

NOTES ON SAWFLIES, WITH DESCRIPTIONS OF NEW GENERA AND SPECIES.

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The types of most of the new species here described are in the collection of the United States National Museum. A few, however, are in the collections of other institutions which have forwarded the material to the author at his request and on the condition that the types be returned to them.

Suborder IDIOGASTRA.

STIROCORSIA KOHLI Konow.

A single male collected at Sandakan, Borneo, by C. F. Baker agrees fairly well with the description of the female given by Konow and is, I believe, the male of his species.

Length, 8 mm. Anterior trochanters and hind tibiae dark piceous; ventral sternite produced into a rather narrow truncate process apically, the ventral surface with six tubercules arranged so as to form a semicircle.

Suborder CHALASTOGASTRA.

Family XIPHYDRIIDAE.

XIPHYDRIA ABDOMINALIS Say.

Xiphydria abdominalis SAY, Keating's Narr. Exped. appendix, vol. 2, 1824, p. 311; LeConte's Writings of Say, vol. 2, 1859, p. 208.

In my synopsis of the Nearctic species of *Xiphydria*¹ I considered this species to be the same as *attenuata* Norton and *rufiventris* Cresson, and made a specimen from Harrisburg, Pennsylvania, a neotype for Say's species. A single female specimen collected at Charter Oak, Pennsylvania, June 19, 1918, by H. B. Kirk, proves that this interpretation for the species is incorrect and that the specimen chosen as a neotype can not justly be considered as such.

¹ Ent. News, vol. 29, 1918, pp. 105-111.

The specimen collected by Kirk agrees in all ways with Say's description and can be separated from *attenuata* by the following key:

Wings uniformly brownish; legs entirely black.....*abdominalis* Say.
 Wings hyaline to subhyaline; trochanters, bases of tibiae and tarsi more or less, whitish.....*attenuata* Norton.

XIPHYDRIA ATTENUATA Norton

Xiphydria attenuatus NORTON, Proc. Ent. Soc. Phila., vol. 1, 1862, p. 144.

Xiphydria rufiventris CRESSON, Trans. Amer. Ent. Soc., vol. 3, 1880, p. 34.

Xiphydria abdominalis ROHWER (not Say), Ent. News, vol. 29, 1918, p. 107.

Additional material proves that this is not, as the writer had previously considered, a synonym of *abdominalis* Say. (See above discussion under *abdominalis*.)

XIPHYDRIA CHAMPLAINI, new species.

Female.—In color this species suggests *erythrogastra* Ashmead and *abdominalis* Say, but may be distinguished from both these species by its larger size, yellow spots on abdomen, more sculpturing on the head, and the sharply constricted hind tibiae. Ignoring the color of the abdomen, it will run to *tibialis* Say, but the head is not as coarsely sculptured, the hind tibiae are longer and sharply constricted basally.

Length, 14 mm. Anterior margin of clypeus with a median tooth; head below lateral ocelli irregularly reticulate; front above the antennae with two oblique low ridges forming a broad V; area immediately behind a line tangent to lateral ocelli reticulato-granular; vertex polished with a few poorly defined punctures; ocellular line distinctly longer than the postocellar line; cheeks and posterior orbits, nearly to the top of eye, with dorsal-ventrad aciculations; orbital carina distinct, extending well above the top of eye; antenna 19-jointed, strongly tapering, not extending much beyond tegulae, second joint half as long as third and equal in length with fourth; prescutum broad, the anterior width subequal with the length, rounded posteriorly so the caudad width is half the cephalad width, with a distinct median longitudinal groove, the surface coarsely reticulate and anteriorly, with a tendency to form a transverse ridge; notauli broad, foveolate; scutum reticulate, with the usual granular areas laterally; suture between scutum and scutellum deep, foveolate; scutellum reticulate, the posterior lateral areas more finely so; mesepisternum coarsely reticulate, with a tendency to striation below; prepectus polished; mesosternum shining, with separate punctures; mesepimeron rugose; metapleura coarsely reticulate; propodeum shining, with separate punctures, the oblique depressions foveolate; transverse depression at base of second (first gastral) tergite reticulate; apical part of second tergite and all of the following (becoming finer apically) granular; posterior tibia one-third longer than their tarsus, constricted basally (more sharply dorsally), compressed and with a

longitudinal furrow on outer surface; sheath straight above, nearly truncate apically, rounding to rather narrow base. Black, with yellow markings and a red abdomen; head yellow, antennae, apices of mandibles, band from bases of antennae (where it is tridentate and broader) to occiput, where it meets two oblique lines from top of eye, and the posterior face black; thorax black, prosternum, anterior and posterior angles of pronotum, tegulae, a spot above, spot on prescutum, two spots of scutum in front of scutellum, spot on mesepisternum and two spots on mesosternum yellow; legs yellow, bases of coxae, the femora and apices of hind tibiae black; abdomen rufous, propodum, base of second tergite and the sheath black, sides of second, third, fourth, fifth, eighth, and a small spot on ninth tergites yellow; wings hyaline, venation, except reddish costa, black.

Male.—Because of the shape of the prescutum the male would fall in with *abdominalis*, but it is larger than that species; the legs are stouter and the head immediately above the antennae more coarsely sculptured.

Length, 10 mm. The structure and markings of female except where noted. Antenna 15-jointed, second joint a little more than half as long as third and somewhat shorter than the fourth, the two basal joints reddish; postocellar line subequal with the ocellular line; black of the head more extensive; upper part of mesepisternum spots on metapleura and propodeum yellowish; legs rufous, coxae except black bases yellowish; eighth and ninth tergites without yellow; hypopygidium with an arcuate, median emargination; sternites five to eight, with black hair; tibia not as constricted as in female or as strongly compressed.

Paratype a has the black of the head greatly reduced, the entire venter and sides of thorax, sternites and margins of tergites and legs yellow. *Paratype b* has the antenna 16-jointed and mostly pale, the yellow thorax, legs and abdomen of *paratype a* and has the head, except posteriorly and a spot around the ocelli, yellow. The yellow on the mesonotum is more extensive than in any other specimen.

Since preparing the above more material has been received which indicates that *paratype a* is the typical color for the male. There is very little variation in the female.

Type locality.—Harrisburg, Pennsylvania.

Described from three females (one type) and twelve males (one allotype) reared May 26, 1919, from wood of *Carpinus caroliniana*. Material collected and reared by A. B. Champlain, for whom the species is named.

Type, allotype, and paratypes.—Cat. No. 22365 U.S.N.M. Paratypes (female and male) returned to Bureau of Plant Industry, Harrisburg, Pennsylvania.

XIPHYDRIA HERITIERAE, new species.

In the rufous head and general color the female recalls *X. ruficeps* Moscardy, but it does not answer the description in all ways, being distinguished by the more joints to the antenna, the pale base of the wings, and different color of the legs. The male would go to *rufipes* Smith in Konow's key, but the sculpture, especially that of the abdomen, is quite different from that species.

Female.—Length, 16.5 mm. Anterior margin of the median part of clypeus with a low, rounded median tooth, laterally the clypeus has a rounded lobe-like tubercle; sides of face depressed (except at eye margin) and finely granular; area between bases of antennae convex, irregularly reticulate; frons to height of lateral ocelli striato-reticulate; middle fovea shallow with sloping walls; ocelli in a low triangle well below the supraorbital line; postocellar and ocellular lines subequal; cheeks, temples, and head behind the ocelli smooth polished; antennae 17-jointed, scape strongly curved, flattened on the lateral surface, pedicellum subequal in length with the first joint of flagellum, more than half as long as the scape, curved and somewhat compressed laterally; flagellum hairy, very strongly tapering, the first joint distinctly longer than fourth, the joints decreasing in length toward apex, basal part of flagellum thicker than scape or pedicellum; prescutum and scutum coarsely reticulate; notauli well defined, more or less distinctly foveolate; axillae mostly granular; scutellum shining and with distinct, large, separated punctures; mesepisternum closely punctato-striate; mesepimeron with strong oblique striae; propodeum and base of second tergite shining and with distinct punctures which are closest medianly; apical part of second tergite, all of the next five, and basal part of eight opaque, closely punctured; apical part of eight and entire ninth tergite shining, and with scattered irregular, setigerous punctures; ninth tergite elongate, but rounded apically; sheath rather short, strongly tapering apically; third cubital but little shorter than the second, receiving both interradius and second recurrent close to base; nervulus at basal fifth. Black, with bluish reflection in bright sunlight; head and first two joints of antenna rufous; two spots on dorsal median part, and a spot on posterior ventral angle of pronotum, a small circular spot on side of second tergite, apical margin of eight tergite, lateral spot on apex of ninth tergite yellowish-white; legs black; anterior tibiae reddish; basal half of hind tibiae, hind basitarsus and extreme base of intermediate tibiae yellowish-white; wings hyaline, beyond the basal vein brownish; venation black.

