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(BEING A CONTINUATION OF THE 'ANNALS' COMBINED WITH LOUDON AND
CHARLESWORTH'S 'MAGAZINE OF NATURAL HISTORY'.)

CONDUCTED BY

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first being considered by Mr. Tosh * as the young of the season at five and a half months. It would be difficult to separate that at 65 millim. from the same series, but one at 85 is considerably older, probably by a year (or, as Mr. Tosh puts it, one year and three months). The usual arrangement of the spines on the gill-cover in such forms is as follows:—A spine points downwards at the ventral edge of the preoperculum, two short spines project above, then the upper long spine, above which is the opercular spine. Two short spines occur on the suboperculum.

Those of 57 and 74 millim. in February represent specimens about a year old, while those of 98 millim. are in their second year or approaching it. One of these (98 millim.) had almost ripe eggs, so that the remark in the new edition of the 'Scandinavian Fishes,' that it does not propagate its species until about 150 millim. long, is not applicable to our country.

XXV.—*New Species of Hymenoptera from Central America.*

By P. CAMERON, F.E.S.

DURING the course of publication of my work on the Hymenoptera of Central America (Biol. Centr.-Am., Hymen. vols. i., ii.) the following new species have come to hand, too late to be inserted in their proper places. As it will be some time before the Supplement of the 'Biologia' can be commenced, it is considered advisable to publish the following preliminary descriptions.

Fam. Cynipidæ.

ANDRICUS.

Andricus, Hartig, in Germar's Zeitschr. ii. p. 185.

Aphilothrix, Foerster, Verh. zool.-bot. Ges. Wien, 1869, p. 335.

This is a dimorphic genus, *Andricus* being the spring bisexual and *Aphilothrix* the autumnal agamic (unisexual) form.

Andricus (Aphilothrix) aztecus, sp. n.

Aphilothrix (?) *aztecus*, Cameron, Biol. Centr.-Am., Hymen. i. t. xx. fig. 23.

Ferrugineus; alis hyalinis, nervis pallide flavis.

Long. fere 4 millim. ♀.

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

* Twelfth Ann. Report Scot. Fish. Board, part iii. p. 333.

Head and thorax closely, finely, rugosely punctured, the mesonotum finely transversely striated; a longitudinal furrow outside the parapsidal one, reaching to the apex, but not to the base of the mesonotum; the scutellum is more strongly punctured than the mesonotum; the sternum and the lower part of the mesopleuræ black. Antennæ entirely ferruginous. The tips of the mandibles black. Abdomen of a lighter tint than the thorax, shining. The legs have the tarsi lighter coloured than the tibiæ or femora.

I believe this is a true *Andricus* (*Aphilothrix*). The third joint of the antennæ is hardly one third longer than the fourth; the parapsidal furrows are distinct and complete; the foveæ at the base of the scutellum are broad, not very acutely separated; the metanotal furrows are straight and parallel. The radial cellule is entirely open at the fore margin, the areolet obsolete. The claws have only one tooth.

Fam. Chalcididæ.

Subfam. CHALCIDINÆ.

Smicra ardens, sp. n.

Long. fere 6 millim.

Hab. Mexico, Orizaba (*F. D. Godman and H. H. Smith*).

Antennæ deep black, with a bright clear yellow line on the underside of the flagellum, which is stout and thickly covered with short black microscopic hair. Head lemon-yellow, the occiput for the greater part black; the centre of the vertex black, and from this runs a narrow black line to the bottom of the occiput; on the top and in front the head is thickly covered with black hair. Thorax lemon-yellow, covered rather thickly with black hair, the hair being longest on the scutellum. The mesonotum in the centre is transversely striolated, the sides coarsely punctured; at the base is a black transverse line, narrowed at the sides; from this runs to the scutellum a broad black line, narrowed at the base, dilated towards the apex, which has also a transverse line in front of the scutellum; down the centre of the scutellum is a black line, narrowed at the apex. The mesopleuræ and the sternum are for the greater part black, the former having an irregular yellow mark under the tegulæ in front and a smaller one obliquely under it over the sternum; the metapleuræ are yellow, bordered all round with black. The apex of the scutellum is margined, narrowed to a blunt rounded point at the tip. The median segment is short, not much longer

than the petiole, irregularly reticulated. The abdomen is nearly as long as the head and thorax united; the apical segment entirely, the base, sides, and apex of the second segment, and the apices of the other segments black. The legs are of a paler, more lemon-tinted yellow than the thorax; there is a black line, dilated at the apex, down the centre of the coxæ; the hind trochanters, a small mark near the centre of the hind coxæ above, a large irregular mark at the base, a smaller one at its apex, both being united by a curved line along the lower side, a short line on the top of the middle femora, and a mark at the base of the hind tibiæ black; a large irregular mark on the inner side of the hind coxæ at the foot, and a smaller, narrower, more elongate one above it black. There are sixteen femoral teeth of moderate size, blunt, and becoming smaller towards the apex. In the wing at the cubitus there is a small fuscous cloud.

Smicra divinatorix, sp. n.

Coccinea, flagello antennarum nigro; alis fere hyalinis.
Long. 7 millim. ♀.

Hab. Honduras, Ruatan Island (*Gaumer*).

Head and thorax covered with black pubescence, the pleuræ with the pubescence shorter and paler. Flagellum of the antennæ deep black, covered with short, close, blackish pubescence. Head uniformly coloured, except that the lower part of the cheeks is paler, the tips of the mandibles black, the vertex closely punctured; the front transversely striated. Prothorax sharply margined in front, the pronotum (especially at the sides) longitudinally striated. Mesonotum transversely striolated, the lateral lobes only on the inner side; the outer side with scattered punctures. Scutellum strongly and closely punctured, except behind. The median segment strongly reticulated. The propleuræ impunctate, shining; the mesopleuræ striolated in front, the top and bottom punctured. The petiole short and thick, hardly half the length of the hind coxæ. Abdomen shining, the sides sparsely haired, the ovipositor deep black. The legs coloured like the body, shining, sparsely covered with pale hair; the tips of the tarsi blackish; the hind femora with nineteen short black teeth. Wings with a smoky tint; the nervures fuscous; a small fuscous tint below the stigmal branch.

Smicra fasciola, sp. n.

Coccinea; flagello antennarum lineisque mesonoti nigris; alis hyalinis; femoribus posticis multidentatis.
Long. 4-5 millim. ♀.

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

Antennal flagellum deep black, covered with a close pale pubescence; the scape pale ferruginous, lined with black above. Head closely covered with blackish pubescence; the lower part of the occiput and a broad line on the lower part of the front black; face shining, the sides obscurely punctured; the front obliquely striated from the ocelli to the eyes; the vertex punctured, but not strongly; the teeth of the mandibles black. Pronotum coarsely, rugosely punctured; mesonotum not quite so coarsely punctured, the middle lobe strongly transversely striolated, covered with short black hair; the scutellum still more strongly punctured, its apex roundedly margined, covered with much longer hair than the mesonotum; a transverse line bordering the base of the mesonotum. The edges of the middle lobe of the mesonotum, a broader stripe down its centre, a small mark on the centre of the lateral lobe and a line down the centre of the scutellum, the base and sides of the median segment, a broad line down its centre, a line on the mesopleura, becoming gradually wider towards the bottom, a mark at the base of the metapleuræ, a line down the hinder coxæ, and the coxal teeth deep black. The petiole short, not much longer than broad, black above; the dorsum of the abdomen more or less black; the apex of the ovipositor black. Wings almost hyaline; the nervures fuscous.

