than the head and thorax; the apex obliquely truncated and a little compressed laterally. Petiole smooth, impunctate; the other segments obscurely aciculate. Gastrocoeli semiobsolete. The sheaths of the ovipositor originate from the bottom of the venter and are directed obliquely upwards, projecting above the top of the dorsum.

ABZARIA

Eyes margined; two, slightly curved, compressed laterally, a little dilated at the apex, tubercles on the hollow above the antennæ. Scutellum not margined. Petiole

bluntly carinate; postpetiole strongly punctured, more than double as wide as high. Gastrocœli obsolete. Areolet 5-angled, the lateral nervures converging and nearly touching above. Head not buccate. Metathoracic spiracles large, acutely oval.

The form of the petiole, it being broader than high, places this genus in the "*Ichneumonoides platyuri*" of Wesmael, but it is very distinct from any of the genera of that group.

1. *Abzaria latipetiolaris*. (Tab. IX. fig. 3.)

Nigra; antennis (annulo excepto), facie, orbitis, palpis, linea pronoti, tegulis, lineis 2 mesonoti, scutello, maculis 2 mesopleuralibus, maculis 6 metathoracis, abdominis segmentibus apicibus pedibusque, flavis; alis hyalinis, stigmatibus nigro.

Long. 13 millim.

Hab. MEXICO, Orizaba (*Bilimek*).

Head narrower than the mesothorax, retreating behind the eyes, which are margined, the margin being especially developed on the inner side; ocelli raised; clypeus almost transverse at the apex; labrum with a long fringe of hair; clypeal foveæ large, deep; face punctured. The head is black behind and on the vertex, except at the eyes; the rest entirely yellow, except the mandibles at the base and apex, where they are piceous-black. Antennæ stout, opaque, covered with a microscopic down; the joints closely joined together. Thorax smooth, shining, impunctate, sparsely covered with scattered down. The yellow line on the pronotum is broadest in the middle, and does not extend the entire length; the two lines on the mesonotum are shorter and thinner; the marks on the mesopleuræ are large, the upper one somewhat triangular, situated immediately below the tubercles under the tegulæ (these being also yellow) and smaller than the other, which is in the centre near the sternum; the mark on the metapleura is oval and shorter than the smallest on the mesopleura. The pleuræ are sparsely impressed with large punctures. Scutellum large, flattish. Metanotum coarsely and rugosely reticulated; the apex semiperpendicular; the areæ distinct; petiolate area wide; supramedian area much wider than long, smooth, shining, impunctate, except at the extreme apex, where it is rugose; tubercles blunt; there is a yellow mark on either side at the base and a larger one on either side of the apex close to the top. Abdomen covered all over with large, clearly separated punctures. The legs are entirely yellow, except the knees, a line above the hind femora, the hind trochanters, and a large mark at the base and a smaller one at the apex on the inner side of the posterior coxæ, all black.

Subfam. *CRYPTINÆ*.

This extensive group is very numerously represented, especially by species of the genus *Mesostenus*, in the Neotropical Region. I question if it can be separated from the "*Ichneumonoides*" by any one character; but generally the "*Cryptides*" are to be known from them by the ovipositor projecting to a greater or less extent, by there usually being

a well-defined longitudinal suture on the mesopleura, by the second abdominal segment not bearing gastrocœli, while generally the mesonotal sutures are distinct.

The areolet is 5-angled, never petiolate, sometimes large, often very small; the outer nervure not unfrequently pellucid or entirely absent. The abdomen is depressed, its petiole slender, and in the male the postpetiole is rounded, or at least not distinctly transverse, never sessile. The metathoracic areæ are never so well-developed as in the "Ichneumonides"; often they are absent entirely. There are sometimes one or two transverse keels on the metanotum, often none. Many species have well-developed spines on the metathorax.

The generic distinctions are often far from clear. If we use the generic names as defined by Gravenhorst and the older authors, we can, as a rule, refer our species to such genera as *Cryptus*, *Mesostenus*, *Phygadeuon*, and *Hemiteles*; but if we were to limit them according to the views of Förster and Thomson, as these authors have arranged the European species, we should be under the necessity of creating numerous new genera. In the present state of the science, however, it seems to me very undesirable to do so.

CRYPTUS.

Cryptus, Fabricius, Syst. Piez. p. 70.

This is a genus of world-wide distribution. In Central America we find two well-marked groups—one of a northern type, with black head and thorax and red abdomen; the other with reddish bodies, and the wings fuscous with yellow bands, or yellow with fuscous bands; this latter type of coloration being a not uncommon one in South America.

A. *Head and thorax black; abdomen red.* (Species 1–6.)

a. *Legs black.* (Species 1–5.)

1. *Cryptus bicolor.* (Tab. IX. fig. 12.)

Cryptus bicolor, F. Smith, Descrip. of New Species of Hymen. p. 231¹.

Hab. COSTA RICA, Volcan de Irazu 6000 to 7000 feet¹ (*Rogers*).

This is a larger and stouter species than *C. montezuma*; the silvery pubescence on the head and thorax is, if anything, denser; the scutellum more shining, and with the shallow punctures more widely scattered; the triangular area found in the middle of the metanotum in *C. montezuma* is not clearly defined, nor is there an angled cellule at its base; the lower transverse keel is not angled at the sides, it forming a curve from side to side, while in the other species it is quite straight in the middle, and with the sides angled, while the abdomen is stouter and longer.

2. *Cryptus montezuma*.

Niger; abdomine (basi excepta) rufo; alis fumatis; terebra quam abdomen fere longiore.
Long. 13 millim.; terebra $6\frac{1}{2}$ millim.

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

Head and thorax finely and closely rugose; a tubercle beneath the antennæ; the inner orbits obscure yellowish-white; face projecting; front deeply excavated above the antennæ, shining, transversely striated. Antennæ longish; first joint of the flagellum nearly as long as the two following together, the basal joints thickened at their apices. Mesonotal sutures subobsolete; scutellum as closely punctured as the rest of the mesothorax, the sides carinate. Metathoracic areæ mostly clearly defined, the basal area indistinct, the supramedian much broader than long, of the lateral areæ only the spiracular is defined; there is a blunt broad tooth on either side in front; from this a keel curves up to the top, joining the keel of the supramedian area at the side, this latter area being quite straight at the bottom. Petiole aciculated, the sides carinate, the basal three fourths black; apex scarcely aciculate; the rest of the abdomen shining, obscurely aciculate. Areolet 5-angled, the sides converging at the top, so that it is there not half the length that it is at the bottom.

This species may be known from *C. americanus*, Cresson, by the smoky wings; by the first joint of the flagellum being much longer than the second, by the strongly punctured scutellum, and by the carinæ on the petiole extending to the extreme apex.

3. *Cryptus monticola*.

Long. $8\frac{1}{2}$ millim.; terebra 3 millim.

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

Similar in coloration to the preceding species, but differing otherwise in having the head and mesonotum less strongly punctured, the punctures being clearly separated; by the clypeus being separated from the projecting face by a transverse depression; by the sutures on the mesonotum being distinct, broad, and deep. The scutellum is shining, with only scattered punctures, and the sides are not carinate; the carina which runs from the tubercles at the side of the metathorax is not straight above nor angled where it touches the supramedian area; the basal and lateral areæ are obsolete, and a curved oblique suture runs from near the spiracles to the posterior coxæ, while the terebra is only about three fourths of the length of the abdomen. The first joint of the flagellum is about one third longer than the second.

4. *Cryptus nivalis*.

Niger; abdomine rufo, basi et terebra nigris; alis fumatis.
Long. 10 millim.

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

Antennæ as long as the body, stout, third joint longer than the fourth, almost bare. Head coarsely and closely punctured, bearing an indistinct fuscous pile; face flat, the clypeus projecting in the middle. Thorax closely and rather strongly punctured; mesonotal sutures obsolete; scutellum rather flat, shining, longer than broad, the sides keeled, the top bearing widely set-apart punctures. Metathorax with two transverse arcuate keels, the space between them reticulated, the rest coarsely punctured; the pubescence silvery-white. Abdomen shining, the petiole laterally keeled; terebra scarcely so long as the petiole. Wings short; areolet broader than long, the lateral nervures straight. Coxæ and trochanters punctured, covered with a silvery pile; a reddish ring at the base of the hind femora; anterior tarsi, tibiæ, and the apices of the femora, dirty white in front.

The short ovipositor separates *C. nivalis* from the rest of the black-legged species; the obsolete parapsides form another distinctive character.

5. *Cryptus argentifrons*.

Niger; tibiis, tarsi anterioribus apiceque tarsorum posteriorum, albis; abdomine rufis, basi et apice nigris; alis fere hyalinis, nervis et stigmatibus nigris. ♂.

Long. 12 millim.

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

Antennæ nearly as long as the body, stout, densely and shortly pilose; the third joint a little longer than the fourth. Head closely punctured all over, covered with a silvery-white pubescence; a large roundish flat tubercle below the antennæ; clypeus projecting, more shining than the rest of the head, its apex and the inner orbits dirty white. Thorax densely punctured, covered with a silvery-white pubescence; mesonotal sutures deep. Scutellum shining, punctured, the punctures wide apart; the sides at the base keeled. Metathorax covered with long silvery-white hair; a short, blunt tubercle at the side. Abdomen longer than the head and thorax together; petiole obsoletely keeled laterally, shining, the top a little depressed at the base; genital organs large, black, minutely punctured. Legs longish; coxæ punctured, covered with longish silvery-white hair. The anterior femora are white in the middle in front; the tibiæ and tarsi almost wholly white; the metatarsus and the apical joint of the hind tarsi are white. Areolet moderate, the lateral nervures converging above.

Allied to *C. albitarsis*, Cresson.

b. *Legs red.* (Species 6.)

6. *Cryptus sodalis*.

Niger; abdomine, femoribus, tibiis tarsisque, rufis; alis hyalinis.

Long. 10 millim.; terebra 5 millim.

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

Head and thorax closely rugose all over, semiopaque, covered with short, white, glistening pubescence; eyes narrowly edged with white; clypeus projecting roundly in the middle; a short tubercle on the face below the antennæ. The antennæ are nearly as long as the body; the base of the flagellum is obscure testaceous, the third and the fourth joints obscure white; first joint of the flagellum as long as the second and third together, the third joint a little longer than the fourth. Mesonotal sutures subobsolete. Scutellum shining, with some punctures on the top, the sides rugose. Metathorax more strongly rugose than the mesothorax; its areæ obsolete; a distinct blunt spine on either side, united by a carina which goes round the top. Petiole shining, depressed in the centre at the base, the sides keeled above, the apex aciculated, the extreme base black; the rest of the abdomen finely and closely punctured. Hind femora curved. Areolet 5-angled, the sides scarcely converging above.

Closely allied to *C. persimilis*, Cresson, but that species is easily known from it by having the first joint of the flagellum not much longer than the second, the thorax "polished and feebly punctured," and without a tooth on either side of the metathorax.

B. *Black, marked with white.* (Species 7-13.)

7. **Cryptus aztecus.**

Cryptus aztecus, Cresson, Proc. Acad. Phil. 1873, p. 133. no. 1' (♀)¹.

Hab. MEXICO, Cordova, Orizaba¹ (*Sumichrast*).

8. **Cryptus tantillus.**

Cryptus tantillus, Cresson, Proc. Acad. Phil. 1873, p. 134. no. 2 (♂)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

9. **Cryptus tenuiventris.**

Cryptus tenuiventris, Cresson, Proc. Acad. Phil. 1873, p. 134. no. 3 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

10. **Cryptus celaya.**

Cryptus celaya, Cresson, Proc. Acad. Phil. 1873, p. 135. no. 4 (♀)¹.

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

11. **Cryptus arcuatus.**

Cryptus arcuatus, Cresson, Proc. Acad. Phil. 1873, p. 135. no. 5 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

12. **Cryptus transversus.**

Cryptus transversus, Cresson, Proc. Acad. Phil. 1873, p. 136. no. 6 (♀)¹.

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

13. *Cryptus angulatus*.