Paratypes exhibit the following variations: Length, 12–20 mm.; ventral and posterior (lateral) margins of pronotum yellowish.

Male.—Length, 12 mm. Antennae 18-jointed, base of flagellum not so distinctly broader than the scape and pedicellum as in female;

hypopygium rounded apically; otherwise structure as in female. Black, with bluish reflection in bright sunlight; scape piceous; a small spot on temples above and ventral margin of pronotum yellowish; legs below trochanters rufo-ferruginous; wings uniformly hyaline, iridescent; venation dark brown.

Paratypes show the following variation: Length, 10-12.5 mm.; propodeum with a dorsal yellow spot on anterior margin.

Type locality.—Sunderbans, Bengal, British India.

Described from seven females (one type) and six males (one allotype) reared from "Sundri" (*Heritiera fomes* Buch (= *minor*)) by C. F. C. Beeson.

Type, allotype, and paratypes.—Cat. No. 22588 U.S.N.M. Paratype females and males returned to office of forest zoologist, Dehra Dun, India.

XIPHYDRIA HERITIERAE, subspecies BORNEENSIS, new subspecies.

Female.—Length, 15 mm. Differs from the typical form in having the upper margin of mesepisternum smooth and polished, in nervulus being interstitial with basal and in the second and ninth tergites being entirely black.

Type locality.—Sandakan, Borneo.

Described from one female collected by C. F. Baker.

Type.—Cat. No. 22589 U.S.N.M.

XIPHYDRIA FLAVICORNIS, new species.

This species is, judging from the descriptions, closely allied to *testacea* Moscardi, but there are slight difference in color, and the male is larger.

Female.—Length, 12 mm. Clypeus projecting over the bases of mandibles, laterally with oblique striae, medianly with a sharp triangularly shaped tooth; face with irregular dorsad-ventrad raised lines, frons rather coarsely reticulate, area between postocellar line and supraorbital line with irregular striae which become weaker dorsally; vertex and temples polished, without sculpture; lower cheeks with oblique striae; the occipital carina ending about opposite the middle of eye; ocelli in a low triangle well below the supraorbital line; postocellar line subequal with the ocellocular line; antenna 15-jointed not extending beyond tegula, slender and tapering from the second joint; second antennal joint two-thirds as long as the third and somewhat longer than the fourth, which is subequal with the fifth; prescutum truncate posteriorly, the anterior width subequal with the median length; notauli broad, shallow, foveolate; prescutum, scutum, and scutellum (anteriorly) reticulate; posterior part of scutellum opaque, granular, and with some irregular raised lines; anterior face of pronotum with dorsad-ventrad rugae; mesepisternum with irregular depressed areas which dorsally look like large, shallow punctures; mesosternum shining almost without

sculptured; abdomen obtuse apically, the tergites dull, granular; sheath short, broad, rounded apically; hind basitarsus subequal in length with hind femur; hind tibiae subequal in length with hind tarsi and about twice as long as hind femora; venation normal. Black; basal two joints of antenna brownish, rest of antenna yellowish; base on mandibles, a spot above each antenna, inner margins of eyes (broader above), cheeks, temples, and posterior part of vertex yellow; upper angles of pronotum, three spots on scutellum, metanotum entirely, and upper part of mesepisternum yellow; basal four segments of abdomen, except inner margin of propodeal plates and median apical margins of tergites, which are brownish, ferruginous, apical part of abdomen black, the seventh and eighth tergites laterally and the apical one medianly *yellow*; legs ferruginous, with bases of tibiae and tarsi whitish; wings uniformly hyaline, venation dark brown.

Male.—Length, 8 mm. Sculpture and structural details as in female; antennae 14-jointed, with relationship of basal joints as in female; preultimate sternite with a bunch of long bristles near middle of apical margin; apical sternite broadly rounded posteriorly. Pale ferruginous, broad line on middle of face, margins of thorax dorsally and tergites medianly brownish; basal two joints of antennae pale brownish, the remaining joints whitish; wings hyaline, venation pale brown.

Type locality.—Sandakan, Borneo.

Described from one female (type) and one male (allotype) collected by C. F. Baker.

Type.—Cat. No. 22379 U.S.N.M.

XIPHYDRIA PYRURA, new species.

The dark wings, black body with the red terminal segments should make it easy to pick out this species.

Male.—Length, 16 mm. Clypeus not extending over base of mandibles, its lateral surfaces shining, medianly with a sharp tooth; face and frons below ocelli with strong raised lines which medianly form dorsad-ventrad striations; area below anterior ocellus shining and sparsely punctured, somewhat depressed so there is a broad shallow middle fovea; area around ocelli, vertex, and temples polished, without sculpture; cheeks with a few strong striae; occipital carina strong, extending dorsally to a line drawn tangent to inner margin of eyes; ocelli in a low triangle, a short distance below supraorbital line; postocellar line distinctly longer than ocellocular; antennae short, 14-jointed, slightly thickened medianly, tapering apically, second joint half as long as the third and a little shorter than the fourth; anterior and lateral faces of pronotum shining, with strong rugae in the depressions; prescutum subgibbous, its anterior surface punctured; prescutum almost V-shaped, its anterior width slightly

greater than the median length; prescutum, scutum, and base of scutellum coarsely reticulate, the posterior part of scutellum finely reticulate; mesepisternum strongly ridged posteriorly, anteriorly coarsely reticulate, behind the ridge shining but with rugae in the depression; basal five tergites punctured (the basal ones more strongly so) the remaining tergites smooth; apical tergite long; hind basitarsus longer than the three following joints, slightly shorter than the hind femur; hind tarsi distinctly longer than the hind tibiae; venation normal. Black; tibiae and tarsi dark brownish black; apical two abdominal segments rufous; wings violaceous, venation black.

The paratype is about 13 mm. long and has the tibiae and tarsi reddish piecous.

Type locality.—Mount Makiling, Luzon, Philippine Islands.

One male collected by C. F. Baker. Also one male, collected March to June, 1911, by C. V. Piper, at Lamao, Luzon, Philippine Islands.

Type.—Cat. No. 22380 U.S.N.M.

FAMILY ARGIDAE.

ARGE ANNULITARSIS, new species.

In general color and markings of legs suggests *Arge rosae* (Linnaeus), but the wings are not yellowish and the scutum and prescutum are pale.

Female.—Length, 7 mm. Anterior margin of clypeus shallowly, arcuately emarginate; supraclypeal foveae connected with antennal foveae, elongate and deeper than antennal foveae; supraclypeal area strongly convex, but not carinated; middle fovea elongate, closed below, extending dorsad half the distance between bases of antennae and anterior ocellus, open above; antennal furrows dorsally, vertical and postocellar furrows obsolete; postocellar line distinctly shorter than ocellular line; antenna clavate, flagellum carinate beneath; stigma rounded below; third cubital longer on radius, shorter on cubitus than second cubital; second recurrent about half the length of second intercubitus from base of third cubital; basal joining subcosta about the length of intercosta before origin of cubitus; nervulus slightly beyond the middle of cell; legs normal. Ferruginous; head, antennae, mesosternum, most of scutellum, metanotum, and apex of sheath black; legs ferruginous, apices of tibiae and tarsal joints black; spines yellowish; hair color of body; wings dusky hyaline; venation black.