Allied to *S. flammeola*, Cresson.

Smicra armillata, sp. n.

Nigra, punctata, pedibus abdomineque rufo-maculatis; alis hyalinis.
Long. fere 5 millim. ♂.

Hab. Mexico, Orizaba (*F. D. Godman and H. H. Smith*).

Antennæ a little longer than the head and thorax united; stout, covered with a pale microscopic down; the scape keeled broadly beneath, especially towards the apex. Head coarsely punctured, not very deeply or broadly excavated in the front, covered with short white hair. Mesothorax coarsely punctured, without longitudinal furrows; the pronotum as closely but not so strongly punctured. The scutellum is as strongly punctured as the mesonotum, rounded and stoutly

margined behind. The median segment is strongly rugosely punctured ; in its centre are two keels near each other at the base, then near the middle curving towards the sides. The pleuræ are strongly and coarsely punctured, especially the metapleuræ. The abdomen is a little shorter than the thorax ; the petiole is about three fourths the length of the abdomen, which is shining, impunctate, ferruginous, darker towards the apex. The apical half of the fore femora and the fore tibiæ and tarsi testaceous ; the middle tibiæ are infuscated ; the hind legs are black, the femora broadly ferruginous at the base on the inner side, the tarsi pale testaceous. The wings are hyaline, iridescent, slightly suffused with fuscous ; the nervures deep black.

In the large number of teeth (eighteen) on the hind femora and in general coloration this species agrees with *S. petioliventris*, Cam., from the Pacific slope of Guatemala ; but it is much larger, the petiole is longer and narrower, the thorax is without markings, and the abdomen is ferruginous.

Subfam. *PERILAMPINÆ*.

PERILAMPUS, Latr.

There are six described species of this genus from North America and one from the West Indies. The genus is moderately represented in Europe. Nothing seems to be known of the habits of the species.

Perilampus mexicanus, sp. n.

Nigro-cupreus, albo-pilosus, abdomine cæruleo, geniculis, apico tibiarum coxisque flavis ; alis hyalinis, nervis flavis. ♀.
Long. 4 millim.

Hab. Mexico, Vera Cruz (*H. H. Smith*).

Antennæ stout, black, the tip testaceous ; the scape blue, bare, furrowed beneath, especially towards the apex ; the flagellum covered with a close white pubescence. The face for the greater part black ; the part immediately below the antennæ bare, blue, the rest densely covered with white hair ; the vertex green, with golden or coppery tints, finely punctured ; the tips of the mandibles testaceous ; the vertex and the sides of the excavated face margined. Thorax above coarsely rugosely punctured, reticulate at the sides and in front, black, with green and coppery tints, densely covered with white hair ; the outer edge of the mesonotum smooth and impunctate ; the scutellum is more coarsely punctured

than the mesonotum, the apex margined, rounded; the mesopleuræ shining, impunctate, the edges with large deep punctures; the propleuræ rugosely punctured. The abdomen blue, shining, impunctate, bearing white hair. Legs green, covered with short white hair; the extreme apex of the hinder tibiæ, the apical third of the middle tibiæ, the greater part of the anterior tibiæ, all the knees, and the tarsi yellowish, the tarsi of a paler yellow than the tibiæ.

Perilampus antennatus, sp. n.

Long. 2.5 millim.

Hab. Mexico, Vera Cruz (*H. H. Smith*).

A smaller species than *P. mexicanus*, from which it differs in having the flagellum of the antennæ entirely testaceous beneath, the body uniformly coloured (wanting the green and coppery reflections), the scutellum larger and more pointed, and the legs darker in colour.

Antennæ moderately stout; the scape dark blue, shining, almost bare; the flagellum covered with a pale pile, testaceous beneath, black above. Head black, finely punctured above, and with a close short pile; the face shining; the central part broadly triangularly dilated, the base of the triangle raised and separated by a furrow from the rest; the tips of the mandibles testaceous. The thorax above is closely punctured, the lateral lobes of the mesonotum only slightly punctured and more shining than the rest. The scutellum is large, coarsely punctured; the apex margined, projecting a little over the apex of the median segment. The propleuræ with large widely separated punctures in front; the mesopleuræ excavated in front, shining, the edges with large deep punctures. The abdomen short, shining, very dark blue. The legs are black, covered with long white hair; the knees, the apex of the four hinder tibiæ, the fore tibiæ in front, and the tarsi testaceous, the extreme tips of the tarsi blackish. The wings are clear hyaline, the nervures testaceous.

Fam. Trigonalidæ.

TRIGONALYS, Westw.

It is evident that this genus will prove to be numerously represented in Central America. I have called the family Trigonalidæ; but Foerster, it may be remarked, has named it Diplomorpha, distinguishing it from his *Eutrichocera* (= *Stephanus*) by the scape of the antennæ not being filiform

and by having the first abdominal segment not petiolate (cf. 'Ueber den systematischen Werth des Flügelgeäders bei den Hymenopteren,' p. 23).

From Smith finding *Trigonalys bipustulata* in a nest of *Polistes lanio*, it is probable that the genus is parasitic in wasp nests (cf. Smith, Trans. Ent. Soc. Lond. i. (n. s.) p. 176).

The six species here described may be separated as follows:—

- 1 (2). Scutellum pyramidal, bifid at the top *scutellaris*.
- 2 (1). Scutellum flat, not divided at the top.
- 3 (4). Body yellow, marked with black; second cubital cellule petiolate *maculifrons*.
- 4 (9). Body black, marked with yellow; second cubital cellule not petiolate.
- 5 (6). Abdomen fulvous, banded with black *apicipennis*.
- 6 (5). Abdomen black, narrowly banded with yellow .. *flavonotata*.
- 7 (8). Thorax with many yellow marks; the wings not smoky in front.
- 8 (7). Thorax with few yellow marks; the wings broadly smoky in front. *fasciaticipennis*.
- 9 (4). Body black, the petiole white; wings violaceous. . *Championi*.

Trigonalys scutellaris, sp. n.

Nigra, postscutello maculisque 2 metanoti, tibiis tarsisque flavis; alis fulvo-hyalinis. ♂.
Long. 10 millim.

Hab. Mexico, Omilteme in Guerrero, 8000 feet (*H. H. Smith*).

Antennæ entirely black, covered with a short black microscopic down; the third joint distinctly shorter than the fourth. Head impunctate, shining, densely covered, and the mandibles also, with long dark fulvous hair, the mandibles entirely black. Thorax densely covered with long dark fulvous hair, above coarsely rugosely punctured; postscutellum pyramidal, yellow, depressed in the centre above, making it bidentate; the teeth blunt, rounded at the top; at its sides the thorax is crenulated. The median segment coarsely reticulated, the apex in the middle coarsely transversely striolated, its extreme apex being also crenulated behind the reticulated part; the pleuræ irregularly reticulated, the base of the propleuræ and the apex of the mesopleuræ smooth, the metapleuræ more strongly reticulated than the mesopleuræ. Abdomen shining, impunctate; the base of the third and sixth segments transversely, and of the fourth and fifth segments more broadly, at the sides yellow;

the seventh segment fulvous, blackish in the centre, and with two small yellow marks; the ventral segments entirely black, shining, shortly and sparsely haired.