Cryptus angulatus, Cresson, Proc. Acad. Phil. 1873, p. 136. no. 7 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

C. *Thorax black and white, wings hyaline.* (Species 14.)

14. *Cryptus citus*.

Cryptus citus, Cresson, Proc. Acad. Phil. 1873, p. 137. no. 8 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

D. *Ferruginous, wings banded with fuscous, or fuscous banded with yellow.*
(Species 15 to 22.)

15. *Cryptus solabilis*. (Tab. IX. fig. 15.)

Ferrugineus, nitidus; antennis nigris, medio annulo flavo, basi rufa; alis hyalinis, apice fumatis, nervis nigris; apice tarsorum nigro. ♀.

Long. 10 millim.

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

Antennæ, if anything, longer than the body, bare, the third joint nearly one fourth longer than the fourth; apex thickened and compressed as in *Joppa*. Face flat, pallid; clypeus rounded at the apex, flat, a shallow fovea on either side at the base; teeth of the mandibles black. If anything, the head is broader than the mesothorax. Mesonotum finely punctured, the furrows obsolete. Scutellum shining, narrow, the apex longitudinally striated (the striations large, and continued to the postscutellum); the sides keeled, the keel sharp, and very large on the sides of the fovea at the base. Metathorax rugose, with two nearly straight, transverse furrows; tubercles acute, double as long as broad, curved. Petiole longish, curved, the postpetiole shining; the rest of abdomen shining, impunctate, the apex acute, a little compressed, and covered with longish yellow hair; ovipositor short, not longer than the second segment, the sheath pallid red.

16. *Cryptus unifasciatus*.

Ferrugineus; tarsi postici annuloque antennarum, flavis; alis hyalinis, medio fumato. ♀.
Long. 9-10 millim.

Hab. PANAMA, Volcan de Chiriqui 3000 to 4000 feet (*Champion*).

Head, pro- and mesothorax, finely and closely punctured, opaque, covered with short, glistening white pubescence; face projecting in the centre; apex of the clypeus shining, scarcely transverse; apices of the mandibles piceous-black. The antennæ originate from distinct tubercles; they are stout, and the third joint is longer than the fourth.

Mesonotal sutures almost obsolete. Scutellum carinated at the sides throughout. Metanotum coarsely rugose; there are two transverse carinae, both curved upwards, in the centre, the upper one joined to the base of the metanotum by two short keels, which form a small triangular area; tubercles stout, double as long as broad. Petiole shining, smooth, the postpetiole obsoletely punctured; the rest of the abdomen finely and closely punctured, opaque. Ovipositor a little longer than the petiole. The hind legs are much darker than the others, the ferruginous tinge being obscured with fuscous. Areolet square; stigma blackish, reddish at extreme base. The base of the wings is slightly obscured with fuscous.

17. **Cryptus xanthostigma.** (Tab. IX. fig. 14.)

Cryptus xanthostigma, Brullé, Hist. Nat. Ins. Hymén. iv. p. 190.

Hab. MEXICO, Ciudad in Durango (*Forrer*); GUATEMALA, near the City, Cerro Zunil (*Champion*).

Dark ferruginous; the flagellum of the antennae (except joints 3–10, which are yellowish-white), the fovea at the base of the scutellum, its keels, the apex of the mesonotum, the base of the second and third abdominal segments, the ovipositor, and the greater part of the four posterior legs, black. Wings fuscous, a broad yellow band in the middle of both, and a smaller one (which does not go completely across, and is narrowed posteriorly) at the apex of the stigma, which is yellow, black at the apex. Opaque, finely and closely punctured, the metathorax more strongly than the rest of the body; covered with a close glistening pubescence, which is, if anything, stronger laterally. Metanotum with blunt tubercles, not very clearly differentiated from the transverse keel, which does not extend completely across, being interrupted in the middle. Abdomen very finely and closely punctured, the punctuation almost hidden by the white, short pubescence. Petiole shining, nearly impunctate. Ovipositor, if anything, longer than the abdomen. The hind legs are black; the middle pair black, dark ferruginous in front; the front pair ferruginous; the coxae and femora inclining to ferruginous behind. Areolet 5-angled, the lateral nervures scarcely converging above, the outer ones bulged; below, the recurrent nervure is received a little beyond the middle.

The male has the antennae longer, and the joints 3–13 of the flagellum yellowish, with a tinge of ferruginous, and closely pilose. The four anterior legs have less black, the tarsi are lighter in tint, and the two basal joints of the hind pair are yellowish, ferruginous at the extreme apex. The pubescence on the thorax is denser (especially on the metathorax), and above it is darker; the upper transverse keel on the metanotum is more distinct (in the female it is semiobsolete); the first segment of the abdomen is longer and more slender, and the postpetiole bears a few punctures.

The amount of black on the legs varies in both sexes, the black running into ferruginous. I rather think the species I have described is not identical with *C. xantho-*

stigma, but as there are several species, not very clearly differentiated, of similar coloration, I prefer not to consider it distinct.

18. *Cryptus calipterus*.

Cryptus calipterus, Say, Bost. Journ. Nat. i. p. 234¹; Complete Writings, ii. p. 690; Cresson, Trans. Am. Ent. Soc. iv. p. 158².

Hab. NORTH AMERICA, Texas².—MEXICO¹.

19. *Cryptus fulvus*.

Cryptus fulvus, Taschenberg, Zeits. f. d. ges. Naturwiss. xlviii. p. 66 (1876)¹.

Hab. MEXICO¹.

20. *Cryptus hebetis*. (Tab. IX. fig. 13.)

Ferrugineus, apice antennarum læte, apice metanoti abdominisque segmento 3^o basi, nigris; tarsis posticis flavis; alis flavo-hyalinis, fusco-bifasciatis. ♀.

Long. 11 millim.

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

Antennæ as long as the thorax and abdomen together; of nearly uniform thickness; the middle joints yellowish, the base ferruginous; the third joint as long as the fourth. Head as broad as the mesothorax, finely rugose, opaque; a blunt, large, semicircular tubercle below the antennæ; clypeus rounded at the apex, projecting, the oral region and two irregular lines on the face blackish; the depression above the antennæ shining, blackish. Thorax finely rugose; mesonotal furrows obsolete. Scutellum elevated above the scutum, having a gradual slope to the apex; the sides hollowed. Metathorax hollowed in the centre behind, with an oblique slope, with two large broad tubercles, the carinæ obsolete; below the spiracles hollowed, the apex transversely and indistinctly striated; all the sutures broadly black. Abdomen finely and closely punctured, opaque; the basal half of the petiole black, shining, almost impunctate, the apical half and the postpetiole finely punctured; the apex broad compared to the base. The apices of both wings are smoky, the hind pair faintly; the apical fascia extends from the middle of the stigma to a little beyond the areolet, the basal fascia to either side of the basal nervure; areolet longer than broad, bluntly 5-angled, the lateral nervures converging above.

21. *Cryptus fraternans*.

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

Identical in coloration with *C. hebetis*, except that the thoracic sutures are scarcely black; differing otherwise in having the antennæ a little shorter and stouter; in the face below the antennæ projecting more; in the clypeus being surrounded behind by a much more distinct furrow; the head also bearing no black at all; in the scutellum

being broader and not so much hollowed at the sides; in the metanotum having two distinct keels, both bending upwards in the middle; in the tubercles being very obtuse; in the abdomen being broader, the petiole without black; in the areolet projecting much more, and sharper on the lower side, the recurrent nervure, too, not being received in the middle, as in *C. hebetis*; and the ovipositor a little longer, the sheaths in both species being rufous. In *C. fraternans* the mesosternal furrow is semiobsolete; in *C. hebetis* it is deep and conspicuous.

Allied to the Texan *C. sororius*, Cresson.

22. *Cryptus guatemalensis*.

Ferrugineus; lineis mesonoti, apice tibiæ posticarum læte terebraque, nigris; antennis longis, rufis, articulis 3°, 4° et apicibus læte, nigris; alis flavo-hyalinis fusco-bifasciatis, stigmate flavo, apice nigro. ♀. Long. 12 millim.

Hab. GUATEMALA, Dueñas (*Champion*).

Antennæ longer than the body, the base of the flagellum thin, the rest thicker. Head broader than the thorax, finely and closely punctured, except the depression above the antennæ; sparsely covered with a silvery pile; front broadly projecting below the antennæ, the projecting part separated by a depression from the clypeus, which also projects; tips of the mandibles black. Thorax opaque, finely and closely punctured; the mesonotal furrows obsolete, except in front; two broad black lines in the centre, and a shorter one at the side, black. Scutellum flattish, the sides not hollowed. Metathorax with a gradual slope, the apex hollowed, and with two transverse keels in the middle; without tubercles. Petiole rather broad; the postpetiole punctured, the punctures wide apart, the extreme apex shining and impunctate. Abdomen finely punctured, the junction of the segments shining, impunctate; ovipositor as long as the hind tibiæ. Anterior tibiæ and the hind tarsi obscure yellow. Areolet 5-angled, the lateral nervures converging towards the top, the bottom forming a moderately sharp angle; the recurrent nervure received a little before the middle. The fasciæ on the wings are as in *C. fraternans* and *C. hebetis*, but narrower, and scarcely so deep in tint.

Easily known from the two preceding species by the longer and thinner antennæ, which have the fourth and fifth joints black, and the middle not yellowish; in the mesonotum being marked with black, the abdomen without a black band on the third segment; in the punctured postpetiole, the black sheath of the ovipositor, &c. The mesosternal suture is indistinct.

JOPPIDIUM.

Joppidium, Walsh, Trans. St. Louis Acad. Science, iii. p. 69.

This genus, so far as at present known, is peculiar to America. The antennæ in the female are like those of *Joppa*, but those of the male differ; it also diverges from that

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genus in the ovipositor being long, the petiole longer and more slender, and in the second segment of the abdomen having no gastrocœli.

1. *Joppidium dubiosum*.

Joppidium dubiosum, Cresson, Proc. Acad. Phil. 1873, p. 138 (♂ ♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

2. *Joppidium ardens*.

Joppidium ardens, Cresson, Proc. Acad. Phil. 1873, p. 138 (♂ ♀)¹.

Hab. MEXICO, Cordova, Isthmus of Tehuantepec¹ (*Sumichrast*).

3. *Joppidium ruficollæ*. (Tab. IX. fig. 16.)

Ferrugineus; metathorace, coxis posterioribus, trochanteribus, femoribus tibiisque posticis, nigris; pedibus anterioribus fulvis, tarsis posticis (apice excepto) flavis; alis fuliginosis. ♂ ♀.

Long. 15–16 millim.; terebra 5 millim.

Hab. MEXICO; GUATEMALA, San Gerónimo, San Joaquin in Vera Paz (*Champion*).

Antennæ scarcely so long as the abdomen and metathorax together; stout, thickened and compressed towards the apex; black, reddish at the base, a broad yellow ring a little beyond the middle. Head narrower than the mesothorax, retreating behind the eyes; covered sparsely with white pubescence, especially laterally, the vertex impunctate, the face with scattered punctures; clypeus shining and also punctured; tips of the mandibles black. Mesonotum shining, obsoletely punctured, the furrows deep; the pleuræ longitudinally and finely punctured. Scutellum shining, impunctate, covered with longish fuscous hair, not much raised above the mesoscutum, the fovea at the base not very deep. Metanotum above the upper transverse carina shining, punctured; below it strongly striated transversely; a broad deep furrow on either side; the second transverse carina obsolete, the first nearly straight; metapleuræ longitudinally striated. Petiole long, curved, shining, impunctate; the rest of the abdomen microscopically aciculate, covered with a microscopic down; the greater part of the third and the following segments entirely reddish. Coxæ and trochanters shining, impunctate, covered with long blackish hair. Areolet 5-angled, broader than long, a distinct angle on the lower side; the lateral nervures parallel.

The male has the antennæ longer and entirely black, except a small yellow ring; the thorax black from behind the base of the scutellum, and the abdomen entirely black; all the coxæ are black, and the middle femora blackish at the basal half, while the base only of the hind tarsi is yellow.