Type locality.—Murree, 7,500 feet (about 2,272 meters), British India.

Described from one female collected August, 1917, by Dutt and forwarded by Imperial Entomologist of British India.

Type.—Cat. No. 22511 U.S.N.M.

ARGE DENTIPES, new species.

Much larger than *victoria* Kirby, which it resembles somewhat in color.

Female.—Length, 14 mm. Labrum broad, short, sparsely punctured, the apical margin truncate; clypeus nearly flat, broadly, shallowly, arcuately emarginate, the lateral angles rather sharp, surface with distinct, rather close punctures; supraclypeal foveae deep, elongate, oval, not connected with antennal fovea; antennal furrows complete, broad; middle fovea sharply defined by ridges laterally, open below, above with an oval-shaped depression; ocellar depression rather small, but well defined; vertical furrows poorly defined and present only anteriorly; postocellar furrow rather poorly defined, curved; postocellar line slightly longer than ocellular line; face and front with distinct small punctures, closer on front; vertex and cheeks shining almost impunctate; antenna distinctly thickening apically; thorax and abdomen shining; third intercubitus with two curves; recurrent veins parallel, the second half the length of second intercubitus beyond it; nervulus distinctly before middle of cell; four anterior femora with a tooth above at about the apical third; posterior femora slender basally, suddenly enlarged dorsally at about the middle; hind tibiae somewhat compressed apically. Head and thorax deep metallic blue; abdomen beyond the propodeum rufoferruginous with sheath and median spots on first eight tergites metallic blue; legs metallic blue; antennae black; wings dark brown with a violaceous tinge; venation black; head, thorax, and legs with short white hair.

Type locality.—Lashio, Burma.

Described from one female collected at an altitude of 3,000 feet (about 909 meters), August, 1914, by Fletcher and forwarded by the Imperial Entomologist of India.

Type.—Cat. No. 22506 U.S.N.M.

The unusual femora and central spots on the abdomen should make it easy to recognize this species. It is difficult to tell how much reliance should be placed on the tubercles on the four anterior femora, as the anterior one on the left side is almost normal. The sudden swelling of the posterior femora will, however, probably be constant.

Genus CIBDELA Konow.

As far as known the species belonging to this genus are confined to the oriental and the adjacent parts of the Palaearctic regions. All of the known species are entirely metallic bluish or bluish green and have the wings more or less dark. The species examined are closely allied and while they can be distinguished comparatively easily by comparison they are difficult to tabulate. The following key may be of service in distinguishing the forms here treated. The only species

which is omitted is *scita* Konow. Specimens of a species which agrees with Konow's description of *scita* and were determined as that by Enslin are at hand but they belong to the genus *Arge*. Whether *scita* was wrongly placed by Konow or not can not be determined from the information at hand, and a comparison of the type will probably be necessary. The following tabulation is based on females.

KEY TO CERTAIN SPECIES.

1. Postocellar and ocellocular lines subequal.....2
Postocellar line distinctly longer than ocellocular line.....3
2. Basal part of wings clear; a distinct dark brown spot below stigma, and apex of wings faintly brownish.....*maculipennis* (Cameron).
Basal part of wings brownish; no distinct cloud below stigma, although this area is somewhat darker.....*chinensis*, new species.
3. Wings uniformly dark brown.....*melanoptera*, new species.
Wings with at least basal and median cells subhyaline.....4
4. Body purplish; ridges of middle fovea very prominent, especially opposite antennae; eyes distinctly reniform, converging below.....*poecilotricha* (Konow).
Body greenish-blue; ridges of middle fovea less strong; eyes hardly reniform or converging below.....*janthina* (Klug).

CIBDELA MACULIPENNIS (Cameron).

Konow considered this to be synonymous with *janthina* (Klug), but later Enslin expressed the opinion that was a good variety. If the determination for the material before me is correct, I believe *maculipennis* to be a distinct species.

CIBDELA CHINENSIS, new species.

In general appearance more like *poecilotricha* (Konow), but easily distinguished from that species by having the postocellar and ocellocular lines subequal; on this character it falls next to *maculipennis* (Cameron), but differs from that species by the darker wings.

Female.—Length, 9.75 mm.; length of anterior wing, 9.75 mm. Anterior margin of labrum depressed, truncate; anterior margin of clypeus not depressed, gently, arcuately emarginate; supraclypeal foveae deep, short oval; lateral walls of middle fovea slightly constricted above antennal foveae, not extending below antennal foveae; inner margins of eyes only slightly converging below; postocellar and ocellocular lines subequal; postocellar furrow complete, not sharply defined; postocellar area parted by a median, impressed line; third cubital cell shorter, on both radius and cubitus, than the second; stigma broadest at base tapering to apex. Metallic with distinct purplish tinge; with the usual whitish pubescence; anterior wings pale brown with the area below the stigma darker; posterior wings subhyaline; venation blackish.

In the paratype the antennal furrows above the supraclypeal fovea are deep, and the second and third cubital cells are nearer the same length.

Type locality.—Hongkong, China.

One female collected, 1911, by F. W. Terry. Also one female paratype collected by H. R. Caldwell at Foochow, China.

Type.—In the British Museum of Natural History.

Paratype.—Cat. No. 22357 U.S.N.M.

CIBDELA MELANOPTERA, new species.

In size and appearance more like *poecilotracha* (Konow), but the darker wings will readily distinguish it from that species.

Female.—Length, 10 mm.; length of anterior wing, 11 mm. Anterior margin of labrum depressed, slightly emarginate; clypeus flat, the anterior margin distinctly arcuately emarginate; supraclypeal fovea deep, elongate oval; walls of middle fovea parallel, prominent, especially opposite antennae, extending somewhat below ventral margin of antennal foveae; eyes reniform, slightly converging below; postocellar line distinctly longer than ocellular line; postocellar area feebly defined laterally, not parted; postocellar furrow distinct, angular anteriorly; stigma below nearly straight for half its length then distinctly tapering; second and third cubital cells subequal or radius. Metallic with a distinct purplish tinge; pubescence on top of head and thorax blackish, the rest whitish; wings (anterior and posterior) uniformly brownish; venation blackish.

The paratype has the basal part of the hind wings paler.

Type locality.—Iligan, Mindanao.

One female from C. F. Baker. Also one female paratype from Mount Merinjak, altitude 2,200 feet (about 66 meters), May 29, 1914.

Type.—Cat. No. 22358 U.S.N.M.

Paratype.—In the British Museum of Natural History.

CIBDELA POECILOTRICHA (Konow).

Syn. *Cibdela pruniosa* (CAMERON).

The specimens determined as this species agree well with Cameron's description of *pruniosa*, and there seems to be but little doubt that they are his species. They also agree with Konow's description of *poecilotracha*, but this description does not include sufficient characters to enable one to feel sure of the correctness of the identification. Konow has, however, synonymized *pruniosa* with *poecilotracha*, so I have used his name and accepted the synonymy.

Family TENTHREDINIDAE.

Subfamily DIPRIONINAE.

NEODIPRION (NEODIPRION) EXIMINA, new species.

This species is closely allied to *abbotii* Leach, but is readily separated by the black tergum and scutum.