In the above described example the neuration of the wings is irregular; the stigma is black; the nervures are fuscous; the basal abscissa of the radius is oblique, straight; the first transverse cubital nervure is curved. In one wing there are two transverse cubital nervures between this latter and the normal first and third, and in the other one beyond the usual number, the position being irregular in both, the size of the cellules, too, showing a difference.

A second specimen from Omilteme is probably a variety of the same species. It is a little smaller; the scutellum is not so sharply peaked and hardly bifid; there is no mark on the median segment and no yellow lines on the abdominal segments. The alar neuration appears to be fairly normal; the first transverse cubital nervure is obliquely curved and is almost (in one wing quite) united to the second and to the apex of the basal abscissa of the radius; the second nervure is slightly oblique, the third almost straight; the first recurrent nervure is received quite close to the first transverse cubital, the second shortly before the middle of the cellule.

Trigonalys maculifrons, sp. n.

Flava, nigro-maculata; alis hyalinis, anticis fumatis, nervis fulvis. ♀.

Long. 11 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

Antennæ rufous, the base of the flagellum blackish; the scape black above; the third and fourth joints about equal. Head lemon-yellow; the upper part thickly covered with short fuscous hair, the oral region and the mandibles with longer white hair; the teeth of the mandibles, a line from the end of the vertex to the antennal tubercles, becoming gradually wider to the apex, dilated at the sides, and enclosing a yellow mark, broader than long, below the ocelli, a somewhat oval mark on the occiput, from which (but not touching it) a broad line runs to the eye, which it joins, and behind the top of the eye a somewhat triangular mark, black. The mesonotum is coarsely punctured, thickly covered with short fuscous hair; the parapsidal furrows are distinct; on the outer side of these is a black line reaching to the scutellum, and there is an equally broad line (but narrowed at the base) down the centre; the scutellum is bordered at the base and sides with black, and in the apex in the centre is a black

mark, triangularly pointed at the base and the apex, the extreme apex being bordered with black. The median segment has a broad black line, slightly and gradually narrowed towards the apex, and at the sides is a shorter and narrower black line inside the spiracles, which does not reach the apex. The propleuræ are coarsely punctured, except on the lower part and close to the tegulæ, the punctures on the lower part running into reticulations; the oblique furrow on the mesopleuræ is deep, moderately wide, but becoming narrowed towards the apex. Petiole shining, impunctate, depressed and black in the centre at the base. The second to the fifth segments broadly black at the base, the black on the second segment dilated in the middle and extending along the sides to the apex as a narrow line. The ventral segments are narrowly edged with black at the apex. Legs yellow, the femora lined with black above, the hinder coxæ black on the lower side, the middle trochanters blackish. The second cubital cellule is shorter than the third, oblique, shortly petiolated above; the third cubital cellule becomes wider towards the apex; the first recurrent nervure is interstitial, the second received shortly before the middle of the cellule. The base of the fore wing to the transverse basal nervure and the apex to the middle of the cubital cellules suffused with fulvous.

This species bears a great resemblance to a wasp (*Polistes*), which fact is of interest in connexion with their supposed habits.

Trigonalys apicipennis, sp. n.

Nigra, dense fulvo pilosa, abdominis apice late fulvo, tibiis tarsisque posticis testaceis; alis fulvo-hyalinis, apice fumatis. ♀.
Long. 8 millim.

Hab. Mexico, Atoyac in Vera Cruz (*H. H. Smith*).

Antennæ as long as the thorax, the middle thickened, the apical part gradually and sharply narrowed; almost bare, the third and fourth joints testaceous; black at the apex; the third joint distinctly longer than the fourth. Head closely punctured on the front and vertex; densely covered, the mandibles (except the teeth) and clypeus included, with long fulvous hair; the clypeus shining, impunctate. Thorax covered with fulvous hair, closely punctured; the mesonotum almost transverse at the base, depressed in the middle at the base, and with a narrow indistinct furrow down the sides; the scutellum rugosely punctured, thickly covered with long fulvous hair, the sides at the apex with two narrow keels;

the pro- and mesopleuræ strongly punctured, the former excavated in the centre, the latter with a broad shallow oblique furrow in the middle; the metapleuræ with an oblique crenulated depression down the centre, the apex coarsely punctured. Petiole flat above, impunctate, covered with long white hair, the sides above and at the apex rufo-testaceous; the other abdominal segments covered closely with white hair, the apex of the second and third segments broadly, and the other segments entirely, rufo-fulvous; beneath, the petiole and the second segment are rufo-fulvous at the apex. Legs covered with white hair; the fore tibiæ and tarsi in front, the middle tibiæ in the centre in front, the basal joint of the middle tarsi entirely, the hinder tibiæ, except a black line in the centre behind, and the metatarsus, except at the extreme apex, yellowish testaceous. The wing-nervures are fulvous, the stigma black; the first transverse cubital nervure is broadly curved and narrowed towards the second, the second and third nervures are straight, oblique. The second cubital cellule is much narrowed at the top, being there not much more than the distance bounded by the recurrent and the first transverse cubital nervures; the first recurrent nervure is received quite close to the base of the cellule, the second shortly before the middle and is largely bullated at the top, the three transverse cubital nervures being also shortly bullated near the bottom; the tegulæ and the tubercle beneath them are yellowish.

Trigonalys flavonotata, sp. n.

Nigra, thorace flavo-maculato; pedibus flavis, femoribus late nigris; alis hyalinis, antice fumatis. ♂.

Long. 10 millim.

Hab. Mexico, Xucumanatlan in Guerrero, 7000 feet (*H. H. Smith*).

Antennæ as long as the head, thorax, and petiole, thickened towards the middle; the second joint and the base of the third testaceous. Head shining, impunctate, densely covered with long fuscous hair; the clypeus depressed at the apex; the mandibles covered with long white hair, piecous before the teeth. Thorax densely covered with fuscous hair; the mesonotum with the parapsidal furrows moderately distinct, converging towards the apex; the sides of the pronotum closely obliquely striated, with an impunctate space at the base, the apex with a yellow mark, broad at the tegulæ, narrow in front. The mesonotum rather coarsely punctured;

a yellow elongated line at the base of the furrow and a shorter broader one at the apex; towards the apex are two straight shining lines. Scutellum coarsely rugosely punctured; there are two yellow marks on its base, and at the sides of these is an oblique yellow mark close to the wings; at the sides of the scutellum the mesonotum is shining, impunctate, and marked with oblique keels; at the apex of the scutellum the punctuation runs into reticulations; at the sides of the scutellum there are also short oblique keels reaching from the wings to the apex of the scutellum, and with a short yellow mark near the wings. The median segment stoutly transversely striolated; at the base in the centre are two small yellow marks, and at the apex laterally are two large yellow marks. Mesopleuræ coarsely punctured, the punctures running into reticulations at the apex, densely covered with white hair; the metapleuræ excavated at the base, shining, impunctate, the apical part punctured coarsely, the apex crenulated. Abdomen shining, impunctate; all the segments edged with yellow. The ventral segments without yellow, shining; the first segment at the base crenulated, the apex of the second and third segments projecting into two triangular teeth; there is a smaller projection on the fourth segment. Legs sparsely covered with pale hair; the coxæ pale yellow, the hinder pair black at the base; the trochanters yellow, the front pair marked with black beneath; the four front femora are almost entirely black; the hinder pair black, yellow at the base and apex. The radial nervure is curved and is received shortly before the second transverse cubital nervure; the first transverse cubital nervure is sharply elbowed below the middle, the second slightly oblique, the third straight; the first recurrent nervure is received in the basal fourth of the cellule, the second before the middle; the second and third cubital cellules at the bottom are about equal.