In most females the hind tibiæ are fulvous at the base.

4. *Joppidium cæruleipenne*. (Tab. IX. fig. 17.)

Ferrugineus, nitidus, lævis; femoribus, tibiis tarsisque posticis, nigris; flagello antennarum nigro, annulo albo; ♂ abdomine (basi excepta) nigro.

Long. 15–16 millim.

Hab. PANAMA (*Boucard*), David in Chiriqui (*Champion*).

Uniformly shining, impunctate, covered with a white pubescence. Antennæ stout, thickened and slightly compressed towards the apex. Stigmatic tubercles on the petiole distinct; a longish fovea on the top of the postpetiole.

5. *Joppidium donabile*.

Joppidium donabilis, Cresson, Proc. Acad. Phil. 1873, p. 139 (♂ ♀)'.

Hab. MEXICO, Cordova¹ (*Sumichrast*), Valladolid in Yucatan (*Gaumer*).

6. *Joppidium yucatanense*. (Tab. IX. fig. 18.)

Ferrugineus; apice antennarum nigro, medio sordide flavo; alis nigris. ♀.

Long. 12 millim.; terebra fere 4 millim.

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

Antennæ as long as the thorax and abdomen together; stout, thickened towards the apex, the third and fourth joints equal. Head a little broader than the mesothorax, punctured and semiopaque, except above the antennæ; front projecting in the middle, a furrow on either side of it; clypeus projecting, a semitransverse furrow at its base; a distinct furrow runs down from the ocelli to the antennæ, through the centre of the depression. Mesonotum minutely punctured, the furrows distinct in front; the pleuræ longitudinally striated (the striations large and curved). Scutellum shining, faintly punctured. Metathorax strongly transversely punctured; the base (behind the upper transverse keel) aciculate and sparsely punctured; the second transverse keel interrupted in the middle; without tubercles. Petiole smooth, impunctate, and shining; the postpetiole raised a little in the centre, a longish depression at the sides. The remaining abdominal segments semiopaque, and finely and closely punctured; sheaths of the ovipositor black. Legs longish, stout. Areolet longer than broad, the lower side somewhat acutely angled, the recurrent nervure received a little before the middle; stigma black, obscure testaceous on the lower side.

7. *Joppidium fuscipenne*.

Cryptus fuscipennis, Brullé, Hist. Nat. Ins. Hymén. iv. p. 189. no. 5¹.

Hab. MEXICO¹.

This species comes very near the preceding, but is probably distinct. The metathorax has "four elevated oblique lines," and is rugose on the back; the antennæ appear to

be entirely black, except the yellow middle ring; the second and third abdominal segments are marked on either side, at the base, with a large brown mark; the pleuræ only finely striated.

PHYGADEUON.

Phygadeuon, Gravenhorst, Ichneum. Europ. ii. p. 635.

A genus widely distributed over the temperate regions of the globe, and no doubt also in the warmer parts.

- 1 (2). Body and legs entirely rufous; stigma testaceous *semifumatus*.
- 2 (3). Body and legs reddish; apex of abdomen, and more or less of femora, coxæ, and trochanters, black; stigma black, white at base *alpinus*.
- 3 (6). Thorax black, marked with white; metathorax pale testaceous; legs and abdomen pale honey-yellow.
- 4 (5). Wings hyaline; face black *satageus*.
- 5 (4). Wings smoky; face white *albicollis*.
- 6 (7). Thorax entirely black; antennæ with a white annulus; legs and abdomen honey-yellow *zapotecus*.
- 7 (6). Thorax, antennæ, legs, and base of abdomen black, the remainder of abdomen rufous *melanopoda*.

1. *Phygadeuon semifumatus*.

Ferrugineus; antennis nigris, basi rufa, medio flavo; tegulis flavis, abdominis basi nigra; alis subfumatis, stigmatibus fusco, basi pallida. ♂.

Long. fere 9 millim.

Hab. MEXICO (*Sallé*).

Antennæ thickish, densely pilose, as long as the body, the third and fourth joints subequal. Head nearly as broad as the mesothorax, punctured, covered with silvery-white pubescence; front projecting, the middle forming an indistinct roundish tubercle; clypeus at the base surrounded by a semicircular furrow, the apex bluntly rounded; tips of the mandibles black, the palpi yellow. Thorax punctured; mesonotal sutures almost obsolete. Scutellum shining, yellowish, broad at the base, flattish, almost impunctate. Metathorax with a gradual slope, more shining than the mesonotum, covered (especially on the sides) with longish pale hair, and scarcely punctured; basal area distinct; supra-median area longer than broad; tubercles blunt, short. Abdomen shining, impunctate, covered (particularly on the sides) with pale pubescence. Areolet with a distinct projecting angle on the lower side; the lateral nervures converging.

2. *Phygadeuon albicollis*.

Rufus; antennis, vertice, pronoto, mesonoto apiceque tarsorum posticorum, nigris; facie, orbitis, prosterno, linea pronoti, tegulis maculaque mesopleurali, albis; alis fumatis. ♀.

Long. 7 millim.

Hab. PANAMA, Bugaba (*Champion*).

Antennæ thick, semi-involute, nearly as long as the thorax and abdomen together; the third joint a little longer than the fourth. Head thick, white, except the middle of the vertex and the occiput; clypeal foveæ large; face covered with a longish white pubescence. Thorax impunctate; metapleuræ obscurely striated; middle area on the metanotum broader than long, the other areae distinct; spiracular area obscurely transversely striated. The prothorax is black, except the prosternum and a broad white line on the pronotum; the mesonotum is entirely black (unless the scutellum may be white, a fact which I cannot make out, the large pin going through it); below the tegulæ the mesopleuræ are, for the greater part, white; the suture of the metapleuræ is obscure white; the metathoracic tubercles are large, semiacute. Abdomen shining, impunctate. Legs stout; four anterior coxæ and trochanters yellowish-white, the rest of the legs reddish. Areolet 5-angled; outer nervure bullated.

3. *Phygadeuon satageus*.

Phygadeuon satageus, Cresson, Proc. Acad. Phil. 1873, p. 140 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

4. *Phygadeuon zapotecus*.

Phygadeuon zapotecus, Cresson, Proc. Acad. Phil. 1873, p. 40 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

5. *Phygadeuon alpinus*.

Rufus; apice antennarum abdominisque apice nigris, femoribus tibiisque posticis fuscis; flagello antennarum medio flavo; alis hyalinis, stigmatibus nigro, basi alba. ♀.
Long. 8 millim.

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

Antennæ stout, involute; the third joint not much longer than the fourth; the others becoming gradually shorter and a little thicker towards the apex. Head and thorax finely punctured, opaque; the clypeus shining, impunctate; mandibles black at the apex. Mesonotum more shining than the pleuræ, and less strongly punctured; covered with pale pubescence. Metathorax longish, the apex with an oblique slope, its centre hollowed and transversely striated; the upper median area longer than broad, its apex transverse and narrower than the central part; the base triangular; without tubercles. Postpetiole aciculate; the rest of the abdomen obscurely aciculated to the apex, which is shining and covered with longish white pubescence, the apex itself obliquely truncated; the ovipositor a little longer than the abdomen. Areolet broader than long; the outer nervure semiobsolete. Legs stout; the trochanters, hind coxæ, and femora more or less blackish.

6. *Phygadeuon melanopoda*. (Tab. X. fig. 22, ♀.)

Niger; abdomine (petiolo excepto) rufo; alis hyalinis, stigmatibus nigro. ♀.
Long. fere 7 millim.

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

Head and thorax opaque, covered with pale pubescence, closely punctured, the thorax more strongly punctured than the head. Antennæ thick, involute; third joint about one fourth longer than the preceding, the others becoming gradually shorter, the apical joint being much broader than long. The mesonotum is more shining than the head or pleuræ; the punctures are not so closely pressed together; the sutures obsolete, except very slightly in front. Scutellum indistinctly keeled at the sides towards the base. Areæ on the metanotum distinct, the upper median area longer than broad, and rounded at the sides; tubercles large, broad. Petiole black, shining, indistinctly punctured; the base of the postpetiole black, the centre raised, a furrow on either side of the raised part; the rest of the abdomen shining, impunctate, broad, the apex obtuse; ovipositor about one half of the length of the abdomen. Areolet 5-angled, the lower side sharply angled; the lateral nervures converging at the top, the outer nervure faint.

MESOSTENUS.

Mesostenus, Gravenhorst, Ichneumon. Eur. ii. p. 750.

A genus of world-wide distribution, and of great extent.

A. Body and legs black. (Species 1 to 3.)

1. *Mesostenus pompiliformis*.

Niger; annulo antennarum albo; alis hyalinis, medio et apice fusco-fasciatis. ♀.
Long. 13 millim.; terebra 3 millim.

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

Head and mesonotum opaque, very finely and closely punctured; sparsely covered with white pubescence; mesopleura shining and impunctate in the centre, the rest longitudinally striated; metapleuræ very coarsely longitudinally striated; mesonotum before the scutellum longitudinally striated. Scutellum smooth, shining, impunctate; the sides carinated along their entire extent; strongly gibbous, longer than broad. Metanotum coarsely rugose; there is a transverse carina which curves up into a half-circle in the middle; above it the punctuation is much weaker; spiracles large, oval; below them the notum is transversely striated; tubercles thick, somewhat oblique at the apex, and not much longer than broad. Petiole long, and, as well as the postpetiole, smooth, shining, impunctate; the second segment is semiopaque, the others opaque, covered with microscopic down, which is longer at the sides; the apical segment brownish; cerci short, blunt. Legs stout, longish, the hind femora

nearly as long as the abdomen; tarsi shorter than the tibiæ, covered, on the lower side, with stiff, bristle-like hair, ending at the apex of the joints in a stiff spine, that on the fourth joint being not much shorter than the claws; spurs longish, broad, acutely pointed at the apex. Areolet broader than long, open at the apex. The antennæ are stout, nearly as long as the body, becoming thicker towards the apex; the annulus is interrupted on the lower side.

This species is very closely allied to *M. nigerrimus*, Smith, but that species differs in having a stouter thorax, longer antennæ, in the clypeus being white at the apex, in the much more gibbous scutellum, which is more abrupt behind, where it is almost perpendicular, and is also shorter compared to its breadth; the hind legs are very much longer, they being (not counting the coxæ) 22 millim. in length, while those of *M. pompiliformis* are barely 17 millim., the length of the bodies in the two species being nearly the same. The central fascia in the fore wings in *M. nigerrimus* is larger, extends to the stigma, and is triangular in shape; that of *M. pompiliformis* not extending to the stigma, and being angled in the middle and broad at the top. Moreover, in *M. pompiliformis* there are two longish depressions below the antennæ, which are scarcely indicated in Smith's species.

2. *Mesostenus nigerrimus*. (Tab. X. fig. 20.)

Mesostenus nigerrimus, F. Smith, Descr. of New Species of Hymen. p. 231¹.

Hab. COSTA RICA, Caché¹ (*Rogers*).

3. *Mesostenus arctus*.

Mesostenus arctus, Cresson, Proc. Acad. Phil. 1873, p. 162 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

This species may be known from the two preceding by the wings being smoky only at the tips.

B. *Head, thorax, and abdomen not entirely black.* (Species 4 to 45.)

a. *Abdomen black, banded with white or yellow.* (Species 4 to 35.)

1. *Mesothorax entirely black.* (Species 4 to 6.)

4. *Mesostenus annulitarsis*. (Tab. X. fig. 15.)

Niger, flavo-maculatus; clypeo, orbitis, coxis, basi tibiæ annuloque tarsorum, flavis; petiolo flavo, medio nigro. ♀.

Long. 11 millim.; terebra 5.5 millim.