Female.—Length, 6.5 mm. Clypeus gently convex basally, without sculpture, apical margin narrowly depressed and broadly, arcuately emarginate; supraclypeal foveae unusually prominent;

middle fovea deep, elongate, with sloping walls, not extending to the anterior ocellus; head subopaque; front and face with close punctures; vertex with the punctures slightly more separated than those on the front; posterior orbits with widely scattered punctures; postocellar area sharply defined, not arched, twice as wide as the median length; antennae 19-jointed; the median rami subequal in length with the length of the joints; and nearly uniform in width; third joint distinctly longer on the dorsal margin than the fourth; prescutum and scutum with close, well-defined punctures; scutellum wider than long, obtusely angled posteriorly, the surface with uniform well-defined punctures; mesepisternum with the punctures so close as to appear granular; tergites shining, highly polished; nates shining, when highly magnified the surface is reticulate and there are scattered, setigerous punctures; sheath when seen from below truncate apically, the pad-like plates three times as long as wide and well removed from the median ridge; last sternite with a broad, shallow, median emargination; tarsal claws with a small erect tooth at the middle; hind tarsi rather short; the basitarsis only a trifle longer than its apical width; the longer calcarium of the posterior tibiae only a trifle shorter than the hind basitarsus. Black; head ferruginous except the antennal furrows to the ocelli and a band between the ocelli which are black; pronotum, scutellum, the upper part of the mesepisternum, sides of the tergites, whitish; sternites medianly and nates ferruginous; legs rufo-ferruginous with apices of the anterior femora and the bases of all the tibiae and the base of the hind basitarsi whitish; wings hyaline, venation dark brown, stigma clear in the middle.

Type locality.—Tomahawk Lake, Wisconsin.

Described from one female reared from larvae collected on *Pinus resinosa* by S. A. Rohwer and recorded under Bureau of Entomology, No. Hopk. U. S. 10170.

Type.—Cat. No. 21775, U.S.N.M.

NEODIPRION (NEODIPRION) EXCITANS, new species.

Allied to *pinus-rigidae* (Norton), but may be distinguished in the female by the longer rami on the antennae, the more sparsely punctured head and mesepisternum, serrate upper apical margin of lance, teeth on basal rib of lancet, and only having thirteen teeth (the medium ones being larger) on seventh (from apex) rib of lancet.

Female.—Length, 8 mm. Anterior margin clypeus depressed, broadly arcuately emarginate; head shining with distinct separate punctures; middle fovea broad shallow; postocellar line distinctly longer than ocellular line; median cephalo-caudad length of postocellar area fully half as great as the anterior width of postocellar area; postocellar area very slightly convex; antennae 16-jointed, third joint distinctly longer than the fourth, fourth, fifth and sixth

subequal dorsally, rami longer than half the dorsal length of joint; prescutum and scutum shining, with small, distinct separate punctures; scutellum shining, rounded posteriorly, angulate anteriorly, with large well-separated punctures which are closer posteriorly; mesepisternum with separate large punctures on a shining surface; abdomen smooth shining; pad-like brush of sheath very narrow, remote from middle, the distance between brushes greater than their length so the sheath is broadly truncate when seen from below; lance serrate on dorsal apical margin; lancet with nine rows of teeth, the seventh from end armed with thirteen teeth, the medium ones being larger. Ferruginous and brown; head ferruginous, antennae, antennal furrows and postocellar furrow brownish-black; thorax dorsally brownish with lateral margins of prescutum and the scutellum sordid whitish; mesosternum and episternum below brownish; pronotum, upper part of mesipisternum, metapleura, sides of abdomen sordid whitish; tergum brownish; nates and eight sternite rufous; sternites brownish-ferruginous; wings hyaline, viterous; venation black, middle of stigma pale.

Male.—Length, 5 mm. Head shining, with well-separated punctures which are closer near the mouth; postocellar area convex its median length about one-third its anterior width; antenna 16-jointed, short the basal ramulus nearly as long as flagellum; prescutum and scutum shining, with separate small punctures; scutellum with large separate punctures; mesepisternum shining with separate punctures which are somewhat larger and closer dorsally; tergites shining; hypopygidium short broadly rounded apically. Black; apical part of clypeus, labrum, palpi, legs below bases of coxae, and apical sternite rufo-ferruginous; wings viterous hyaline; venation brown.

Some of the paratype males have most of the sternites rufo-ferruginous but they were probably killed before they matured.

Type locality.—Montgomery County, Texas.

Described from eight (one type) females reared from cocoons sent in by G. M. Del Curte, assistant entomologist of Texas, and recorded under Bureau of Entomology No. Hopk. U. S. 10779e; and from two females and eleven (one allotype) males sent in by G. M. Del Curte, assistant State entomologist of Texas, as coming from eastern Texas.

Type.—Cat. No. 22389 U.S.N.M.

Subfamily ALLANTINAE.

TAXONUS ATTENATUS, new species.

Apparently allied to *Allomorpha pulchripes* Cameron, but can easily be distinguished by color and different antennae. In the relation of the antennal joints it is more like *Allomorpha incisa* Cameron, but that species has the head marked with yellow.

Female.—Length, 9.5 mm.; length of anterior wing, 7 mm.; length of antennae, 5 mm. Labrum smooth, polished, the apical margin obtusely angled; clypeus coarsely punctured, the anterior margin deeply subsquarely emarginate, lobes rather narrow, rounded apically; supraclypeal area gently convex, nearly quadrate in outline; middle fovea rather large, quadrate in outline but connected with a depression from the anterior ocellus; antennal furrows complete; postocellar line not quite half as long as the ocellocular line; postocellar furrow wanting; postocellar area flat, slightly longer than broad; head polished; flagellum very slightly thicker apically, the first joint somewhat longer than the second which is subequal with the third, fourth and seventh joints subequal in length and longer than the fifth and sixth which are subequal; scutum and prescutum polished; scutellum shining but coriaceous, posteriorly with some rather large punctures; upper part of mesepisternum (except just beneath wing) with large punctures; lower part of mesepisternum and the sternum shining, polished; abdomen shining; sheath rather narrow, straight above, rounded from upper apex; posterior basitarsis subequal in length with the following joints; stigma rounded below; interradius curved, joining the radius a short distance beyond middle of third cubital; third intercubitus twice as long as the second, which is oblique; recurrents joining the cubitus about the length of second interradius from the base of cells; nervulus practically at middle of cell; black; labrum, palpi, apical three joints of antennae, and apical joints of hind tarsi whitish; femora dark rufous, tibiae and tarsi more ferruginous; wings hyaline; venation dark brown, base of stigma pale.

Type locality.—Soochow, China.

Described from a single female collected by N. Gist Gee.

Type.—Cat. No. 22609 U.S.N.M.

TAXONUS FLETCHERI, new species.

Judging from the description this species is apparently allied to *Allomorpha pulchripes* Cameron, but the following differences are to be noted: Prescutum entirely black, mesopleurae black, supraclypeal area yellow, color of abdomen somewhat different.

Female.—Length, 9 mm.; length of anterior wing, 8.5 mm.; length of antenna, 10 mm. Labrum polished, the anterior margin broadly rounded; clypeus coarsely, irregularly punctured, the anterior margin deeply, squarely emarginate, lobes rather broad rounded apically; supraclypeal area gently convex, smooth, triangular in outline; depression in front of the anterior ocellus deep, with sloping walls, extending to near bases of antennae, U-shaped in outline; antennal furrows well defined, complete; postocellar line not much more than half as long as ocellocular line; postocellar furrow well defined, angulate anteriorly and with a short furrow extending to the anterior

ocellus; postocellar area convex, well defined; its length and width subequal; inner margins of eyes subparallel, the distance between them at the antennae distinctly more than the length of an eye; malar space nearly as long as the apical width of pedicellum; antennae long, filiform, third, fourth, and fifth joints subequal, the remaining shorter and each joint shorter than the preceding; mesonotum, shining, almost impunctate; scutellum flat; mesepisternum above coarsely reticulato-granular; lower part of mesepisternum and the entire sternum polished; abdomen polished; sheath straight above obliquely truncate apically then gradually widening to base; hind basitarsus subequal in length with the following joints: claws cleft, the inner tooth larger; wings slender, the hind unusually narrowed apically; interradius curved, joining the radius a short distance beyond the middle of the third cubital cell; recurrent veins join cubitus near base of cells; nervulus its length beyond basal; no discal cells in hind wing. Black; base of mandibles, labrum, clypeus, palpi, supra-clypeal area, spot on scutellum, hind coxae above, sides of first, second, third, fourth, and the entire terminal tergite, and hind tarsi except basal two-thirds of first joint, whitish; posterior margin of pronotum, tegulae, spot on side of pronotum, apical margins of second and third tergites, four anterior legs (except coxae beneath), hind legs (including coxae beneath) rufo-piceous or rufous; antennae brownish, joints five and six blackish, seven and following whitish; wings hyaline, venation dark brown, base of stigma yellowish.