Trigonalys fasciatipennis, sp. n.

Nigra, capite et thorace albo-maculatis, femoribus posterioribus brunneis; alis hyalinis, anticis fumatis.
Long., ♀ fere 10, ♂ 6 millim.

Hab. Mexico, Atoyac in Vera Cruz [♀], Venta de Zopilote in Guerrero [♂] (*H. H. Smith*).

Antennæ slender, reaching to the middle of the abdomen, brownish beneath in the middle; the apex of the scape yellow. Head closely punctured, covered with a short white pubescence; the orbits of the eyes to near the top,

a mark on the edge behind on the level of the top of the eyes, the antennal tubercles, the sides of the clypeus, and the mandibles before the teeth yellow. Thorax above rather strongly punctured; the parapsidal furrows deep, crenulated; the scutellum flat, closely punctured; the median segment rather strongly punctured, the punctures running into reticulations at the base, where there is a narrow shallow longitudinal furrow. The pro- and mesopleuræ closely punctured, the apex of the former almost striolated; the metapleuræ above reticulated, slightly excavated, crenulated. A spot on either side of the base of the mesonotum, two marks on the scutellum, one close to the wings, the postscutellum and two marks on either side of it, two large marks on the sides of the median segment (somewhat oblique and broadest at the apex), the edge of the pronotum, a large mark on the propleura, a large mark incised at the apex, and a small mark over the middle coxæ, and two marks on the metapleuræ, yellow. Abdomen as long as the thorax, shagreened, covered with a close pubescence; the petiole deeply excavated at the base and also at the apex in the middle, shining, black, the apex pale yellow; the other segments marked with pale yellow at the apices. The apex of the petiole beneath and of the second ventral segment yellow, the latter with the yellow dilated in the middle. The fore wings banded with fuscous from base to apex in front, the band broadest near the centre of the cubital cellules; the basal abscissa of the radius is curved and united to the second transverse cubital nervure; the second cubital cellule is longer and narrower than the third; the first recurrent nervure is received close to the first transverse cubital cellule, the second near the apical third of the cellule. The four front trochanters are black, yellow at the apex; the hinder pair and the base of the hind femora yellow.

The male is much smaller (only 6 millim. long); it has the thorax less strongly punctured; the yellow marks on the scutellum are united and longer; the two yellow marks on the median segment are larger and extend to the extreme base and apex, and are not so oblique; there is no mark on the mesopleuræ; the stigma is paler; the legs are darker coloured, wanting the rufous tinge; all the abdominal segments are yellow at the apex, and the mesonotum is not nearly so strongly punctured.

Trigonalys Championi, sp. n.

Trigonalys Championi, Cameron, Biol. Centr.-Am., Hymen. i. t. xx.
fig. 24.

Nigra, ore, coxis, trochanteribus, basi femorum, segmento mediali
petiolique albis; alis violaceis.

Long. 11 millim. ♂.

Hab. Guatemala, Panima in Vera Paz (*Champion*).

Antennæ as long as the head, thorax, and petiole united, moderately stout, entirely black, covered with a short pale down; the third joint as long as the fourth. Head densely covered with white hair; the front strongly punctured; the antennal tubercles, the clypeus, and the base of the mandibles yellowish white, the edge of the mandibles and the mandibular teeth black; the apex of the clypeus incurved. Thorax above thickly covered with fuscous hair, coarsely rugosely punctured, the punctures running into reticulations on the median segment; the median segment with the punctures more widely separated and with a wide and deep furrow at the base; the pleuræ densely covered with fuscous hair, the mesopleuræ closely punctured, the propleuræ more strongly punctured and with a pale yellow pear-shaped mark in front; the metapleuræ closely punctured, more strongly in the middle, its apex broadly pale yellow, the part in front of the stigma being black. The petiole is entirely pale lemon-yellow, shining, impunctate, sparsely covered with long white hair; the other abdominal segments are entirely black, strongly punctured, covered with short black pubescence, the apex with the pubescence longer and white; the ventral segments are covered with long soft white hair. Legs covered with white hair. The fore wings are entirely deep violaceous; the hinder pair clear hyaline, with the apex broadly violaceous.

Fam. Proctotrupidæ.

Subfam. BETHYLINÆ.

Epyris orizabæ, sp. n.

Long. 7-8 millim. ♂.

Hab. Mexico, Orizaba (*H. H. Smith and F. D. Godman*).

Very nearly related to *E. rugifrons*, Cam., from the Pacific slope of Guatemala, but smaller, less robust, the head coarsely punctured behind the ocelli (in *E. rugifrons* there is an impunctate space behind them), the middle lobe of the meso-

notum with some large deep punctures, and the head, thorax, and abdomen much less pilose.

Antennæ stout, densely covered with white pubescence, a little longer than the head and thorax united, the third joint, if anything, longer than the fourth. Head covered with long soft pale hair; coarsely punctured all over. Prothorax shorter than the head, coarsely punctured; the apex depressed, very finely punctured. The mesonotum with wide furrows, the lateral lobes coarsely punctured; the median lobe with much fewer punctures, there being very few at the base. The scutellum has some widely separated punctures on the basal half. The median segment has in the centre three central and four shorter lateral longitudinal keels; the apex above is reticulated irregularly, the apex itself being semi-perpendicular and reticulated, the reticulations running into punctures. The propleuræ striolated behind, shining; the mesopleuræ coarsely punctured; the metapleuræ striolated. The abdomen is as long as the thorax, smooth, impunctate; the apical segments bear white hair; the last segment with the apical half pale. The legs are entirely black and covered with white hair. The wings are suffused with a fuscous tint; the costa and stigma are black; the nervures at the base pale fuscous, at the apex they are almost obliterated; the first transverse cubital nervure is very pale, the others and the recurrent nervures are indicated in white, but very indistinctly.

Epyris palliditarsis, sp. n.

Niger, longe albo-hirtus; tarsis posterioribus albis. ♂.
Long. 11 millim.

Hab. Mexico, Teapa in Tabasco (*H. H. Smith*).