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

Antennæ longer than the body, thin, the annulus large. Head finely rugose, opaque; the orbits broadly all round, the palpi, the edge of the clypeus, and a large semicircular mark above it, yellow. Thorax opaque, finely rugose, the pleuræ more shining; the

sutures of the mesonotum not very distinct; scutellum broader than long, smooth and shining; the tegulæ, prosternum, the edge of the pronotum in the middle, the pleural tubercle, a large mark (broader than long) on the mesopleura, a much smaller mark immediately beneath the hind wings, an oblique longish mark on the metapleuræ, the scutellum (except at the apex), the carinæ in front of it, the metathoracic spines, and the space immediately surrounding them, yellow. Upper transverse keel on the metanotum distinct, the sides of the metathorax rugose; above the transverse keel finely punctured, below it obliquely striated, the striations (which are large) converging towards the centre; tubercles blunt, a little longer than broad. Petiole and postpetiole smooth and shining, impunctate; yellow, beneath and a large mark in the centre black; the postpetiole not clearly defined from the petiole, and becoming gradually thicker towards the apex. The rest of the abdomen semiopaque, finely punctured; the second and third segments narrowly banded with yellow at the apex, the band on the fourth interrupted in the middle, the fifth and sixth yellow at the sides, the seventh entirely yellow, except a black mark in the centre, and the eighth segment has a small black mark at the side; the ventral surface is entirely yellow. The four anterior coxæ and trochanters are yellow, except a round black mark on the outer side of the former; the hind coxæ are black, broadly yellow at the base and apex; the anterior femora are yellow beneath in the middle; the anterior tibiæ yellow, black at the base and apex; the middle and posterior tibiæ broadly yellow at the base; the anterior tarsi almost entirely black; the apical half of the basal joint of the middle tarsi is yellow; the posterior tarsi are yellow, broadly black at the base (especially) and apex. The wings are slightly smoky at the apex; areolet open at the apex, nearly square, angled where the recurrent nervure is received.

5. **Mesostenus vividus.** (Tab. X. fig. 18.)

Niger, flavo-maculatus; ore, facie orbitisque, flavis; pedibus flavis, femoribus nigro-lineatis, tibiis tarsisque, fulvis; abdominis basi segmento 2° laterali, flavis; alis hyalinis, stigmatibus nigro. ♀.
Long. 11 millim.; terebra 3.5 millim.

Hab. GUATEMALA, Zapote (*Champion*).

Antennæ longer than the body, stout, microscopically pilose. Head punctured roughly on the top; yellow, except behind and the centre of the vertex; mandibles edged with black. Thorax coarsely punctured; the scutellum punctured, longer than broad, the sides rather abrupt. Pronotum laterally, coarsely, longitudinally striated. A broad line on the edge of the pronotum, the tegulæ, the scutellar carinæ, the scutellum above, the postscutellum, the mesopleura almost entirely, a mark beneath the hind wings, a large, somewhat triangular, mark on the metapleuræ, and a large mark on either side covering the tubercles, yellow. Metathorax above the transverse keel (which bends sharply up in the middle) smooth, shining, impunctate; the rest coarsely punctured; tubercles long, stout, straight. Petiole and postpetiole shining, impunc-

tate, yellow, the apex of the petiole black; the postpetiole black, its apex fulvous. Gastrocoeli transverse, fulvous. The abdomen is shining, impunctate; black, a large yellowish (inclining to fulvous) mark on either side of the second segment at the apex; the apical segments obscure fulvous. The four anterior legs are entirely yellow, except the line over the femora and the apices of the tarsi, which are black, the tibiæ and tarsi being, however, fulvous on the upper side; the hind legs are fulvous, except the coxæ behind, which are yellow, and the femora, which are black beneath and at the sides. Areolet minute, open in the middle at the apex, which is wider than the base. The lateral margin of the pronotum projects, especially in front, so that the prothorax is nearly transverse.

6. *Mesostenus admonitus*.

Mesostenus admonitus, Cresson, Proc. Acad. Phil. 1873, p. 160 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

It is quite possible that further observations may show that this is the male of *M. vividus*, but the mesopleuræ appear not to be largely yellow (Cresson says that the space "behind the base of the wings and a spot on each flank of the metathorax are yellow"), the hind coxæ are apparently black, marked with yellow, the apical margins of all the segments are yellow, and the posterior face of the metanotum is coarsely reticulated.

2. *Mesothorax with one yellow mark in the centre.* (Species 7 to 29.)

i. *Metathorax with lateral spines.* (Species 7 to 24.)

7. *Mesostenus intrudens*. (Tab. X. fig. 16.)

Mesostenus intrudens, F. Smith, Descr. of New Species of Hymen. p. 232¹.

Hab. COSTA RICA, Irazu and Cache¹ (*Rogers*).

Black; the orbits all round, the face (except at the sides of the clypeus and a somewhat triangular mark going up from them), the clypeus, the apex of the labrum, the extreme base of the mandibles, the palpi, a line on the pronotum, the tegulæ, a line on the prosternum, the pleural tubercles, an oblique mark in the centre of the mesopleura, a somewhat oval mark on the metapleura, a mark under the hind wings, a mark at the apex of the middle lobe of the mesonotum, the scutellum, the postscutellum, the tubercles of the metanotum, and the apices of the abdominal segments, yellowish-white. Legs yellowish; the four anterior femora for the greater part, and the hinder femora entirely, black; hind coxæ black in front and largely so behind, the apices of the tarsi black. Vertex aciculated; mesonotum punctured, irregularly striated, transversely in front, more strongly and longitudinally behind; metanotum irregularly reticulated and striated; centre of the meso- and metapleuræ impunctate, shining, the rest striated, the

metapleuræ more strongly ; upper keel on the metanotum turned backwards in the middle ; spines conical, thick, obtuse. Areolet as long as broad, almost entirely open at the apex, the recurrent nervure received in the centre.

8. **Mesostenus aztecus.**

Mesostenus aztecus, Cresson, Proc. Acad. Phil. 1873, p. 152 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

9. **Mesostenus propinquus.**

Mesostenus propinquus, Cresson, Proc. Acad. Phil. 1873, p. 152 (♂ ♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

10. **Mesostenus compactus.**

Mesostenus compactus, Cresson, Proc. Acad. Phil. 1873, p. 153 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

11. **Mesostenus discus.**

Mesostenus discus, Cresson, Proc. Acad. Phil. 1873, p. 153 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

12. **Mesostenus facilis.**

Mesostenus facilis, Cresson, Proc. Acad. Phil. 1873, p. 153 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

13. **Mesostenus chiriquensis.**

Niger, flavo-varius ; pleuris sternoque flavis ; pedibus flavis, supra nigro-lineatis. ♀.
Long. 14 millim. ; terebra 2 millim.

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

Antennæ stout, longer than the body, the yellow ring on the flagellum broad. Head punctured ; yellow, except behind, the centre of the vertex, and the apex of the mandibles, which are black ; vertex opaque, more roughly punctured than the rest ; a stout carina runs down from the ocelli. Pro- and mesothorax punctured, the pleuræ longitudinally striated. Metanotum above the transverse keel closely punctured ; a little way below it longitudinally striated, the striations converging towards the centre ; the apical part transversely, the pleuræ longitudinally, striated. The pleuræ and breast are entirely yellow ; the prothorax, except the prosternum and a small yellow mark on the edge, black ; the mesonotum black, except a somewhat squarish mark on the disc ; scutellum and postscutellum black ; the scutellar carinæ are black. The metathorax is yellow, except a broad black band extending from the base to a little beyond the transverse carinæ, and prolonged as a black line down the centre and

halfway laterally round the outer side of the tubercles, which are longish, stout, and curved. Abdomen slender, yellow, above black (except at the base); the apex of the postpetiole yellow; the rest of the abdomen black, yellow at the apices of the segments and beneath. Legs yellow; the trochanters, femora, and four anterior tarsi black above; the hind tarsi yellow, black at the base and apex; spurs black; coxæ yellow, except two small black marks on the anterior, two larger ones on the middle, and two longish black stripes on the posterior pairs. Areolet square, stigma testaceous on the lower side.

14. **Mesostenus lamentarius.** (Tab. X. fig. 14.)

Niger, flavo-varius, apice scutelli flavo; petiolo flavo, medio nigro; coxis posticis flavis, nigro bilineatis. ♀. Long. 15 millim.; terebra 6 millim.

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

Antennæ moderately stout, as long as the body, five of the middle joints of the flagellum yellow. Head yellow, except behind, the vertex in the centre, and the mandibles, which are black; punctured, shining; a furrow runs down from the ocelli to the antennal depression. Pro- and mesothorax closely and rather strongly punctured, the pleuræ longitudinally striated; a smooth, shining, impunctate space in the centre of the mesopleura. The prosternum, a large mark on the edge of the pronotum, the tegulæ and the tubercle under them, a large oblique mark on the mesopleura, the mesosternum, a large mark under the hind wings, a mark (longer than broad and rounded at the base) on the apex of the middle lobe of the mesonotum, the scutellar carinæ, the apical half of the scutellum and postscutellum, yellow. Scutellum shining, longer than broad, covered with scattered punctures. Base of the metanotum coarsely punctured, the apex transversely, the pleuræ longitudinally, striated; on either side of the metanotum is a longish mark, covering the tubercles, and extending above them to the transverse carina as a triangular prolongation; on the pleura is a large oblique yellow mark; tubercles longish, curved. Petiole rather broad, furrowed in the centre above, the furrow extending to the apex of the postpetiole; the apex of the petiole and the base of the postpetiole are broadly black, the black incised at either end. The rest of the abdomen is aciculated; the gastrocoeli, and the segments at the apex, yellow. Legs yellow, the tibiæ and tarsi inclining to fulvous, the trochanters and femora broadly lined with black above; the hind coxæ black behind, and with a longish yellow mark in the centre of the black; the extreme base of the hind tibiæ and the apices of the tarsi black. Areolet narrow, longer than broad; the apex of the wings slightly smoky.

15. **Mesostenus brachygaster.**

Very similar in coloration to *M. lamentarius*, except that the mandibles are yellow at the base; the mark on the disc of the mesonotum is longer than broad, not broader

than long, and semilunate; the scutellum has its sides yellow throughout, and has a black mark in the centre at the base; the top of the yellow marks on the metanotum is tongue-shaped, not triangular; the sides of the petiole are black, and there is a large black mark on the outer, and a smaller and broader one on the inner, side of the hind coxæ, the two being quite distinct. Structurally it differs in having the antennæ longer, the petiole broader, the tubercle at the side of the postpetiole much more distinct, and the abdomen shorter and much broader, the latter being (not counting the petiole) of the length of the head and thorax together, while that of *M. lamentarius* is considerably longer than that. The sculpture is nearly the same in both species.

16. *Mesostenus acceptus*.

Mesostenus acceptus, Cresson, Proc. Acad. Phil. 1873, p. 154 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

17. *Mesostenus veræpaci*s.

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

Similar in size and coloration to *M. lamentarius*, except that the mesosternum is black, the mandibles yellow at the base, and the yellow marks on the metanotum are tongue-shaped, not triangular, above the tubercles; differing otherwise from that species in the base of the metanotum not being so strongly punctured, the petiole not furrowed in the centre, the abdomen broader, the ovipositor a little shorter, the hind coxæ with only one large black mark on the outer side (not two joined at the apex), and the meta-thoracic tubercles shorter, thicker, and not curved.

18. *Mesostenus fraternans*.

Niger, flavo-maculatus; facie, orbitis coxisque anterioribus, flavis; pedibus fulvis. ♀.
Long. 17-18 millim.; terebra 9.5 millim.

Hab. MEXICO, Presidio (*Forrer*).

Antennæ stout, about as long as the body; the scape in the middle beneath, and a broad ring on the flagellum, yellow. Head punctured, the face projecting in the middle; mandibles black. Pro- and mesothorax punctured, the sides longitudinally striated; middle lobe of the mesonotum clearly defined by the furrows; scutellum longer than broad, punctured. The metanotum is shining, and punctured above the transverse keel, below it coarsely, transversely striated; the pleuræ are coarsely and longitudinally striated; the tubercles broad, hollowed on the outer side, punctured. The prosternum, a broad line on the edge of the pronotum, the tegulæ, the tubercles beneath them, the greater part of the mesopleuræ, a large mark under the hind wings, a large oblique mark on the metapleuræ, a mark at the apex of the middle lobe of the mesonotum, the scutellar carinæ, the scutellum, the postscutellum, and two longish marks on either side

of the apex of the metanotum, covering the similarly-coloured spines, yellow. Petiole and postpetiole shining, impunctate, the apex of the latter broadly yellow. The remainder of the abdomen aciculate, each segment banded with yellow at the apex. Sheath of the ovipositor stout, broad. Areolet small, narrow, nearly double as long as wide.