In the paratypes the apical margins of tergites two and three are broadly testaceous.

Type locality.—Shillong, 5,000 feet (about 1,515 meters), British India.

Described from three females (one type) collected in June and July, 1918, by T. B. Fletcher, for whom the species is named.

Type.—Cat. No. 22608 U.S.N.M.

Paratype returned to office of Imperial Entomologist, Pusa, India.

Subfamily TENTHREDININAE.

Genus BELDONEA Cameron.

Konow considered that *Beldonea* Cameron was synonymous with *Macrophya* Dahlbom, but after a study of the genotype of Cameron's genus it seems to the writer that it should be considered as belonging to a distinct group. In Konow's generic synopsis,² the genotype of *Beldonea* runs to *Perineura* Hartig, but may be distinguished from members of that genus by absence of the malar space, position of propodeal spiracle, etc. *Beldonea* may be separated from *Macrophya* by having both tibial spurs of anterior tibiae simple, by the smaller

² *Genera insect*, fasc., 29, 1905, p. 118.

metaepimeron and malar space, etc. It is probably more closely allied to *Sciapteryx* Stethens, but may be distinguished from that genus by the short malar space, the simple anterior calcaria. The following characters are given to supplement the original description.

Belongs to Tenthredinini; slender; inner margins of eyes nearly parallel and at the level of the antennae separated by a distance greater than the length of eye; clypeus emarginate; malar space line like; head and thorax more or less coarsely punctured; third antennal joint longer than fourth; occiput not carinate; both calcarium of anterior tibiae simple; claws cleft; hind basitarsis subequal in length with the following joints; hind coxae of normal size; metepimeron not especially large; propodeum divided; two discal cells in hind wing; anellan cell petiolate.

BELDONEA LUBENS (Konow).

Macrophya lubens KONOW, Ent. Nachr., vol. 24, 1898, p. 88.

Beldonea rugifrons, CAMERON, Mem. Proc. Manchester Soc., vol. 43, no. 3, 1899, p. 36.

A single female of this species was collected at Shillong, 5,000 feet (about 1,515 meters), India, June or July, 1918, by T. B. Fletcher.

JERMAKIA DENTISTERNA, new species.

There is much about this species which recalls *Diptermorpha rotundiventris* (Cameron), and it may possibly be the female of that species, but it does not answer the description entirely, and it seems best to place it in *Jermakia* where it would run in Konow. The description of *Diptermorpha* and even my manuscript notes do not include enough information to satisfactorily place the genus. The species here described differs from the published description of *Diptermorpha rotundiventris* in the black thorax (perhaps secondary sexual), uniformly colored wings, and other minor color characters. It also differs in the position of the nervulus as figured by Kirby.

Female.—Length, 15.5 mm.; length of anterior wing, 16 mm.; length of antenna, 8 mm. Entire head shining, polished; anterior margin of labrum broadly rounded; anterior margin of clypeus broadly, arcuately emarginate, the lateral angles sharp; supraclypeal suture obsolete; middle fovea deep, rectangular in outline; ocellar depression cordate in outline but not sharply defined below; antenna; furrows complete; postocellar furrow wanting; postocellar line less than half as long as ocellular; antennae long, filiform the third joint slightly longer than fourth, the following decreasing in length; pronotum, prescutum, scutum, and anterior part of scutellum polished; prescutum subgibbous, with a deep median furrow; scutellum pyramidal, the posterior part punctured; mesepisternum polished but also with large, distinct, separated punctures, the anterior margin

sharply truncate, this truncation continues to the posterior ventral margin, and leaves a shelflike depression to the sternum which is prominent and armed with two teeth posteriorly; abdomen polished, cylindrical, longer than head and thorax; propodeal spiracle at about the middle of the lateral margin; sheath straight above, obliquely truncate apically, convex below; wings long and slender; interradius curved at almost a right angle and joining the radius slightly beyond the middle of the third cubital cell; third cubital longer on both radius and cubitus than the first and second combined, receiving the second recurrent a little beyond basal fourth; first recurrent at about the middle of second cubital; first discoidal cell elongate, the first recurrent shorter than the basal; nervulus half its length beyond basal. Black; clypeus, labrum, mandibles (except apices), and tegulae yellow; antennae black with fourth and following joints and apical part of third beneath, ferruginous; abdomen brownish with a longitudinal median dorsal and lateral lines somewhat paler; propodeum dark brown with a yellowish median spot; legs yellowish, coxae black, posterior femora and tibiae rufous; wings uniformly yellowish; venation black, costa and stigma ferruginous; tibiae and tarsi with short hair.

Type locality.—Kumaon, Ramgarh, 6,000 feet (about 1,818 meters), British India.

Described from one female collected August 21–26, 1918, by T. B. Fletcher.

Type.—Cat. No. 22610, U.S.N.M.

TENTHREDO BALABATEA, new species.

Judging from the descriptions, this species is probably more closely allied to (*Allantus*) *Tenthredo incognitus* (Bingham), but it may readily be distinguished from that species by the black thorax.

Male.—Length, 9 mm.; length of antenna, 4.5 mm. Labrum polished, broadly rounded apically; clypeus shining, with widely separated, setigerous punctures, the anterior margin deeply sub-squarely emarginate, with broad rounded lobes; head with close (sometimes almost confluent) rather large punctures; middle fovea elongate more or less elliptical in outline; antennal furrows not especially prominent; postocellar area well defined, rectangular in outline, twice as wide as long; postocellar line subequal with the ocellocupital line but hardly half as long as the ocellocular line; antennae thickening apically, the third joint as long as the fourth and fifth which are subequal; mesonotum shining, with distinct, rather close, well defined punctures; mesepisternum closely punctatogranular, opaque; scutellum gently convex; stigma straight below; obliquely truncate at base and apex; third cubital cell longer on both radius and cubitus than the second; interradius received at about

middle of cell; second recurrent the length of second intercubitus from base of cell; abdomen shining; hypandrium narrowly truncate apically, short. Black; labrum, anterior femora and tibiae beneath, the intermediate femora apically beneath, yellowish; hind legs below trochanters, first sternite, and all of segments 3-6 inclusive rufous; wings brownish hyaline, somewhat darker anteriorly; venation except stigma black; stigma yellowish; head and thorax with rather long gray hair.

Type locality.—Dungagali, 8,000 feet (about 2,424 meters), Hazara District, British India.

Described from one male collected May 21-24, 1915, by T. B. Fletcher.

Type.—Cat. No. 22619, U.S.N.M.

TENTHREDELLA KUMAONENSIS, new species.

From *Tenthredella turneri* Rohwer this species may be separated by the black tergum and shorter third cubital cell.

Female.—Length, 10 mm. Labrum rather short, the anterior margin broadly rounded; clypeus long, the anterior margin broadly, rather shallowly, arcuately emarginate, lobes broad, rounded apically; supraclypeal area flat; middle fovea large, rather shallow, U-shaped in outline, raised in center; antennal furrows complete narrow; ocelli in an equilateral triangle; postocellar line about one-third as long as the ocellocular line; postocellar area flat, somewhat wider than long; head slightly receding behind eyes; antenna slender, filiform, as long as head and thorax, the third joint distinctly longer than fourth but shorter than fourth and fifth; mesonotum polished, with small well separated punctures which are sparser on scutellum; post-tergite (scutellum appendage) polished impunctate; mesepisternum shining, sparsely punctured above, but with rather close small punctures below; sheath broader at base, gradually and evenly rounding to an obtuse apex; second cubital but little shorter than the third, of the same width at base and apex, angulate where first recurrent joins the middle of the second abscissa of cubitus; third cubital two and one-half times as wide at apex as at base, receiving the second recurrent the length of second intercubitus from base; interradius strongly curved, joining the third cubital beyond the middle; nervulus at basal third. Black; band below antennae, clypeus, labrum, spot on mandible, cheeks, line on pronotum, tegulae, spot on mesepisternum, spot above hind coxa, sternites, and sheath sordid whitish; legs whitish, four anterior ones with a black line above from bases of femur (broader above), hind tibia except a small spot, and hind tarsi black; wings hyaline; venation black, except the reddish lower margin of stigma.