Head densely covered with long soft white hair, strongly rugosely punctured, the punctures on the front running into reticulations. Antennæ a little longer than the head and thorax united, distinctly tapering towards the apex, densely covered with short white hair; the third joint slightly longer than the fourth. Thorax shining; the pro- and mesothorax densely covered with long white hair; the central part of the mesonotum with the punctures large and widely separated, especially towards the apex, those on the sides smaller and closer together. Scutellum rather strongly punctured, except in the middle towards the apex. The median segment has the basal half longitudinally striated, the striations widely separated, especially towards the middle, where there is a clear space with only an interrupted longitudinal keel; the

apical part is irregularly transversely striolated, the apex is very slightly obliquely sloped and is finely and closely transversely striated. The mesopleuræ coarsely punctured, except immediately under the wings; the metapleuræ are irregularly reticulated. The abdomen is shining, the four or five apical segments densely covered with long white hair, especially at their apices. The legs are densely covered with long white hair; the two anterior tarsi are entirely black; the posterior tarsi white, black towards the apex. The lower part of the wings and the apical part from the base of the stigma are suffused with fuscous.

Allied to *E. rugifrons* and *E. orizabæ*.

Epyris scutellaris, sp. n.

Niger, capite viridi, scutello rufo; alis hyalinis, fusco-maculatis.
Long. 8 millim.

Hab. Mexico, Tierra Colorada in Guerrero, 2000 feet.
(*H. H. Smith*).

The head, except at the oral region, where it is black, metallic green, running into bluish shades on the vertex, thickly covered with white hair, strongly and closely punctured. The mandibles are pale testaceous towards the apex. The antennæ are black, densely covered with white hair; the third joint is distinctly longer than the fourth. The prothorax is, if anything, longer than broad, closely punctured, densely covered with white hair and with a not very distinct furrow down the centre. The mesonotum densely covered with white hair; the central furrows are deep, the lateral furrows narrower and less distinct, and the mesonotum outside them is dull rufous. The scutellum is impunctate, shining, rufous. The sides of the median segment project into stout teeth; at the apex above there is a semicircular area, into which run from the side of the segment a central and a lateral keel; the sides have some irregular keels, the apex is slightly oblique and is transversely striated, with a central longitudinal keel. The abdomen is shorter than the thorax, shining, covered, especially at the sides and beneath, with white hair. The legs are covered with white hair; the trochanters are pale testaceous. The basal and the radial nervures are black, the others pale testaceous; the fuscous cloud extends from the basal nervure to the middle of the radial cellule.

A prominent feature in this distinct species is the stout projecting teeth on the median segment. *E. scutellaris* should be placed near *E. erythropoda*, Cam., from Panama.

Epyris montezuma, sp. n.

Niger, antennis pedibusque testaceis; alis hyalinis, stigmatenervisque pallidis. ♀.

Long. fere 4 millim.

Hab. Mexico, Orizaba (*F. D. Godman and H. H. Smith*).

Allied to *E. guatemalensis*, Cam., but easily separated from it by the absence of the furrows on the mesonotum and by the deep transverse depression at the base of the scutellum.

Antennæ stout, as long as the thorax, testaceous, infuscated towards the tip; the scape curved, dilated towards the apex, as long as the following three joints united, these being of nearly equal length. Head shining, faintly punctured, sparsely haired; the mandibles testaceous. The extreme base of the pronotum depressed, testaceous; the rest aciculated and with a few shallow punctures. The mesonotum much shorter than the pronotum, aciculated; in front of the scutellum is a wide, deep, somewhat curved furrow. The median segment is longer than the mesothorax; above finely and closely rugosely punctured, almost transversely striated towards the apex; there is a central keel reaching towards the apex and a shorter lateral one; the apex is almost perpendicular and finely transversely striated. The abdomen is shining, pilose at the apex, the apical segments rufous; the basal segment is gradually dilated towards the apex. Legs testaceous, the femora more or less infuscated. Wings hyaline, the nervures pallid yellow; the cubital and transverse cubital nervures obliterated entirely; the tegulæ are pallid yellow.

[To be continued.]

XXVI.—*A List of Reptiles and Batrachians from the Congo Free State, with Descriptions of Two new Snakes.* By G. A. BOULENGER, F.R.S.

AT the request of the Secretary of the Department of the Interior, Congo Free State, I have undertaken to name a collection of Reptiles and Batrachians formed in the State within the last few years, and which will be exhibited at the International Exhibition to be held this year in Brussels. At the same time I accepted to look over the specimens from the same region which are the property of the Brussels University, where they are being arranged by the Curator of the Collection, my friend M. L. De Pauw.

The females of the two species known to me in nature may be recognized as follows:—

- a. Lower surface of first caudal segment coarsely granular, its median keels granular *Herbstii*, Thor. (Guiana.)
- b. Lower surface of first caudal segment smooth, punctured, without granules, its keels obsolete *Gervaisii*, Poc. (Amazon.)

B. paraensis, Sim., from Pará, based probably upon a female, differs from the above in having the carapace entirely devoid of granules; while *B. granulatus*, on the contrary, from Cayenne, the type of which is doubtless a male, is not from the description distinguishable from the males identified as *Herbstii* in the Museum collection.

XXXIV.—*New Species of Hymenoptera from Central America.* By P. CAMERON, F.E.S.

[Concluded from p. 276.]

Fam. Sphegidae.

PODIUM.

Podium crassipes, sp. n.

Nigrum; alis fuliginosis. ♂.

Long. 40 millim.

Hab. Mexico, Omealca, near Orizaba (*M. Trujillo*).

Antennæ reaching to the scutellum, bare, pruinose. Head below the ocelli with widely separated punctures; the front thickly covered with long black hair; the vertex glabrous; a narrow thin furrow leading to the ocelli, uniting to a short, shallow, narrow transverse one behind them; there is a narrow longitudinal keel above the ocelli. The antennæ are inserted immediately over the clypeus, which at the apex projects, is roundly concave, and is roundly and rather deeply incised, and bears a few shallow punctures. The eyes reach to the base of the mandibles and converge slightly above. The prothorax is elongate, being nearly as long as the mesonotum; the anterior is separated from the longer posterior portion by a deep transverse furrow, its centre being raised behind; the anterior region is punctured and bears long black hairs, the punctureless part of the posterior portion

being almost glabrous. The anterior part of the mesonotum is covered with long black hairs and with distinctly separated punctures, the sides, too, towards the apex being longitudinally depressed. The median segment is as long as the pro- and mesothorax united; above, it is thickly covered with long black hair, closely transversely striated, a broad and deep depression down its centre, and there is another broad depression at its sides at the base and a narrower one in the middle at the sides. The pleuræ are covered with long black hairs. The propleuræ have a broad deep oblique depression in the centre, behind which they are rather strongly punctured, in front of it with only a few punctures. The mesopleuræ bear distinctly separated punctures, except on the sides of the oblique depression in the centre, above which they are obscurely longitudinally striated. The metapleuræ are impunctate. The mesosternum is covered with long black hairs and with distinctly separated punctures; there is a deep longitudinal channel down its centre, at the end of which it becomes depressed, rising again towards the mesocoxæ, the space between being hollowed and at the sides longitudinally crenulated, the part between the coxæ being slightly punctured at the sides and broadly furrowed down the centre, the sides of the furrow towards the apex having a few longitudinal keels. The petiole is longer than the hind coxæ and the second abdominal segment; the other abdominal segments shining, glabrous, the second segment depressed at the base in the centre. The third to the sixth ventral segments are alutaceous. Wings deep dark violaceous, the nervures black; the first recurrent nervure is received at half the distance from the base that the second is from the apex. The legs are almost glabrous; the tarsi spinose; the hind tibiæ spinose on the inner side, and with six irregular somewhat oval depressions on the outer side. The hind trochanters are twice the length of the coxæ. The hinder femora are broadly dilated towards the apex; the apex on the outer side is somewhat hollowed and depressed above, the top of the depression being distinctly margined, the middle above at the apex having five stout curved keels, in front of which are a few narrower oblique keels; beneath near the apex the centre is raised and the sides in the middle at the apex project into two stout teeth, between which the tibiæ fit when bent downwards.