19. *Mesostenus montezuma*.

Long. 19 millim.

Hab. MEXICO, Orizaba (*Bilimek*).

A species identical, in the coloration of the head, thorax, and abdomen, with *M. fraternans*, but of a stouter build, the thorax especially being broader; differing otherwise from that species in the legs being yellow (not fulvous), except the hind femora; in the four anterior femora being lined behind with black, and the posterior femora above and halfway down the sides black; in all the coxæ being black at the base, and the hinder pair bearing a broad black stripe down the centre on the outside, and a large, broader, and shorter mark on the inner side; the trochanters being also marked with black, especially at the base; and the apices of all the tarsi black.

20. *Mesostenus modicus*.

Mesostenus modicus, Cresson, Proc. Acad. Phil. 1873, p. 154 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

21. *Mesostenus communis*.

Mesostenus communis, Cresson, Proc. Acad. Phil. 1873, p. 154 (♂ ♀)¹.

Hab. MEXICO, Cordova, Orizaba¹ (*Sumichrast*), Mirador¹ (*Dr. Sartorius*).

22. *Mesostenus ornatifrons*. (Tab. X. fig. 17.)

Niger, capite flavo-maculatus; linea pronoti, scutello, segmentisque abdominis apice, flavis; pleuris, metathorace pedibusque, fulvis; alis hyalinis. ♀.

Long. 13 millim.; terebra 4-5 millim.

Hab. MEXICO (*Sallé*); COSTA RICA, Irazu (*Rogers*)?

Antennæ, if anything, longer than the body, thickened towards the apex; the yellow ring on the flagellum broad. Head punctured, the orbits, a triangular mark below the antennæ, the labrum, and a larger mark on the clypeus, yellow. The antennæ originate from distinct tubercles, which are yellow. Thorax punctured, semiopaque above; the sides obscurely striated. The tegulæ and the tubercle below them, the collar in front, a line on the edge, the anterior part of the mesopleuræ, the scutellum, and the post-scutellum, yellow. Scutellum longer than broad, narrowed towards the apex. The metanotum is black ^{basally} ~~behind~~ the transverse keel; ^{apically} ~~in front of~~ it and the pleuræ fulvous, as are also the sides of the mesothorax. The metanotum ~~behind~~ the carina is opaque, ^{basal of}

finely punctured; the ^{apically} part in front of it rugose; the apex and sides strongly striated and punctured; tubercles large, flat, transverse, hollowed in front; the lower transverse keel produced as a triangle in the centre. Petiole longish, not clearly defined from the postpetiole; black, a longish yellow line down its centre; the apex of the postpetiole and of all the other segments yellow, as are also the sides and ventral surface; the petiole is shining and impunctate, the other segments opaque, finely aciculate. Legs longish, the tarsi inclining to yellow. Areolet square, open at the apex, the recurrent nervure received in the middle.

M. communis agrees very closely in coloration with the present species, but differs in having a "furcate mark on the disc of the mesothorax," and the trochanters black at the base; there is no mark below the antennæ, and only one oblique mark on the pleura, and the petiole is entirely black.

What I take to be the male of *M. ornatifrons* (from Irazu) has the face entirely white, the apex of the hind tibiæ black, and the tarsi white, but otherwise coloured like the female. The mark on the mesonotum is a little longer than broad, with the sides rounded. The male of *M. communis* differs from this in having no tubercles on the metathorax, while in the Costa-Rican specimen they are nearly as distinct as in the female. It is quite possible that the latter may have a white mark on the mesonotum, it being perhaps hidden by the pin.

23. *Mesostenus striatifrons*.

Niger, flavo-pictus; macula mesonoti, scutello, postscutello, sterno, maculis pleuralibus, maculis 2 metanoti abdominisque segmentis basalibus, flavo-testaceis; pedibus flavo-fulvis, coxis, trochanteribus et femoribus posticis, nigro-lineatis; alis flavo-hyalinis, stigmatibus nigro. ♀.

Long. 14 millim.; terebra 6 millim.

Hab. BRITISH HONDURAS (*Blancaneaux*).

Antennæ stout, black, joints 8-15 clear white; nearly as long as the body, covered with microscopic pile. Head black; the orbits (except narrowly behind), the face, labrum, clypeus, and the base of the mandibles, yellowish-testaceous. Vertex longitudinally striated, the hollow above the antennæ shining, impunctate; face punctured, covered with white hair. Thorax strongly punctured, pleuræ (except a shining, impunctate space in the centre of the mesopleura) longitudinally striated; scutellum but very slightly punctured; the base of the metanotum strongly punctured and reticulated, the remainder transversely punctured. The prosternum, a line on the pronotum, the apex of the middle lobe of the mesonotum, the scutellum (except at the extreme base), the scutellar keels, the sutures, the sternum, a large oblique mark on the mesopleura (united posteriorly to the yellow breast), a triangular mark under the hind wings, a large mark on the metapleura, two elongated marks on the metanotum covering the spines and converging at the top, and the tegulæ and tubercles beneath them, yellowish-testaceous. Upper transverse keel on the metanotum distinct, bent upwards in the

middle, where there is a clearly defined area, which is longer than broad; lower keel absent; spines stout, obtuse. The apex of the metanotum has a somewhat abrupt slope, and is hollowed in the centre. Abdomen for the greater part yellowish-testaceous, the underside and the sides of the petiole, a large transverse mark at the base of the postpetiole, the greater part of the second segment, and of the other segments at the base (the apical one narrowly), black. Petiole rather broad, the postpetiole clearly defined from it, depressed in the centre at the base, the sides margined and projecting above over a somewhat oblique hollow; the sides of the petiole bearing semioblique, thick keels; the second and following segments finely and closely punctured. Legs stout, the hind coxæ strongly punctured; four anterior coxæ black at the base, the hind pair with a broad black band down the centre on the outside, and a short one on the inner side at the apex; all the trochanters and femora lined above with black; tarsi black at the tips, covered on the lower side with stout bristle-like hair. Areolet narrow, longer than broad; the outer nervure bullated, nearly interstitial.

24. *Mesostenus corpulentus*.

Hab. MEXICO, Orizaba (*Bilimek*).

Very similar in coloration and punctuation to the preceding species, but larger (17 millim.; terebra 5 millim.). The head is black, there being only a short line united to the oblique mark on the mesopleura along the hinder part of the mesosternal suture; the two marks on the metanotum are shorter and broader, and do not converge above; the spines on the metathorax are short, blunt, and not brought to a point at the apex, being triangular, looked at from the side. The punctuation on the metathorax is stronger, and runs more into reticulations at the sides and base. The femora are not clearly lined with black above, and the hind coxæ have a fuscous-black mark at the base, not a black broad band down the centre. Wings hyaline, nervures testaceous, and the areolet is wider.

ii. *Metathorax without spines*. (Species 25 to 29.)

25. *Mesostenus nigrispina*.

Niger; annulo antennarum, ore, facie, orbitis, prosterno, linea pronoti, macula mesonoti, scutello, abdominis segmentis apice tarsisque posticis, albis; pleuris, sterno, maculis 2 metanoti pedibusque, fulvis; alis hyalinis, nervis nigris. ♀.

Long. 11 millim.; terebra 4 millim.

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

Antennæ as long as the body, slightly thickened towards the apex. Head rather narrow, impunctate; tips of the mandibles black. Thorax shining, impunctate, pleuræ obscurely and very finely striated. Metanotum beyond the upper transverse keel transversely striated; the transverse keel is straight, and there are no tubercles or spines.

Metathorax with a gradual slope from the base to the apex; the base is black, except at the edge of the pleuræ, and the black is continued down the centre as a black band, which becomes narrower towards the apex. Abdomen shining, impunctate; all the segments broadly white at the apex, the ventral surface being also white. Legs longish, slender; the apices of the hind femora, tibiæ, and tarsi, black; the base of the tarsi and the spines being also black. The mark on the mesonotum is large and broad, the sutures are distinct, and the notum on either side of the black postscutellum is coloured like the pleuræ.

— 26. **Mesostenus chichimecus.**

Mesostenus chichimecus, Cresson, Proc. Acad. Phil. 1873, p. 155 (♀)¹.

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

27. **Mesostenus admirandus.**

Mesostenus admirandus, Cresson, Proc. Acad. Phil. 1873, p. 155 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

28. **Mesostenus arcuatus.**

Mesostenus arcuatus, Cresson, Proc. Acad. Phil. 1873, p. 156 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

29. **Mesostenus admotus.**

Mesostenus admotus, Cresson, Proc. Acad. Phil. 1873, p. 156 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

3. *Mesothorax with two yellow lines on the disc.* (Species 30 to 32.)

30. **Mesostenus megapoda.** (Tab. X. fig. 19.)

Niger, flavo-varius; femoribus supra apiceque tibiarum posticarum, nigris; alis hyalinis, apice fumatis. ♀. Long. 14 millim.; terebra 4 millim.

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

Antennæ stout, not much longer than the body. Head punctured, the face more strongly transversely striated in the centre, the centre of the vertex aciculate; front projecting, with two black lines running down the centre to the mandibles round the sides of the clypeus; the latter is blackish round the edge; mandibles black, yellow at the base. Mesonotum aciculated, with some scattered punctures; the pleuræ striated in the middle; base of the metanotum scarcely punctured, the rest strongly striated, reticulated below the spiracles. Tubercles longish, a mere dilatation of the carina. Scutellum not much longer than broad, finely punctured, rounded at the apex. The head is yellow, except the centre of the vertex and behind; the prosternum, the tegulæ, and

the tubercle below them, the greater part of the mesopleura, a mark below the hind wings, the greater part of the metapleura (forming a large oval mark), a broad line on the edge of the pronotum, two longish marks on the mesonotum, the scutellum, a somewhat lunate mark on either side of the metanotum, and a longish mark between them, and two longish somewhat oval marks on the apex of the metanotum, yellow. First abdominal segment black, the apex yellow; second with the apex broadly yellow; third yellow, with two oblique marks and the base and the apex, black; fourth black, the apex yellow; the rest yellow, as is also the ventral surface. Legs yellow; the base and apex of the four posterior trochanters, a mark on the lower side of the hind coxæ at the base, and a larger and longer mark on the outer side, the femora above, and the apices of the hind tibiæ broadly, black. Areolet longish, widest at the base, angled where the recurrent nervure is received, the apical nervure faint.

31. **Mesostenus costaricensis.** (*Mesostenus nicaraguensis*, Tab. X. fig. 13.)

Niger, flavo-varius; apice scutelli, pleuris sternoque flavis; pedibus flavis, femoribus supra nigris; alis hyalinis. ♀.

Long. 13 millim.; terebra 5 millim.

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

Antennæ stout, longer than the body, the yellow ring on the flagellum not very broad. Head yellow, except behind; the centre of the vertex and the mandibles punctured. Thorax strongly punctured; the tegulæ, the tubercle beneath them, the edge of the pronotum, the mesopleura (except the suture and immediately beneath the wings), two lines on the mesonotum, the scutellar carinæ, the apical half of the scutellum, the post-scutellum, two large marks on the apex of the metanotum (covering and extending above the spines), and the greater part of the metapleura, yellow. Scutellum impunctate. Base of the metanotum almost impunctate, the apex transversely, the sides longitudinally, striated; spines stout, curved. First abdominal segment yellow, a large black band at the apex of the petiole; second and third segments black, yellow at the apex; fourth segment yellow, black at the base; the other segments yellow. The anterior coxæ have a small black mark at the side, and the hind coxæ have a large black line; the trochanters in part, and the femora above, black. Areolet narrow, longer than broad.