In one paratype the sheath is black and the sternites are marked with black; in another the hind femora are black above to near base.

Male.—Length, 9 mm. One specimen, which seems to be the male of this species, differs from the female as follows: Labrum longer; third and fourth antennal joints subequal; face entirely pale; spot on side and posterior lateral margin of pronotum, pale of mesosternum connected with that of mesepisternum, hind margin of mesepimeron, sordid-white; sternites except apical margins blackish; ventral margins of tergites yellowish; median spot on tergites three and four testaceous. Hypopygidium yellowish, narrowly rounded apically.

Type locality.—Ramgarh, Kumaon, British India.

Described from three females (one type) and one male collected August, 1918, at an altitude of 6,000 feet (about 1,818 meters) by T. B. Fletcher.

Type and allotype.—Cat. No. 22887, U.S.N.M.

Paratypes.—Returned to office of Imperial Entomologist of British India.

TENTHREDELLA SIABATAKA, new species.

Female.—Length, 9 mm. Labrum broadly rounded; clypeus rather broadly subsquarely emarginate apically, the lobes broadly rounded; middle fovea elongate and extending nearly to anterior ocellus; antennal furrows complete; postocellar furrow complete; postocellar area narrow, flat, more than twice as wide as long; head shining, slightly receding behind eyes; antennae rather short, slightly thickened apically, the third but little shorter than fourth and fifth; mesonotum shining, with small, sparse punctures; apex of scutellum with larger punctures and with a median ridge; post-tergite (scutellum appendage) ridged medianally and with some large punctures near the ridge, otherwise shining; mesepisternum subopaque, coriaceous; sheath straight above, convex below, broadly rounded apically; stigma angulate at base beneath; second recurrent at about middle of cell and causing the cubitus to become angulate; third cubital about three times as wide at apex as at base; interradius curved received at about apical third. Black; spot on clypeus, labrum, mandibles except apices, cheeks, angles of pronotum, tegulae, spot on side of pronotum, spot above hind coxa, four anterior legs below coxae beneath, hind tibiae except apices, bases of hand tarsal joints, *yellowish*; abdominal segments two to five inclusive reddish; wings hyaline; venation black.

Type locality.—Ramgarh, Kumaon, British India.

Described from one female collected August, 1918, at an altitude of 6,000 feet (about 1,818 meters), by T. B. Fletcher.

Type.—Cat. No. 22889, U.S.N.M.

TENTHREDELLA NIAPA, new species.

This species seems to be allied to *Tenthredella casta* (Konow), but the markings of the abdomen are different.

Female.—Length, 10 mm. Labrum long, polished, obtusely pointed apically; clypeus long, the apical margin deeply arcuately emarginate, lobes broad, rounded apically; antennal furrows complete; ocelli in an equilateral triangle, the anterior one yellow, the lateral ones black; postocellar area flat, but little wider than long; head shining, hardly receding behind eyes; antennae rather short, slightly thicker apically, the third joint nearly as long as four plus five; mesonotum shining almost without punctures; post-tergite (scutellum appendage) smooth, without a median ridge and with only a few punctures; mesepisternum coriaceous; sheath straight above and below, apex rounded; venation usual. Yellowish (probably green in life); apices of mandibles, antennae beyond scape, circular spot above antennae and extending to occiput (except postocellar area), anterior dorsal margin of pronotum, prescutum (except lateral margins), scutum, narrow mark on mesepisternum, basal middle of all tergites, narrow line on femora (abbreviated on anterior pair) above, *black*; sides and sternum paler than dorsum; wings hyaline; venation black; costa and stigma yellowish.

Type locality.—Dungagali, Hazara District, British India.

Described from one female collected May, 1915, by T. B. Fletcher, at an altitude of 6,000 feet (about 1,818 meters).

Type.—Cat. No. 22890, U.S.N.M.

MACROPHYA LUCIDA, new species.

In Enslin's review³ of the Palaearctic species of *Macrophya* this new species runs to *opposita* Smith, but the absence of dense punctures and differences in color will serve to separate it from that species.

Female.—Length, 9 mm. Anterior margin of the labrum broadly rounded; anterior margin of the clypeus deeply sub-squarely emarginate, the lobes broad, rounded apically; supra-clypeal area flat, shining; antennal furrows broad, shallow, complete; median fovea broad, shallow and not sharply defined; frons shining, with only a few punctures laterally but medianly the punctures are more numerous; vertical and postocellar furrows well defined; postocellar area flat, fully twice as wide as long; postocellar line but little more than half as long as the ocellocular line; head not receding behind the eyes; vertex and orbits shining, very sparsely punctured; antennae as long as head and thorax, slightly thicker apically, third joint but little shorter than four plus five which are subequal; mesonotum shining, with small, well separated punctures; mesepisternum opaque,

³ Deutsch. Ent. Zeit., 1910, p. 475

finely punctured, dorsally the punctures become larger; abdomen highly polished; sheath rather broad, straight above, convex below, rounded apically; stigma long, nearly parallel-sided, oblique apically; second cubital long, parallel-sided, receiving the recurrent a little before the middle; third cubital fully five times as wide at apex as at base, receiving the recurrent at basal third. Black, shining; two spots on clypeus, labrum, mandibles, spot on lower posterior orbit, small spot on inner superior orbit, narrow margin of pronotum, margin of tegulae, apical margin of fourth tergite (much wider laterally), *yellowish-white*; legs black, four anterior femora, tibiae and tarsi beneath, posterior tibiae beneath, *yellowish-white*; wings hyaline, venation black; head and thorax with long white hair.

Type locality.—Kumaoa, Ramgarh, British India.

Described from a single female collected at an altitude of 6,000 feet (about 1,818 meters), August, 1918, by T. B. Fletcher.

Type.—Cat. No. 22888, U. S. N. M.

CROMAPHYA, new genus.

Genotype.—*Cromaphya serricornis* Rohwer.

This genus belongs to the tribe Tenthredinini and allied to *Macrophya* Dahlbon and *Zalaquim* Rohwer, resembling them in the large metaepimeron, the flat front, etc., but may easily be distinguished from both of these as well as the other genera in the tribe by the serrate antennae. The noncarinate orbits and occiput, and the partly fused propodeum will separate it from *Paramacrophya* Forsius.

Clypeus emarginate; antenna probably nine-jointed (wanting beyond eight), the apices of the third and following joints produced so when seen from the side the flagellum is serrate, third antennal joint much longer than the fourth; inner margin of eyes strongly converging towards the clypeus; the distance between the eyes at the antennae slightly less than the length of the eye; malar space line-like; front as in *Macrophya*; posterior orbits narrower than the diameter of the eyes rounded; occiput and orbits not carinate; thorax much as in *Macrophya*; metaepimeron large, higher than the metaepisternum, rectangular in outline, the posterior part with a large oval-shaped area set off by a strong carina so as to form an oval basin; legs normal; hind coxae not especially large; tibial spurs long; hind basitarsus subequal in length with the following joints; claws cleft; basal plates not divided, but with a median longitudinal furrow; abdomen normal; wings as in *Macrophya* but the contraction of the anal cell is very short.

CROMAPHYA SERRICORNIS, new species.