P. crassipes may be known from the other species of *Podium* described by me by the longer bipartite prothorax, the longer hind trochanters, and the longer clavate hinder femora. The hind claws have two teeth at the base. The hind tarsi are twice the length of the tibiæ.

SPHEX, Fabr.

Sphex (Priononyx) laerma, sp. n.

Long. 28 millim.

Hab. Mexico, Rio Papagaio in Guerrero, 1200 feet (*H. H. Smith*).

Agrees in coloration with *S. Thomæ*, Fabr., except that the wings are deep dark violaceous; differing otherwise in being much longer, in the thorax wanting the thick pale pubescence, and in the scutellum being broadly furrowed down the middle.

Eyes parallel. The hinder ocelli separated from each other by about the same distance they are from the eyes. Cheeks and clypeus covered with silvery pubescence; the vertex sparsely clothed with moderately long black hair, below the antennæ with longer black hair. Apex of the clypeus transverse and with a small indentation in the centre; the sides broadly rounded. Behind the ocelli is a shallow curved furrow, behind which at the sides is a small roundish depression; there is a shallow longitudinal furrow between the ocelli and at the sides of the hinder pair, the front one being surrounded by a furrow. The scape of the antennæ is sparsely covered with long black hair; the flagellum pruinose. The pronotum is depressed near the base, the depression being shining and impunctate; the apex is finely transversely shagreened and slightly longitudinally depressed in the middle; the pleuræ alutaceous, except a shining spot on the lower part at the apex; the base longitudinally striated; at the apex is a curved narrow fringe of pale golden pubescence. Mesonotum opaque, covered with short pale hair; closely longitudinally striated, furrowed down the middle, the furrow at the base wide. Scutellum wide, raised, the middle depressed broadly; shagreened, the sides shining, impunctate. Median segment alutaceous, covered closely with pale soft hair; closely transversely striolated, the apex before the depression broadly furrowed. The mesopleuræ closely and rather strongly, the metapleuræ obliquely, striated. The petiole is black and is as long as the hinder coxæ, covered with long pale soft hair. The rest of the abdomen is shining rufous; a black triangular mark on the second segment, the narrowed part at its base; the third segment is broadly black at the base. Wings uniformly dark violaceous; the first and second transverse cubital nervures oblique, both bullated at the lower part, the third curved and much narrowed towards the second at the top, the space between them there

being about the same as that bounded by the first recurrent and first transverse cubital nervures. The fore femora have a line of coarse deep punctures on the lower side; the tibiae and tarsi are strongly spinose; the hind claws bear four stout blunt teeth, closely pressed together.

This species approaches the North-American *Sphex bifoveatus*, Taschenberg, but, *inter alia*, is readily separated by the dark violaceous wings, Taschenberg's insect having them "subhyalinis."

Fam. Bembicidæ.

BEMBIDULA, Burm.

Bembidula affinis, sp. n.

Long. fere 11 millim. ♀.

Hab. Mexico, Dos Arroyos in Guerrero (*H. H. Smith*).

Allied to *B. capnoptera*, Handl., but smaller, the markings of a paler yellow, and the labrum entirely black.

Antennæ black, the scape yellow beneath; covered with a pale down, which is thicker towards the apex of the flagellum; the clypeus is yellow, except round the apex; the inner orbits yellow to a little above the middle of the eyes, the outer orbits more narrowly lined with yellow, except at the top and apex. The labrum, front, and vertex rather thickly covered with silvery-white hair. Thorax thickly covered with short silvery pubescence, which becomes golden in hue towards the base of the mesonotum; two short marks at the base of the mesonotum, a broad line from near the base of the tegulæ to the base of the scutellum, two broad marks at the side of the scutellum, but not reaching its apex, the postscutellum, an interrupted line (broad at the apex) along the side of the median segment, a line on the mesopleuræ under the tegulæ, and the apex of the median segment at the sides, broadly, lemon-yellow. The mesopleuræ are obscurely punctured, thickly covered with white hair; the metapleuræ more shining and deeply excavated. The abdominal segments are broadly banded with lemon-yellow at the apex, the bands being distinctly interrupted in the middle; the apical segment above with some large distinctly separated punctures; beneath bluntly keeled down the middle. Legs: the coxæ, trochanters, and femora to near the apex black, for the rest yellow, except the tarsi, which have a rufous tinge, especially towards the apex, the base being clear yellow. The wings have a faint fulvous tinge.

Fam. Pompilidæ.

PSEUDAGENIA, Kohl.

Pseudogenia tarsalis, sp. n.

Nigra, tarsi rufis; alis lacteis, fusco-bifasciatis. ♀.
Long. fere 12 millim.

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

Antennæ stout, pruinose; the third and fourth joints for the greater part rufous. Head covered with a fulvous microscopic pile; the eyes almost parallel, only very slightly converging above; the hinder ocelli separated from the eyes by about the same distance they are from each other; the tips of the mandibles piceous. Thorax densely pruinose, silvery, inclining to golden on the mesonotum. The apex of the median segment irregularly transversely striolated. The apex of the mesopleuræ crenulated, and there is an indistinct oblique furrow across its middle. Abdomen shining, pruinose. The first cloud in the fore wings extends equally across the transverse basal nervure, the second and wider cloud extending from the first cubital to the third transverse cubital nervure; the first and second transverse cubital nervures are oblique, straight, the third roundly curved in the middle and narrowed towards the second at the top; the first recurrent nervure is oblique and received shortly before the middle of the cellule, the second curved and recurved distinctly in front of the middle of the cellule.

Agrees closely with *P. Championi*, Cam., from Panama; but the wings at the apex are not fulvous, the basal cloud is much wider, the third cubital cellule is hardly narrowed at the top (while it is very much narrowed in *P. Championi*), and the tarsi are rufous.

SALIUS, Fabr.

Salis incomptus, sp. n.

Niger, longe nigro-hirtus; medio antennarum late rufo; tarsi posticis late flavis; alis flavis, fusco-bifasciatis. ♂.
Long. 9 millim.

Hab. Mexico, Omilteme in Guerrero, 8000 feet (*H. H. Smith*).