32. **Mesostenus longipes.**

Niger, flavo-varius; pleuris, sterno scutelloque, flavis; pedibus flavis, anterioribus femoribus tibiisque posticis supra, nigro-lineatis.

Long. 13 millim.

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

Antennæ stout, the yellow ring on the flagellum interrupted on the lower side. Head punctured, yellow behind, the middle of the vertex and the mandibles black. Thorax coarsely punctured, reticulated in the centre of the mesonotum and pleuræ;

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scutellum semireticulated, the centre of the metanotum reticulated, the pleuræ less distinctly; the sides of the mesonotum at the base finely reticulated. The pleuræ are yellow, except the sutures broadly, and a broad line along the fore part of the sternal furrow; the edge of the pronotum has a broad yellow mark; the tegulæ, the tubercles beneath them, two elongated lines on the mesonotum, the scutellum, the postscutellum, and two large marks on the metanotum, covering and extending above the tubercles, yellow. Scutellum longer than broad, contracted from the middle to the apex, the anterior part carinate. Metathoracic spines short, thick, blunt. Petiole black, yellow along the sides, the apex of the postpetiole broadly yellow. The second and third segments of the abdomen black, yellow at the apex; the other segments yellow. Legs longish, the hind pair much longer than the body; the four anterior trochanters and the femora and tarsi lined with black above; posterior coxæ with a broad black line; the trochanters, femora, and tibiæ to near the apex lined with black above; the apex of the hind tarsi black. Areolet small, open at the apex.

A shorter and much broader and stouter insect than *M. costaricensis*, and easily known from it by the reticulated thorax, the wholly yellow scutellum, the black scutellar carinæ, the much shorter and thicker metathoracic spines, the black-lined tibiæ, and the much longer hind legs.

4. *Mesothorax with a white line on each lateral lobe and a white mark on each side of the middle lobe.* (Species 33 and 34.)

33. *Mesostenus euryaspis*.

Niger; facie, orbitis læte, pleuris, maculis mesonoti, metanoto (medio excepto), abdominisque segmentis apice, flavis; pedibus fulvis; coxis flavis, posticis nigro-bilineatis; alis hyalinis.

Long. 14 millim.; terebra fere 4 millim.

Hab. MEXICO, Presidio (*Forrer*).

Antennæ longer than the body, the scape beneath and a broad ring on the flagellum yellow. Head punctured, the apex of the mandibles, the vertex in the middle, and the posterior part (except the orbits) black, the rest yellow. Thorax punctured, the punctures running into striations on the sides; the basal part of the metanotum semirugose, the middle longitudinally rugose-striate, the apex transversely so; metapleura rugose. The pleuræ are yellowish, except the sutures, a longitudinal line on the mesopleuræ, and the edge of the collar in front; mesonotum black, the edges of the middle lobe and two shorter lines at its base inside from these, the carinæ in front of the scutellum, the scutellum, the postscutellum, and the metanotum (except the space enclosed by the two transverse keels), yellow. Scutellum punctured, quadrate, almost broader than long. Metathoracic tubercles broad, short. First abdominal segment yellow, a black mark towards the apex; second segment black, with a fulvous transverse mark at its base, its apex and also those of the other segments, the sides and ventral surface, yellow. The

mesosternal suture broad, deep. Legs longish; the hind tarsi broadly in the middle, and the fore legs in front, yellow; there is a small black mark on the anterior coxæ, a larger one on the middle coxæ, and two large black lines on the hind coxæ. Areolet, if anything, broader than long; the apical nervure distinct; the recurrent nervure received in the middle. The apex of the wings slightly smoky.

A narrowish insect.

34. **Mesostenus stupidus.**

Mesostenus stupidus, Cresson, Proc. Acad. Phil. 1873, p. 159 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

5. *Mesothorax with a central yellow stripe.* (Species 35.)

35. **Mesostenus abactus.**

Mesostenus abactus, Cresson, Proc. Acad. Phil. 1873, p. 160 (♀)¹.

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

b. *Abdomen wholly or for the greater part reddish.* (Species 36 to 45.)

36. **Mesostenus mexicanus.**

Mesostenus mexicanus, Cresson, Proc. Acad. Phil. 1873, p. 157 (♂ ♀)¹.

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

37. **Mesostenus lassatus.**

Mesostenus lassatus, Cresson, Proc. Acad. Phil. 1873, p. 157 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

38. **Mesostenus moratus.**

Mesostenus moratus, Cresson, Proc. Acad. Phil. 1873, p. 158 (♂ ♀)¹.

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

39. **Mesostenus absolutus.**

Mesostenus absolutus, Cresson, Proc. Acad. Phil. 1873, p. 158 (♂ ♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

40. **Mesostenus novatus.**

Mesostenus novatus, Cresson, Proc. Acad. Phil. 1873, p. 159 (♀)¹.

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

41. *Mesostenus incertus*.

Mesostenus incertus, Cresson, Proc. Acad. Phil. 1873, p. 161 (♂ ♀)¹.

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

42. *Mesostenus parvituberculatis*. (Tab. X. fig. 21.)

Niger, flavo-varius; abdomine rufo; pedibus flavo-fulvis; coxis anterioribus flavis; femoribus supra nigro-lineatis; alis hyalinis. ♀.

Long. 13 millim.; terebra 5.5 millim.

Hab. GUATEMALA, San Juan in Vera Paz (*Champion*).

Antennæ stout, dilated a little towards the apex; the yellow ring on the flagellum broad. Head punctured, the vertex not so strongly; a straight keel leading down from the ocelli to the antennæ; yellow behind, the centre of the vertex and the mandibles black. Thorax strongly punctured, the mesopleura shining and impunctate, the metapleura longitudinally striated, the metanotum irregularly reticulated. Scutellum oval, with some large punctures. Metathoracic tubercles mere short dilatations of the carina. Thorax black; a mark on the side of the prothorax, a line on its edge, the tegulæ, the tubercle beneath them, a large mark on the mesopleura, a small one beneath the hind wings, the greater part of the metapleura, two lines on the disc of the mesonotum, the scutellum, and two large marks covering the metathoracic tubercles, yellow. The femora incline to reddish, the four anterior ones yellowish in front; tibiæ and tarsi fulvous, tinged with yellow; the four anterior femora are lined with black behind, the posterior femora have more than the apical half for the greater part black; the hind coxæ are marked with black at the base.

43. *Mesostenus animatus*.

Mesostenus animatus, Cresson, Proc. Acad. Phil. 1873, p. 161 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

44. *Mesostenus pertenuis*.

Mesostenus pertenuis, Cresson, Proc. Acad. Phil. 1873, p. 162 (♂)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

45. *Mesostenus collaris*.

Mesostenus collaris, Cresson, Proc. Acad. Phil. 1873, p. 162 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

POLYCYRTUS.

Polycyrtus, Spinola, Ann. Soc. Ent. Fr. x. p. 154.

This generic group has the general form of the body and neurulation of *Mesostenus*; but it differs from the typical forms of *Mesostenus* in having a more or less well-developed spine on the front, and in having the mesonotum divided into three well-developed lobes. Some authors regard *Polycyrtus* as a mere section of *Mesostenus*; but in view of the great extent of that genus, I prefer, if only as a matter of convenience, to keep it distinct from it.

So far as I know, *Polycyrtus* is less numerously represented in South and Central America than *Mesostenus* proper. In both groups there is considerable variation in the form of the body, but as a rule the species of *Polycyrtus* are more slenderly built. The form of the areolet varies, but is generally very small; often it is open at the outer side. There is great variation in the size of the metathoracic spines; sometimes they are completely obsolete, and this may also be the case with the transverse keels.

A. *Body black and yellow.* (Species 1 to 24.)

The Central American species of this section known to me may be recognized by the following table:—

- | | |
|---|------------------------|
| 1 (2). Metathorax coarsely punctured | <i>chontalensis</i> . |
| 2 (1). Metathorax impunctate or nearly so. | |
| 3 (8). Hind tibiae entirely black behind. | |
| 4 (7). Central black line on the metanotum broadly dilated at the transverse keel; metatarsus not entirely yellow. | |
| 5 (6). Metapleuræ coarsely punctured, the black transverse line on the metanotum joined to the spiracles; apex of the wings smoky; body stout | <i>collinus</i> . |
| 6 (5). Metapleuræ scarcely punctured, the black transverse line on the metanotum not joined to the spiracles; apex of the wings clear hyaline; body slender | <i>confirmatus</i> . |
| 7 (4). Central black line on the metanotum not dilated at the transverse keel; the black on the second abdominal segment not indented in the middle; metatarsus yellow | <i>nigritibialis</i> . |
| 8 (11). Tibiæ broadly black at the base; metanotum not broadly black, and without a transverse yellow mark through the black. | |
| 9 (10). A large yellow mark produced on either side at the apex on the base of the second abdominal segment; no furrow down the centre of the black longitudinal line on the metanotum; spines on the metathorax shortish, thick; wings hyaline | <i>blanditus</i> . |
| 10 (9). A small yellow mark, wider than long, at the base of the second abdominal segment, a distinct furrow down the centre of the metanotum; wings smoky, especially at the apex; spines long, acute . | <i>guatemalensis</i> . |

- 11 (12). Hind tibiæ black at the base and apex; metanotum for the greater part black, a yellow transverse line near the base; a large yellow mark close to the base of the black on the second abdominal segment *obtusispina*.
- 12 (11). Tibiæ yellow or fulvous.
- 13 (14). Hind legs fulvous; coxæ not marked with black; femora not lined with black.
- 14 (15). Metanotum broadly black; the black on the second abdominal segment transverse at the base *fulvipes*.
- 15 (14). Metanotum yellow, except a black cross; the black on the second abdominal segment deeply indented at the base *cruciatus*.
- 16 (13). Femora lined with black; coxæ with a large black mark.
- 17 (18). The central longitudinal black line on the metanotum joined to the spiracles by a black line; the black on the second abdominal segment sharply indented at the base *fulvofemoratus*.
- 18 (19). The central black line on the metanotum not joined to the spiracles by a black line; the black on the second abdominal segment rounded or transverse at the base.
- 19 (20). Central black line on the metanotum broadly dilated at the base, almost touching the spiracles; no furrow in its centre close to the keel; the black in centre of the second abdominal segment broad at the base *montezuma*.
- 20 (19). Central line scarcely dilated at the base, a furrow down its centre; the black on the second abdominal segment narrow *canaliculatus*.

1. **Polycyrtus obtusispina.** (Tab. X. fig. 1, metanotum and base of abdomen.)

Niger, flavo-varius; lineis 2 mesopleuralibus, macula ad apicem abdominis segmenti 1ⁱ, basi apiceque tibiæ posticarum, nigris; alis hyalinis, apice fumatis, stigmatibus nigris. ♀.

Long. 18 millim.; terebra 8 millim.

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

Antennæ stout, nearly as long as the body; the basal joints beneath and the seventh to eleventh joints, white. Head yellow, posteriorly and the vertex in the centre black; mandibles punctured, the tips blackish; frontal spine conical. Thorax black; the prosternum beneath, a broad line on the edge of the pronotum, the tegulæ, a line on either side of the apex of the middle lobe of the mesonotum, the scutellar keels, the apex of the scutellum, the postscutellum, and the sutures, yellow; mesopleuræ yellow, except a black mark beneath the wings enclosing the yellow tubercles, a broad oblique mark in the centre, and the mesosternal suture broadly, black. Metanotum black above the transverse keel, except a curved mark in front of the spiracles; from these a broad black line runs down the side to a little below the spines, where it projects outwards; and in front of the spines these lateral lines are united by a broad transverse one, while from the centre of this latter a short, moderately thick line runs down to the apex. Metapleuræ yellow, except the suture, which is broadly black, and the above-mentioned

lateral prolongation from the spiracular black line; obsoletely punctured; spines short, thick, obtuse. First abdominal segment black beneath, a large black mark above, leaving a broad yellow band at the apex; second segment broadly at the apex, narrowly laterally, yellow, a yellow mark (somewhat pear-shaped, but with the base transverse) at the base of the black portion; the other segments yellow, black at the base; ventral surface entirely yellow. Ovipositor black, scarcely so long as the body. Legs yellow; the coxæ with a broad black mark on the outer side, the hind pair also black at the base on the lower side; all the femora and the four anterior tibiæ and tarsi lined with black above, the hind tibiæ broadly black at the base and apex. Wings slightly smoky, nervures black; areolet longish, narrow, the apical nervure bullated in the centre, the recurrent nervure almost interstitial.