Female.—Length, 10 mm. Labrum large, the anterior margin slightly emarginate; clypeus deeply subsquarely emarginate the lobes rounded, antennal furrows obsolete; postocellar areas defined lat-

erally by furrows, not defined anteriorly; antennal joints strongly produced beneath at apex so when seen from the side they appear serrate; front with close, sometimes confluent punctures; presecutum anteriorly, with close fine punctures posteriorly nearly impunctate; scutum with scattered punctures which are closer along the notauli; scutellum with close, well-defined punctures; metascutum polished, mesepisternum with well defined, rather close punctures, when seen from the front angled below; propodeum polished except in middle: stigma rounded below; second cubital distinctly shorter than third; sheath rather narrow, concave above, rounded apically, convex beneath. Black; clypeus, labrum (except apex) spot on mandibles; scape, pedicellum, base of first flagellar joint, posterior margin of pronotum narrowly, tegulae (except a small spot), perapteron, large spot on anterior margin of mesepisternum, band on scutellum, and propodeum yellowish-white; first (beyond propodeum) four abdominal segments red; legs black; spot on coxae (anterior pair almost entirely), trochanters, apices of four anterior femora, posterior femora beneath, tibiae except a spot on apices of hind pair and a line on top of four anterior pair, tarsi except apices of joints and a line beneath of hind basitarsis *yellowish-white*. Wings dusky hyaline, to base of stigma and stigmella, beyond brownish; venation black.

Type locality.—Cherrapunji, Assam.

Described from one female collected at an altitude of 4,400 feet (about 1,333 meters) in October (2-8), 1914, by S. W. Kemp.

Type.—Indian Museum, $\frac{8371}{20}$.

Subfamily EMPRIINAE.

AMONOPHADNUS, new genus.

Genotype.—*Amonophadnus submetallicus* Rohwer.

Allied to *Monophadnus* and *Paracharactus*, but differs from them in the longer hind basitarsis, dentation of claws, venation, etc. *Senoclidea* and *Parazarca* have the long hind basitarsis and are closely allied, but have the claws different.

Belongs to Blennocampini. Clypeus truncate; malar space very narrow; eyes distinctly converging to clypeus, the distance between them at clypeus subequal with their length; orbits not carinate; antennae hairy, pedicellum longer than its apical width, third joint longer than fourth; nervulus less than its length from apex of cell; interradius and third intercubitus inclined at different angles; discoidellan cell present in both sexes; basitarsi longer than three following joints; claws long, heavy at base, with an erect inner tooth near middle; metaepimeron narrow; first tergal spiracle near base.

AMONOPHADNUS SUBMETALLICUS, new species.

Female.—Length, 7 mm. Shining. Middle fovea represented by a large shallow area which is open above; antennal furrows sharply defined, interrupted opposite crest; ocellar basin ovate-elliptical in outline, extending above the ocellus, rather well defined; postocellar line distinctly shorter than the oselloocular line; postocellar furrow well defined, angulate; postocellar area gently convex, but little wider than long; antenna longer than head and thorax, slightly thickening apically, fourth and fifth joints subequal in length; stigma broadest at base, gradually tapering to apex; second and third abscissae of radius subequal; third cubital as long as the first and second combined; sheath narrow, parallel-sided, apex rounded. Submetallic bluish-black, abdomen more distinctly blue; antennae and legs, except trochanters and tibiae (anterior only posteriorly), which are yellowish-white, black; pubescence whitish, sparse; wings hyaline, iridescent; venation black.

Male.—Length, 5.5 mm. Hypopygidium truncate. Differs from description of female in having tibiae brownish.

Type locality.—Pulney Hills, South India.

Described from two females (one type) and one allotype male collected at an altitude of 3,600 feet (about 1,090 meters), May 10–31, 1917, by P. S. Nathan.

Type and allotype.—Cat. No. 22364, U.S.N.M.

Paratype returned to Government Entomologist of India.

ZASENOCLIA, new genus.

Genotype.—*Senoclia albocoerulea* Bingham (determined Rohwer).

This new genus is readily separated from *Senoclia* by the dentation of the tarsal claws and is probably more closely allied to *Senoclidea*, from which it differs in the following characters: Head flattened dorsally; pedicellum much longer than wide; petiole of anellan cell very short; antennal furrows interrupted; hind basitarsus longer than following joints, etc.

Belongs to Blennocampini. Anterior margin of clypeus slightly emarginate; malar space wanting; eyes large, prominent, very slightly converging to the clypeus; head flat above, the distance from top of eye to occiput but little shorter than the shortest diameter of eye; antennal furrows interrupted below ocelli; pedicellum nearly cylindrical, much longer than wide; interradius straight, joining the radius at an acute angle, and not inclined at same angle as the third intercubitus; anellan cell practically sessile; tarsal claws lobed basally, cleft apically.

ZASENOCELIA ALBOCOERULEA (Bingham).

Two females collected by R. C. McGregor, June, 1918, at Culasi, Panay, Philippine Islands, agree well with the original description.

In these the anterior margin of the clypeus is broadly, shallowly, arcuately emarginate; the frontal foveae are large; the interradius is interstitial with the third intercubitus; the second cubital is narrower below; and the apical part of the first abscissa of the anal vein forms a spur at the base of the lanceolate cell.

Genus *SENOCLIA* Cameron.

As far as can be determined with certainty, the genus *Senoclia* Cameron contains only two described species—*coerulea* Cameron and *cyanella* Cameron. The last-mentioned species was considered by Kirby to be a synonymon of *purpurata* Smith, but as the type localities are so widely separated it is desirable that the synonymy be confirmed. *Senoclia albocoerulea* Bingham does not belong to this genus but is the type of *Zasenoclia*. Other metallic blue Blennocampids have been described from the oriental region, but it is impossible to place them generically from the descriptions. Some few of them can, however, be placed in the related genus *Senoclidea* Rohwer. The species of *Senoclia* represented in the collection of the United States National Museum may be distinguished by the following key:

1. Exterior bases of tibiae whitish; wings basad of stigma nearly hyaline
diacoreae, new species.
 - Tibiae unicolorous black; wings uniformly violaceous or with a subhyaline area basad of basal vein in which case the base of wing is dark.....2
2. Female 11 mm.; male with wings uniformly violaceous; head more distinctly punctured and with stronger antennal furrows.....*bilanga*, new species.
 Female 9-10 mm.; male with apical three-fourths of median and submedian cell subhyaline.....*coerulea* Cameron

SENOCLIA DIACOREAE, new species.

The white at the bases of the tibiae and the hyaline basal part of wings easily distinguishes this species from other species of the genus.

Female.—Length, 11 mm. Clypeus flat, the apical margin truncate; supraclypeal area flat, triangular in outline; middle fovea large keystone-shaped in outline, the middle area convex, the handle of the "key" partially breaking through frontal crest; antennal furrows deep but partly interrupted opposite frontal crest; ocellar basin well defined, somewhat transversely elliptical in outline; postocellar furrow distinct, angulate, with a furrow from angulation to anterior ocellus; postocellar line distinctly shorter than ocellular line; postocellar area sharply defined, convex, nearly twice as wide as long; third antennal joint distinctly longer than the fourth which is subequal with the fifth; nervulus one-fourth its length from basal; sheath broad, nearly parallel-sided, obtusely rounded apically. Metallic blue with a purplish tinge; antennae and legs, except a yellowish spot on exterior bases of tibiae, blackish; wings brownish,

but entire area basad of basal and nervulus nearly hyaline; venation black.

Paratypes show that the convex area in middle fovea and the fovea itself may become somewhat elongated and be more spear-shaped.

Male.—Length, 10 mm. Hypopygidium truncate, with a very shallow arcuate emargination. Color and structure of female.

Type locality.—N. Malabar, Taliparamba, India.

Female type labeled "on pepper vine June '18;" allotype "July-Aug. '18," both collected by P. S. Nathan. Paratype male from same locality collected "16-26 IX '18," by Ramakrishna Ayyar. Paratype female Malabar Dt., Taliparamba, "30 IX-4 X '17" collected by Ramakrishna Ayyar. Paratype male and female from South Canara Dt., Kollur Ghat, 3,000 feet (about 909 meters), "18-21 IX-18." T. V. R., collector.

The letter which accompanied these specimens states that this species breeds "on a creeper, *Dioscorea*."

Type, allotype, and paratypes.—Cat. No. 22363, U.S.N.M.

Paratypes returned to Government entomologist of India.