Antennæ somewhat shorter than the body; the basal three and the apical four joints black, the others orange-yellow; the scape covered with longish black hair, the flagellum with a microscopic down. Head densely covered with long thick

black hair; the inner orbits above the antennæ and the entire face below them yellow; the apex of the clypeus waved, the centre dilated; the mandibles and palpi entirely black. Thorax densely covered with long black hair. The median segment gradually rounded and obscurely transversely striated; at the base in the centre is a short, wide, deep longitudinal furrow united to a longer narrower transverse one. The propleuræ are slightly hollowed; immediately over the coxæ is a sharp, distinct, oblique keel, which towards the middle of the coxæ bends more obliquely downwards, and from this bend a narrow curved keel runs up towards the tegulæ, but not reaching them. At the base of the metapleuræ shortly below the middle is a moderately large fovea. Abdomen as long as the head and thorax united, densely covered with black hairs, especially towards the apex. Legs long, sparsely haired; the front knees and tibiæ and the hinder tarsi, except the apical joint, orange-yellow. The first cloud in the wings extends from the base of the first recurrent to shortly beyond the second recurrent nervure; the apical cloud commences at the end of the radial nervure; the nervures are orange, except in the clouded parts; the second cubital cellule at the top and bottom is a little shorter than the third; the recurrent nervures are both received shortly before the middle of the cellule. The hind wings are clouded at the apex.

Allied to *S. omitemius*.

Salix imitatrix, sp. n.

Niger, basi antennarum pedibusque anterioribus rufis; alis hyalinis, fusco-bifasciatis. ♀.
Long. 9 millim.

Hab. Mexico, Cuernavaca in Morelos (*H. H. Smith*).

Almost identical in coloration with *Pseudagenia isthmica*, Cam., from Chiriqui. Antennæ covered with a microscopic down; the basal three joints rufous. The head from a little above the antennæ covered with a pale golden pile; the mandibles pale at the base, piceous before the teeth, which are black; a shallow furrow leads down from near the ocelli; the hinder ocelli are separated from each other by a slightly greater distance than they are from the eyes, which converge a little at the top. Thorax covered with a pale golden down; the collar white on either side above. Abdomen pruinose, the apex densely covered with rather long pale yellowish hairs. The four front femora have the basal half black and the apical half reddish; the fore tibiæ, the two basal joints of the fore tarsi, the middle tibiæ broadly at the base, and the

two basal joints of the middle tarsi, rufous; the front calcaria rufous, the four hinder calcaria black. The first cloud in the fore wings is at the transverse basal nervure; the second cloud is enclosed by the first and third transverse cubital nervures; the second and third cubital cellules at the top are as wide as the space bounded by the recurrent and the transverse cubital nervures.

In my arrangement of the species in the 'Biologia Centrali-Americana,' Hymen. ii. p. 182, *S. imitatrix* should follow *S. nivalis*, Cam.

POMPILUS, Fabr.

Pompilus ceres, sp. n.

Niger, abdomine albo sex-maculato; alis fumatis, albo-trifasciatis. ♀. Long. 18 millim.

Hob. Panama (*Boucard*).

Antennæ short, stout, covered with greyish pubescence. Head elongate in front, covered with a golden pubescence and with longish black hair; the eyes sinuate at the top, only very slightly converging at the bottom. Pronotum more than twice the length of the head, densely covered with long black hair. The mesonotum covered with long black hair, its base and the scutellum with pale golden pubescence; the apex of the scutellum with a distinct bordering keel, behind which it is covered with dense silvery pubescence at the sides, the central part being raised. The median segment velvety; the centre indistinctly keeled; the apex oblique, its sides and apex bearing velvety pubescence. The pleuræ are covered with a silvery pile. The legs covered with a black pile; the four hinder calcaria white. Abdomen a little, but distinctly, longer than the head and thorax united; the apex of the first and second segments incised in the middle; the white marks on the second to the fourth segments become successively smaller, and there is a large oval white mark on the top of the apical segment; the ventral segments are pruinose, the apical ones sparsely covered with long black hair. The wings are short, not reaching to the apex of the fifth abdominal segment. They are dark fuscous; there is an elongate white cloud under the costa, shortly in front of the transverse basal nervure, a broad band going completely across in front of and enclosing the lower part of the first transverse cubital nervure, and the extreme apex is also hyaline, but not so white as the other two clouds; both the transverse cubital nervures are curved and approach each other at the top; the first recurrent

nervure is received at a slightly greater distance from the base than the second is from the apex of the cellule.

A very distinct species. It belongs to my first section of the genus, near *P. impudicus*, Cam.

Pompilus rinconensis, sp. n.

Long. 18 millim. ♀.

Hab. Rincon in Guerrero (*H. H. Smith*).

Agrees closely with *P. impudicus*, Cam., from Panama, but it is much larger; the pile on the thorax is not orange, the head only hairy at the top, and the hinder ocelli are separated by a greater distance from the eyes.

Black: the prothorax, the base of the mesonotum, and the third and fourth abdominal segments covered densely with orange pubescence; the top and sides of the median segment, the sides and apex of the basal abdominal, and the first to the fourth ventral segments, the sternum, and the legs, densely covered with a greyish pruinose pubescence. The wings smoky, with a cloud before the transverse basal nervure, one in front of it, and the apex milky hyaline.

Antennæ short, black; the apex of the scape, the second joint, and the base of the third rufous; the flagellum covered with a microscopic down. Head shining, impunctate; the vertex behind the ocelli densely covered with golden pubescence; the hinder ocelli separated by a much greater distance from the eyes than they are from each other. The black central part of the thorax has a slight violaceous tinge. The sternum, the sides of the pleuræ above it, and the metapleuræ densely covered with a greyish pile. The apex of the median segment black, slightly excavated, the sides with some stout transverse striations. The first and third transverse cubital nervures are roundly curved, the second straight and hardly oblique; the first recurrent nervure is received in the apical third, the second almost in the centre of the cellule.

A second specimen, from Iguala in Guerrero (*Höge*), no doubt belongs to the same species; it has the pile on the thorax and head deep orange, this being also the case with that on the fourth and fifth abdominal segments, the sides of the pleuræ entirely covered with a grey pubescence, and, apparently, the abdomen is a little longer compared to the length of the thorax; it is also smaller.

Pompilus idris, sp. n.

Long. 8 millim. ♀.

Hab. Mexico, Atoyac in Vera Cruz (*H. H. Smith*).

Black ; two large marks on the side of the second abdominal segment and the fourth and fifth entirely dull orange-yellow ; the wings smoky, the base, apex, and a cloud behind the stigma whitish hyaline.

Antennæ short, thick, covered with an obscure microscopic pile, the base and apex of the scape piceous beneath. The apical half of the mandibles piceous. Above the antennæ the head is densely covered with golden pubescence, barer in the middle, but this may be owing to it having been rubbed off. The eyes curved, slightly converging towards the bottom. The hinder ocelli are separated from each other by the same distance they are from the eyes. The yellow-golden pile on the mesonotum extends to the base of the scutellum ; in front the mesonotum is much barer, probably through being rubbed. The scutellum is covered with a dull brownish down. The median segment is clothed with a short pale golden pubescence, especially on the middle above ; behind, it is hollowed slightly and in the middle is not so thickly haired as on the sides. The pro- and metapleuræ are covered closely with a short, the mesopleuræ with a still shorter, pale golden pubescence. Abdomen shining, pruinose ; the marks on the second segment are at the base at the sides and extend to the middle ; the fourth and fifth segments are only orange-yellow above ; the base of the sixth segment is orange in the middle. The femora and tibiæ are densely pruinose, appearing greyish ; the tarsi are bare. The recurrent nervures curve towards each other above, the first having a broader curve ; the third transverse cubital nervure is obliterated entirely, but both the recurrent nervures are present, the first being received shortly before the middle of the cellule.