The largest of the Central-American species, and *inter alia* easily known by the broad transverse yellow stripe on the black basal part of the metanotum and by the yellow mark in the centre of the black on the second abdominal segment.

2. *Polycyrtus melanoleucus*.

Mesostenus (Polycyrtus) melanoleucus, Brullé, Hist. Nat. Ins. Hymén. iv. p. 204; Cresson, Proc. Acad. Phil. 1873, p. 142¹.

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

It is quite possible that this species may be identical with *P. collinus*; but, without an examination of a typical specimen, I am unable to decide this.

3. *Polycyrtus collinus*. (Tab. X. fig. 2, metanotum and base of abdomen.)

Niger, flavo-varius; tibiis posticis nigris; abdominis segmentis 2° et 3° nigris, apice maculisque 2 lateralibus, flavis; alis hyalinis, stigmatibus nigro. ♀.

Long. 17 millim.; terebra 6 millim.

Hab. GUATEMALA, El Reposo 800 feet (*Champion*).

Antennæ nearly as long as the body; the sixth to the twelfth joints clear white, the basal joint white in the centre beneath. Head whitish-yellow, behind and the vertex (except the orbits) black; face punctured; base and apex of the mandibles, and the extreme apex of the clypeus, black. Prothorax black; prosternum, and a broad line on the edge of the pronotum, yellow. Mesonotum black; two lines at the apex of the middle lobe, the tegulæ, the keels of the scutellum, the apical half of the latter, the postscutellum, and a thin line running from the scutellum and postscutellum to the wings, yellow. Metanotum yellow; the base, a broad line from the latter running down the centre broadly dilated at the transverse keel (the lateral dilatation united to the spiracles, and projecting outwards towards the spines in front), and a line running down from the spiracles (which are in the black line), black. Pleuræ white, the centre of the middle depression of the mesopleura, a small mark in front of it, the mesosternal suture, the metapleural suture, and a somewhat triangular spot over the hind coxæ, black. The upper transverse keel on the metanotum distinct, the metapleura strongly punctured and transversely striated in the

middle; spines longish, stout, obtuse at apex. Abdomen longer than the head and thorax together; first segment longer than the second; petiole shining, impunctate, black beneath and in the centre above to the middle of the postpetiole, where the black becomes dilated; second segment, except the apex, and a large mark on either side not far from the base (the mark curving round towards the base of the segment at the end), black; third segment black, except an indented spot on either side, and the apex broadly, yellow; the apices of the other segments broadly, and the ventral surface, yellow. Ovipositor as long as the thorax, black. Legs yellow, lined above with black, the hind tibiae broadly; a longish black mark on all the coxae; posterior tarsi yellow, black at the base; the four anterior tarsi fuscous beneath. Wings hyaline, fuscous at the apex; stigma black; areolet small, longer than broad, slightly angled where the recurrent nervure is received, the apical nervure bullated in the centre.

4. **Polycyrtus confirmatus.** (Tab. X. fig. 3, metanotum and base of abdomen.)

Long. 15 millim.; terebra 3-4 millim.

Hab. GUATEMALA, Volcan de Atitlan 2500 to 3500 feet (*Champion*).

Almost identical in coloration with the preceding species; but the body is much narrower and more slenderly built; the frontal spine is not so stout, and has an upward curve; the spines on the metathorax are not so stout, and are sharper at the apex; the black transverse band on the metanotum does not reach the spiracular longitudinal line; the second segment of the abdomen is longer, being nearly as long as the first, the lateral yellow marks are not so broad, and are more produced towards the base of the segment; the metapleuræ are scarcely punctured.

5. **Polycyrtus ferox.**

Polycyrtus ferox, Cresson, Proc. Acad. Phil. 1873, p. 143 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

6. **Polycyrtus major.**

Polycyrtus major, Cresson, Proc. Acad. Phil. 1873, p. 143 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

7. **Polycyrtus cruciatus.** (Tab. X. fig. 4, metanotum and base of abdomen.)

Niger; pleuris metathoraceque flavis; pedibus flavo-fulvis; lineis 3 metathoracis maculaque ad apicem abdominis segmenti 1ⁱ, nigris; alis subfumatis. ♀.

Long. 15 millim.; terebra fere 3 millim.

Hab. MEXICO (*Sallé*).

Head yellowish-white; behind, the vertex in the centre, and the base of the mandibles, black; frontal spine short and obtuse at the apex; face projecting in the centre; clypeal foveæ longish, oblique. Antennæ slender, the yellow ring on the flagellum broad.

Prothorax black, except the prosternum and a line on the pronotum, which are yellow. Mesonotum black; the scutellar keels, the apex of the scutellum, and the sutures, yellow. Pleuræ yellow, except the part surrounding the tubercles under the yellow tegulæ. Metathorax yellow, except the suture between it and the mesothorax; a black line (dilated on either side at the transverse keel, thus forming a cross) going down from this to the apex, and another line going down from each spiracle, black. The metathorax entirely impunctate, the transverse keel straight, the spines short and obtuse. First abdominal segment narrow, impunctate, a black mark (rounded at the base, transverse and broader at the distal end) at the apex; base of the second segment black, the black dilated at the apex laterally, a large black mark occupying the greater part of the segment; this mark is transverse at the apex, the base projecting on either side into a fish-hook-like process, which is nearly as long as the body of the mark; the other segments have a broad black band at the base. Sheath of the ovipositor black, pilose, scarcely one half the length of the abdomen. Legs immaculate honey-yellow; the femora of a darker fulvous colour, the tips of the tarsi black. Wings with a smoky tinge; stigma testaceous, lighter in the centre.

8. **Polycyrtus fulvofemoratus.** (Tab. IX. fig. 22, ♀; and Tab. X. fig. 5, metanotum and base of abdomen.) ✓

Niger, flavo-varius; scutello flavo; pedibus fulvo-flavis; coxis posticis flavis, nigro-lineatis; femoribus posterioribus supra fusco-lineatis. ♀.

Long. 16 millim.; terebra 5 millim.

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

Antennæ nearly as long as the body, microscopically pilose. Head with the mandibles entirely, and above the antennæ, except the orbits broadly, black; frontal spine short, thick, obtuse, a roundish tubercle at its base; eyes distinctly margined. Prothorax black, except the prosternum and a broad line on the edge, which are yellow; the sides hollowed, transversely striated. Mesonotum black; two large lines on the lateral lobes, the tegulæ and the scutellar keels and the scutellum entirely, ~~black~~; ^{white} pleuræ and the sternal sutures black, the latter distinct, deep, longish; a transverse line at the base of the metanotum (continued down the sides), a broad line down the centre, and one from the spiracles (joined to the central line by a transverse one), black; the transverse line at the base and the one from the spiracles cover the furrows; the transverse carinæ distinct. Spines longish, stout; the sides projecting as a broad tubercle in front of the hind coxæ. First abdominal segment black, except at the apex; second segment with a broad transverse band at the base, the sides projecting at the apex (in front of this is a large black mark with the base indented by a triangular indentation), the apex truncated; third segment with a large black mark at the base; the other segments almost entirely yellow. There is a broad line on all the coxæ, a line on the trochanters and over the hind femora, black; the apices of all the tarsi are blackish.

BIOL. CENTR.-AMER., Hymenopt., November 1885.

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✓ 9. **Polycyrtus montezuma.** (Tab. X. fig. 6, metanotum and base of abdomen.)

Niger, flavo-varius; pedibus apiceque scutelli, flavis; femoribus fulvis; coxis posticis flavis, nigro-lineatis; stigmatibus fusco. ♂.

Long. 18 millim.

Hab. MEXICO (*Sallé*).

Antennæ densely pilose, a broad white ring beyond the middle (joints 8-13). Head yellow, except behind and the vertex in the centre; tips of the mandibles black. Prothorax black, the prosternum and a broad line on the edge of the pronotum, yellow. Mesopleura and sternum entirely yellow, the mesonotum black; the tegulæ, a short line on either side of the apex of the middle lobe, the apex of the scutellum, the post-scutellum, and the sutures, yellow. Metathorax yellow, the base broadly black, and the black continued down the centre, becoming gradually narrowed from the base to the apex; a narrow black line runs from the spiracles down the side; the metapleura is black, except the suture and a small mark over the hind coxæ; the metathorax is covered with long fuscous hair, and the spines are obtuse and short. First abdominal segment black above, the sides narrowly (except at the base and at the tubercles, where the yellow is broader), the apex broadly, and the lower side, yellow; second segment black at the base, the black continued along the sides for about one third of the length of the segment and enclosing a small yellow mark and becoming dilated at the apex; in front of this is a large black mark, which occupies the greater part of the segment; it is narrowest at the base, where the sides project irregularly, and not transverse like the apex; the apex of the second and following segments broadly yellow; the apical segment for the greater part yellow. Legs fulvous; the coxæ clear yellow, lined on the outside with black. Wings hyaline, stigma fuscous; areolet a little longer than wide, outer nervure bullated.

Differs from *P. fulvofemoratus* in there being no cross black band joining the central stripe and the spiracles; in the basal part of the middle stripe being much broader than the middle, the basal part forming a triangle in front of the spiracles, while in *P. fulvofemoratus* it is not much broader than the parts of it at the keel, and is also narrowed in the middle. The black at the base of the second abdominal segment is prolonged along the sides, while in *P. fulvofemoratus* it is completely transverse; in the latter species too the base of the black mark is sharply indented, the sides projecting sharply.

✓ 10. **Polycyrtus canaliculatus.** (Tab. X. fig. 7, metanotum and base of abdomen.)

Niger, flavo-varius; apice scutelli pedibusque, flavis; lineis 3 metathoracis femoribusque supra, nigris; alis hyalinis, stigmatibus testaceo. ♂.

Long. 15-16 millim.

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

Head, pro- and mesothorax coloured as in *P. montezuma*; the mandibles only black at the base; apical half of the scutellum yellow; frontal spine shortish, conical. Metanotum with a broad black mark at the base, which is not joined to the black suture of the metapleura; a broad band runs down the centre from the base, where it is not dilated; a narrower line runs down from the spiracles; there is no transverse line, and the transverse keel is distinct; behind it in the middle is an indistinct, somewhat triangular, area; a suture runs from it down the black central line; pleuræ transversely punctured; spines broad, longish. First abdominal segment black, except at the apex and along the sides; second segment with a black line along the base and continued along the sides for about the basal third of the segment; in front of this is a large black mark, narrow at the base, the apex transverse, the sides not rounded; basal half of the third segment black; the other segments narrowly lined with black. There is a black mark on each coxa, and a somewhat obscure black line over the femora and trochanters (this latter interrupted); the base of the hind tibiæ is black.

The second abdominal segment is marked very much as in *P. montezuma* and *P. blanditus*; the former, however, has the central black mark longer and slightly indented at the base, the apex being transverse, while in *P. canaliculatus* the sides are cut off; the latter has the base not rounded as in *P. canaliculatus*, but sharply truncated, and at the apex the sides project. Neither of the above species has the black line on the metanotum sulcated.

11. *Polycyrtus blanditus*. (Tab. IX. fig. 21.)

Long. 15 millim.

Hab. GUATEMALA, El Reposo 800 feet (*Champion*).