SENOCLIA BILANGA, new species.

This species is closely allied to *caerulea* Cameron, but may be distinguished by the characters used in the foregoing key. The female is very like Cameron's species, and the differences are comparative and hard to express. The male is, however, easily distinguished.

Female.—Length, 11 mm. Clypeus flat; supraclypeal area very slightly convex, triangular in outline; antennal furrows well defined, complete; middle fovea large, shallow, and with a median tubercle; ocellar basin deep, well defined, U-shaped, extending behind anterior ocellus, as a furrow, to the postocellar furrow; postocellar line distinctly shorter than the ocellular line; postocellar furrow well defined, curved; postocellar area gently convex, about one-third wider than long; front, especially the ocellar area, with setigous punctures; third and fourth antennal joints subequal, joints six and seven slightly wider than the preceding or following; sheath broad, straight above, obtuse apically, rounding to base; cerci short. Dark metallic blue, with a purplish tinge; antennae and legs black; wings deep violaceous.

Male.—Length, 9 mm. Hypopygidium truncate. Structure as in female.

Type locality.—Kollegal, 2,000 feet (about 606 meters), Coimbatore, S. India.

One female and one male collected August 1, 1917, by Ramakrishna Ayyar. One female paratype from Kallar, Nilgiris, collected by J. V. R., September 27, 1917.

Type and allotype.—Cat. No. 22362, U.S.N.M.

Paratype returned to Government entomologist of India.

Subfamily PHYMATOCERINÆ.

TOMOSTETHUS (TOMOSTETHUS) TENUICORNIS, new species.

In the rather long, slender antennae this species differs from the other members of the genus. In color it is much like *hirticornis* Rohwer, but the legs are darker than they are in that species.

Female.—Length, 6.5 mm.; length of antennae, 4.75 mm. Clypeus long, the anterior margin very slightly emarginate, the lateral angles rounded; supraclypeal area triangular in outline, gently convex; middle fovea large, deep, nearly circular in outline, open below; antennal foveae deep, extending dorsally to a little above the level of the middle fovea; antennal furrows and pentagonal area obsolete; a line-like depressed area in front of anterior ocellus; postocellar line but little more than half as long as the ocellular line; postocellar furrow poorly defined; vertical furrows deep, straight, complete; postocellar area one and one-third times as wide as long; antenna slender, slightly tapering apically, covered with short hair, the third joint only slightly longer than the fourth; stigma rounded below, truncate apically; third cubital cell very short, its length on cubitus subequal, on radius shorter than the third intercubitus; interradius curved, joining radius somewhat beyond middle; claws with an inner tooth near base; sheath concave above, convex below, rounded apically. Black; pronotum, mesonotum (except scutellar appendage), and upper part of mesepisternum rufous; tibiae dark piceous; wings hyaline, with a faint dusky tinge; venation dark brown.

Type locality.—Murree, 7,500 feet (about 2,272 meters), British India.

Described from a single female collected June, 1918, by Dutt and forwarded by the Imperial Entomologist of India.

Type.—Cat. No. 22542, U.S.N.M.

TOMOSTETHUS (TOMOSTETHUS) GRACILICORNIS, new species.

In general appearance more like *Tomostethus (Eutomostethus) assamensis* Rohwer, but the antennae are more slender and the femora yellow.

Female.—Length, 6 mm.; length of antenna, 3 mm. Anterior margin of clypeus truncate, the lateral angles rounded; supraclypeal area rectangular in outline, only gently convex; median fovea large, deep, rectangular; antennal foveae deep, extending well above the top of the median fovea; pentagonal area triangular in outline, enclosing the anterior ocellus, lateral walls rounded, ventral wall poorly defined; antennal furrows well defined; postocellar furrow poorly defined; vertical furrows deep, well defined, slightly curved; postocellar line one-fourth shorter than the ocellular line; antenna slender, clothed with long hair, joints not well separated, third joint

one-fourth longer than the fourth; stigma tapering from near base; third cubital longer on both radius and cubitus than the first and second combined; interradius curved, received at apical third; nervulus somewhat less than its length from end of cell; claws with a large erect inner tooth a little beyond middle; sheath slightly concave above, strongly convex beneath, rounded apically. Black, shining; legs below apices of coxae yellow; apical tarsal joint slightly infuscate; wings hyaline; venation black.

Male.—Length, 5 mm. Agrees in color and structure with female.

Type locality.—Shillong, British India.

Described from one female (type) and seven (one allotype) males collected June and July, 1918, by T. B. Fletcher at an altitude of 5,000 feet (about 1,515 meters). Forwarded by the Imperial Entomologist of India.

Type, allotype, and paratypes.—Cat. No. 22543, U.S.N.M.

Paratypes (males) returned to imperial entomologist of India.

Subfamily NEMATINAE.

HEMICHROA (HEMICHROA) ORIENTALIS, new species.

This species is closely allied to the European *H. crocea* (Geoffroy), but may be distinguished by the black hind legs and the shape of the sheath. *H. major* Rohwer the only other oriental species belonging to this genus is quite different.

Female.—Length, 7 mm.; length of antenna about 5 mm. Anterior margin of the clypeus with a deep U-shaped emargination, the lobes broad and rounded apically; supraclypeal foveae deep elongate, confluent with antennal foveae; supraclypeal area broadly triangular in outline, gently convex; middle fovea elongate rather well defined, breaking through the crest; ventrad of middle fovea is a small rounded tubercle; ocellar basin hexagonal in outline, rather well defined, especially so dorsally; a small nearly circular fovea below anterior ocellus; inter-antennal area parted by a deep furrow; postocellar line a trifle shorter than the ocellular line; postocellar furrow present but not sharply defined; vertical furrows well defined, diverging posteriorly; anterior width of postocellar area not quite twice its median length; antenna tapering, the third and fourth joints subequal; stigma broadest at base gradually tapering to apex; interradius curved, received at about middle of cell; recurrentella about the length of intercubitella before intercubitella; sheath broad, straight above narrowly truncate at apex, tapering to broad base. Rufous-ferruginous; antennae, trophi, proepisternum; mesosternum, metapleurae, metascutellum, sheath and legs (except the apices of anterior femora and the tibiae beneath) black; wings brownish, clearer apically; venation black.

Type locality.—Kumaon, 6,000 feet (about 1,818 meters), Ramgark, British India.

Described from one female collected August, 1918, by T. B. Fletcher and forwarded by Imperial Entomologist of India.

Type.—Cat. No. 22393, U.S.N.M.

CROESUS ORIENTALIS, new species.

In size and appearance resembles *Croesus latitarsis* Norton.

Female.—Length, 8.5 mm.; length of antenna, 8.5 mm. Clypeus with a transverse fold basally, the anterior margin with a deep, rather narrow U-shaped emargination, lobes very broad and rounded; supraclypeal area convex, trapezoidal in outline; supraclypeal foveae large deep; confluent with the antennal foveae; middle fovea elongate, deep; frontal crest prominent, unbroken; ocellar basin poorly defined; a distinct ridge from ocellar basin to near eye margin; postocellar furrow angulate anteriorly, well defined; postocellar line subequal with ocellocular line; vertical furrows deep well defined for half the length of postocellar area; postocellar area one and one third times wider anteriorly than its median length; front sculptured below the ocelli, the vertex and temples shining, impunctate; antenna long, strongly tapering, the third and fourth joints subequal; mesothorax smooth and shining, with scattered setigerous punctures; hind basitarsi similar to those of *C. varius*; sheath broad, straight above, obliquely truncate apically, rounded below and tapering to base; stigma long, gradually rounding to apex; recurrentella before intercubitella by about length of latter. Black with a decided bluish tinge to body; wings hyaline, dusky from beyond base of stigma, the duskiness is deeper below stigma, venation black, stigma dark brown.

Type locality.—Shillong, altitude 5,000 feet (about 1,515 meters), British India.

Described from one female collected in September by T. B. Fletcher and sent by Imperial Entomologist of India.

Type.—Cat. No. 22392, U.S.N.M.