Near *P. pictus*, Kohl.

Fam. Mutillidæ.

SPHÆROPHTHALMA, Blake.

Sphærophthalma posticata, sp. n.

Long. 11 millim.

Hab. Mexico, Chilpancingo in Guerrero (*Höge*).

Allied to *S. pallene*, Cam., from Durango, but differing from it in having the black on the anterior part of the abdomen not continuous at the base, the black being triangularly narrowed in front and produced into a sharp point (instead of being incised) at the apex. The shape of the abdominal black mark is very like that of *S. toluca*, Blake, but that species differs from the present insect in many other respects.

Head a little narrower than the mesothorax, densely covered all over with long pale fulvous hair; black, below the eye largely rufous; the mandibles black, sparsely covered with pale hair. The thorax above broadly black, the black at the apex rounded. The median segment with an oblique slope; the pleuræ black, coarsely punctured, sparsely covered with long pale fulvous hair. The basal segment of the abdomen black, covered with long pale hair. The base of the second segment is black, with two pale orange marks, one on either side, the black band between them being broadly triangular in the middle; at the apex in the middle the black also projects a little; the apex of the second segment is broadly black at the side, the extreme apex in the middle being only narrowly banded with black; the third segment is broadly black at the sides. The ventral segments are covered densely with pale hair; the apices of the segments narrowly black. Legs black, densely covered with long white hairs.

Sphærophthalma latebalteata, sp. n.

Ochracea, abdominis basi medioque late nigro-balteatis; pedibus nigris, longe albo-pilosis.
Long. 12 millim.

Hab. Mexico, Cordova and Jalapa in Vera Cruz (*Höge*).

Head distinctly narrower than the mesothorax, densely covered with long fulvous hair; the part behind the head roundly narrowed; the mandibles black, slightly rufous towards the middle; the antennal tubercles rufous at the apex. The antennæ black; the scape bearing long silvery hair, the flagellum with an obscure pale down. The thorax obliquely narrowed from the middle; above thickly covered with reddish-fulvous hair; the apex oblique, bearing large round deep punctures, and sparsely covered with long whitish hairs; the mesopleuræ coarsely punctured, sparsely covered with long whitish hair. The base of the abdomen bears long whitish hairs; the second segment with pale fulvous hair, the base broadly black, the base of the fulvous part roundly incised; the third and fourth segments covered all over with pale fulvous hair; the pygidial area black, the base and sides bearing long pale fulvous hair, longitudinally striolated. The ventral segments black, fringed with long pale fulvous hair, their apical half strongly punctured, the rest finely transversely striolated. Legs covered with long pale hairs; the spines black.

Agrees closely with *S. connectens*, Cam., from Chihuahua, but larger and stouter, the abdomen more abruptly narrowed,

more broadly black at the base, and with a broad black band towards the apex, *S. connectens* having only the base black; the legs, too, are more strongly haired.

Sphærophthalma chiron, sp. n.

Long. 18–20 millim.

Hab. Mexico, Venta de Zopilote (*H. H. Smith*), Acapulco in Guerrero (*Höge*).

This species has the general coloration of *S. ariadne*, Blake, but it is much larger. From *S. Cressoni*, Blake, it may be known by the central black mark on the base of the abdomen being completely separated from the smaller lateral black marks. In general coloration it agrees, too, with *S. ravula*, Cam., but the head in that species is quite differently formed.

Head distinctly narrower than the thorax, covered with pale golden pubescence, except on the oral region; the mandibles black. Antennæ black; the flagellum covered with a pale pile. Thorax narrowed abruptly behind and rounded in front; black, a broad band of pale golden in the middle above; the mesopleuræ covered with short silvery pubescence. The petiole covered with pale hairs. The second abdominal segment fulvous in the centre; extending from the base to near the middle is a black mark, longer than broad, gradually and slightly dilated to the apex, which is rounded; the sides of the segment black to the apex, and in their centre is a large black mark, rounded at the base, the apex more oblique; the third and fourth dorsal segments black, the black being at the base slightly oblique from the centre; the penultimate segment black at the sides; the pygidium black. The third to the fifth ventral segments densely covered with pale silvery hair; the last segments black. Legs densely covered with silvery hair.

Sphærophthalma myrmiciformis, sp. n.

Pallide aurco-pilosa, antennis pedibusque nigris. ♀.

Long. fere 12 millim.

Hab. Panama, Bugaba (*Champion*).

This species bears a great resemblance to the not uncommon Central-American ant *Camponotus sericeiventris*, amongst specimens of which it was placed in the box when received by me; but I know not if they are found together in nature.

The entire body covered with a silky depressed pale golden pubescence, shining; the head rather closely covered with

moderately long black hairs, the thorax and abdomen with longer and more sparsely distributed hairs. Antennæ black, thick; the scape covered with long black hairs, the flagellum with a microscopic down. Head large, wider than the thorax, developed behind the eyes to rather more than twice the length of the eyes; the mandibles sericeous and bearing some long black hairs. There is a black transverse band on the base of the mesonotum, one down the centre of the median segment and a narrower one down each of its sides. Abdomen not much longer than the thorax; its petiole short, obliquely raised from the bottom to the top. The ventral segments clothed, like the dorsal, with pale golden pubescence. Legs entirely black, sparsely clothed with longish black hairs.

S. myrmiciformis belongs to the group of *S. ocyroe*.

XXXV.—*A Contribution to the Osteology of the Mesozoic Amioid Fishes Caturus and Osteorachis.* By A. SMITH WOODWARD, F.L.S.

[Concluded from p. 297.]

II.—*OSTEORACHIS LEEDSI*, SP. N., FROM THE OXFORD CLAY OF PETERBOROUGH.

The unique specimen of *Osteorachis* in the Leeds Collection (Brit. Mus. no. P. 8388) comprises the hinder portion of the skull, fragments of the jaws, opercular apparatus, and pectoral arch, and part of the vertebral column, all undoubtedly belonging to one and the same individual. It is of interest not only on account of its gigantic size, but also as being the first known example of the genus of Upper Jurassic age. As its teeth are relatively larger and stouter than those of the typical species (*O. macrocephalus*) from the Lower Lias, while their enamelled apex seems to be shorter, the species it represents is evidently new, and may be named *O. Leedsi*, in honour of its discoverer. In the anterior half of the dentary in the Oxfordian fossil the length occupied by the bases of three consecutive teeth at least equals, and usually exceeds, the depth of the bone bearing them; whereas in *O. macrocephalus* the corresponding length is always less than the depth of the bone.

The following are some of the principal measurements obtainable:—