Smooth, shining, impunctate; the sides of the prothorax longitudinally striated. Antennæ longer than the body, the white ring broad and placed near the apex; pilose. Ocelli raised; two carinæ run from them to the frontal spine (which is broad and rather obtuse) becoming more distinct as the spine is reached. A large fovea immediately below the antennæ. Apex of the clypeus and the base of the mandibles black. Sides of the prothorax depressed; in front is a sharp margin, from which, at the top, an oblique keel runs to a large semilunate depression at the apex. Sutures of the mesonotum deep; a short keel in the centre of the middle lobe at the base. The prothorax is black, except the prosternum and a broad mark on the edge above. Mesonotum black; two short yellow lines in the middle; the keels in front of the scutellum, and the apical half of the latter, yellow; the pleuræ below the wings are black, as well as the sutures; the sutures between the meso- and metanotum and the postscutellum are yellow. Metathorax yellow, the base broadly black; a broad black

line down the centre from the black basal part; a thinner line runs from the spiracles down the sides, and there is a small black mark over the hind coxæ; the upper transverse keel is distinct and is curved upwards a little in the middle, from which a short keel runs upwards; the second transverse keel is obsolete; spines longish, stout, slightly curved. Petiole black, except at the sides and beneath; apex of the postpetiole yellow. The second segment yellow, black at the base and a short distance along the sides; in front of this is a large black mark, rounded and narrowed at the base, the apex truncated in the middle, the sides projecting. The other segments are broadly black at the base. There is a black line on all the coxæ and over the femora and trochanters; the anterior tarsi are black at the apex. Areolet longer than broad, dilated at the apex; the outer nervure thin but distinct.

12. *Polycyrtus paululus*.

Polycyrtus paululus, Cresson, Proc. Acad. Phil. 1873, p. 145 (♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

13. *Polycyrtus junceus*.

Polycyrtus junceus, Cresson, Proc. Acad. Phil. 1873, p. 145 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

14. *Polycyrtus chontalensis*. (Tab. X. fig. 8, metanotum and base of abdomen.)

Niger, flavo-varius; scutello apiceque abdominis segmento 2^o, flavis; metathorace punctulato; alis hyalinis, stigmatibus nigris. ♂.

Long. 18-19 millim.

Hab. NICARAGUA, Chontales (*Janson*).

Antennæ stout, as long as the body, covered with close pubescence. Eyes margined; front depressed, the spine short, conical, and obtuse; face punctured, projecting in the centre; mandibles black at the base; above the antennæ the head is black, except round the eyes. Pronotum black, except a broad line above. Mesonotum black, a yellow line along the outer edge of the central lobe; pleural sutures black; scutellum yellow, except at the base; the carinæ in front of it being also yellow, as is also the suture between the meso- and metanotum. Metanotum black at the base, along the transverse keel and down the sides broadly from the spiracles; a broader line down the centre, and a mark over the hind coxæ, black; the basal region slightly, the rest strongly, punctured, the sides transversely striated; the centre, between the two distinct transverse keels, longitudinally striated; from the upper transverse keel two short, slightly diverging keels run halfway towards the base in the centre; tubercles broad, obtuse. Petiole black at the base, a thin line along the sides and a thin central

line running to the postpetiole, which is also black, except at the apex. The second segment is black, broadly yellow at the apex; a thin lateral spot at the base, and a larger one in the centre of the black part. The other segments black, except at the apex; the black on the apical segment smaller and narrower from the centre. Ventral surface yellow, the segments lined with black. The four anterior coxæ have a black line at the base and a larger black spot at the apex; the hind coxæ are broadly lined with black down the centre, which is hollowed and transversely striated and punctured. Areolet longer than broad, the outer nervure bullated.

15. *Polycyrtus acerbus*.

Polycyrtus acerbus, Cresson, Proc. Acad. Phil. 1873, p. 144 (♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

16. *Polycyrtus macer*.

Polycyrtus macer, Cresson, Proc. Acad. Phil. 1873, p. 144 (♂ ♀)¹.

Hab. MEXICO, Cordova¹ (*Sumichrast*).

17. *Polycyrtus guatemalensis*. (Tab. X. fig. 9, metanotum and base of abdomen.)

Niger, flavo-varius; apice scutelli flavo, dimidio basali tibiarum posticarum nigris; alis fere fumatis, stigmate nigro. ♂.

Long. 16 millim.

Hab. GUATEMALA, Purula (*Champion*).

Head black above the antennæ, except the orbits; the apex of the clypeus and the base of the mandibles black; spine longish, stout, not tapering much towards the apex; a carina runs from its sides to the eyes, another obliquely upwards and another less strongly defined from its centre upwards. Prothorax black, except the prosternum and a broad mark on the edge. Mesonotum black, except two lines at the base of the middle lobe, which has a short keel in its centre at the base. Scutellar keels and the apex of the scutellum, broadly yellow. Pleural sutures black. Near the base of the metanotum is a transverse, rather wide depression, which is black, the black touching the extreme base in the centre; from this a broad black line runs down the centre and a narrower one runs down the sides from the spiracles; over the hind coxæ is a black mark. The metathorax is not very much shorter than the mesothorax; it has a gradual slope to the apex; in the centre is a longitudinal canal; the sides are transversely striated; the spines are long and curved; the upper transverse keel is distinct, the lower one obsolete; the sides in front of the hind coxæ project as a blunt tubercle. Petiole black, except laterally and beneath; postpetiole yellow at the apex. Second segment with a large black mark, which occupies three fourths of it, and has a small

yellow transverse line in its centre at the base. The other segments are broadly black at the base. All the coxæ bear a black line on the outside; all the femora, trochanters, the four anterior tibiæ and tarsi, and the basal half of the hind tibiæ are black above. Areolet longer than wide, the outer nervure distinct and nearly joined to the recurrent nervure.

Not unlike *P. chontalensis*, but the metanotum is not strongly punctured and the spines are much longer, thinner, and curved.

18. **Polycyrtus nigriritibialis.** (Tab. X. fig. 10, metanotum and base of abdomen.)

Niger, flavo-varius; apice scutelli, abdominis segmento 2° apice et basi, flavis; tibiis posticis nigris; alis hyalinis. ♂.

Long. 12 millim.

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

Antennæ much longer than the body, pilose; third joint considerably longer than the fourth. Head black above the antennæ, except the orbits broadly; frontal spine longish, thick, not tapering much towards the apex; three carinæ, not very distinct, lead to it from above; eyes not distinctly margined. Sides of the prothorax black and longitudinally striated; above black, except a broad yellow line on the edge. Mesonotum black; two lines in the centre, more than the apical half of the scutellum and its keels, yellow. Pleuræ below the wings black. The centre of the metanotum broadly in the middle at the base black, the black continued as a narrow line down the pleuræ, and in the middle as a broad stripe; a narrower line down the sides from the spiracles (joined to the middle stripe by a short transverse line), and a small line over the hind coxæ, black; the metanotum is depressed in the middle behind the postscutellum; upper transverse keel distinct, the lower obsolete; spines long, stout. First abdominal segment black, except at the apex and laterally; second segment with a large black mark, dilated at the apex like the segment itself; the other segments broadly black at the base. A broad line on all the coxæ, a line over the four anterior legs and also over the hind trochanters and femora, and the hind tibiæ entirely, black. Areolet longer than broad, the outer nervure quite distinct.

19. **Polycyrtus mancus.**

Polycyrtus mancus, Cresson, Proc. Acad. Phil. 1873, p. 145 (♂ ♀)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

20. **Polycyrtus fulvipes.** (Tab. X. fig. 11, metanotum and base of abdomen.)

Niger, flavo-varius; thorace punctulato; scutello nigro, apice flavo; pedibus fulvis, anticis flavis; alis hyalinis, apice fumatis. ♂.

Long. 12 millim.

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

Antennæ much longer than the body; pilose, especially on the lower side. Head yellow; behind, the middle of the vertex, and the mandibles, black; closely punctured; below the ocelli striated; frontal spine longish, acute. Thorax strongly punctured, mesopleura striated in the middle, metapleura reticulated; base of the metanotum reticulated, striated. Scutellum with a few scattered punctures. Prothorax in front, a longish line on the edge of the pronotum, the tegulæ, the tubercle beneath them, a large oblique mark on the lower side of the mesopleura, the sternum, the greater part of the metapleura, two longish lines on the disc of the mesonotum, the apex of the scutellum, the postscutellum, and two large marks on the metanotum covering the tubercles, yellow; tubercles shortish, thick. First abdominal segment yellow, a large black mark towards the apex, which is itself yellow; the other segments black, yellow at the apex. The four anterior coxæ are yellow, the hind pair fulvous like the rest of the legs and with a yellow mark at the base. Areolet minute, narrow, closed at the apex.

21. *Polycyrtus reliquus*.

Polycyrtus reliquus, Cresson, Proc. Acad. Phil. 1873, p. 146 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

This species agrees with *P. fulvipes* in having the thorax punctured, but the punctuation is stronger; there is only one yellow mark on the mesonotum; the scutellum is, for the greater part, yellow; the spines on the metathorax are nearly obsolete; the black central stripe on the metanotum is separated from the basal black part; the hind femora are yellow and lined with black, and the femora are also lined with black.

22. *Polycyrtus copiosus*.

Polycyrtus copiosus, Cresson, Proc. Acad. Phil. 1873, p. 146 (♂ ♀)¹.

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

23. *Polycyrtus accuratus*.

Polycyrtus accuratus, Cresson, Proc. Acad. Phil. 1873, p. 147 (♀)¹.

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

24. *Polycyrtus furvus*.

Polycyrtus furvus, Cresson, Proc. Acad. Phil. 1873, p. 147 (♂)¹.

Hab. MEXICO, Orizaba¹ (*Sumichrast*).

B. *Body for the greater part red.* (Species 25–34.)25. ***Polycyrtus univittatus.****Polycyrtus univittatus*, Cresson, Proc. Acad. Phil. 1873, p. 148 (♂ ♀)¹.*Hab.* MEXICO, Orizaba, Cordova¹ (*Sumichrast*).26. ***Polycyrtus pallidus.****Polycyrtus pallidus*, Cresson, Proc. Acad. Phil. 1873, p. 148 (♂)¹.*Hab.* MEXICO, Cordova¹ (*Sumichrast*).27. ***Polycyrtus pallidibalteatus.***

Pallide rufus ; antennis, vertice, prothorace, tegulis, mesothorace, metathoracis basi abdominisque dorso (apicibus segmentorum exceptis), nigris ; annulo flagello antennarum, facie, ore, orbitis, linea pronoti, apice scutelli postscutelloque, albis ; alis hyalinis, nervis nigris. ♀.

Long. 21 millim.

Hab. MEXICO, Orizaba (*Bilimek*).

Antennæ, if anything, longer than the body, covered with a microscopic pile. Head impunctate, shining ; pale white, except the vertex in the centre and behind ; frontal spine stout, about one half the length of the scape. Lobes of the mesonotum well developed (especially the middle one), the lateral one with a very distinct margin along the edge. The two transverse keels on the metanotum are distinct, the upper one but slightly bent upwards in the middle ; the lower one is bent sharply upwards, thus \wedge ; spines short, blunt (double as long as wide). The metathorax bears some scattered pale longish hairs ; the black at the base of the metanotum is divided in the middle and it runs there and at the sides into the red. Petiole black, reddish at the base, sides, and beneath ; the apex of the postpetiole broadly white. The apices of the segments are broadly yellowish-white ; the tarsi whitish or yellowish ; the anterior legs yellowish in front, and the tips of the tarsi are black.

I am not quite sure but this species may be identical with the Brazilian *P. histrio*, Spinola (Ann. Soc. Ent. Fr. ix. p. 155, t. 7. fig. 3 ; Brullé, Hymén. iv. p. 214 ; Taschenberg, Zeits. f. d. gesamt. Naturwiss. xlviii. p. 78), with which it agrees in coloration ; but *P. histrio*, so far as I can make out, has only one keel on the metanotum, the lower one so conspicuous in the present form being absent. Brullé furthermore describes the spines as “longues et un peu arquées” in the female, terms which scarcely fit *P. pallidibalteatus*. From the next species it may easily be known by the much darker dorsum of the abdomen (including the petiole), and by the black base of the metanotum ; *P. erythrosterneus*, moreover, having the spines much longer and sharper with no keel between them, the face being black.