

NEW OR LITTLE-KNOWN TIPULIDÆ FROM THE
PHILIPPINES (DIPTERA), IX ¹

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THREE PLATES

The crane flies discussed in the present report are chiefly from the La Lun Mountains, Davao district, Mindanao, Philippine Islands, where they were collected at altitudes of between 5,500 and 5,800 feet, by Mr. Charles F. Clagg. A few of the species described from Mindanao were also found to occur in Luzon, where they were taken by Messrs. McGregor and Rivera. I wish to thank the above gentlemen for their kind coöperation in this study of the tipulid fauna of the Philippines and for the privilege of retaining the types of the novelties described in my collection.

TIPULINÆ

SCAMBONEURA MINDANAOENSIS sp. nov. Plate 1, fig. 1; Plate 2, fig. 23.

General coloration yellow, the præscutum with three metallic black stripes; vertex with a dark median vitta; antennæ (male) relatively short; wings with the elements of the anterior cord in nearly transverse alignment; male hypopygium with the outer dististyle a long yellow rod that terminates in a blackened spinous point; appendage of ninth sternite a long slender orange rod.

Male.—Length, about 13 to 14 millimeters; wing, 12.5 to 15; antennæ, 3.

Female.—Length, about 16 millimeters; wing, 15.

Frontal prolongation of head orange yellow, with a narrow black dorsomedian line; nasus elongate, black; palpi obscure yellow, passing into black outwardly. Antennæ relatively short in both sexes; scape yellow; flagellum (male) black; (female) black, in cases with the incisures of the basal segments restrictedly yellow. Head obscure orange yellow to brownish yellow, with a conspicuous brown line on vertex, this narrower in female.

¹ Contribution from the entomological laboratory, Massachusetts Agricultural College.

Pronotum black, the broad central portion of the posterior notum yellow. Mesonotal præscutum yellow with three black stripes, with greenish reflections in male, more purplish in female; scutal lobes with the entire lobes similarly darkened; median region of scutum light yellow; scutellum darkened, light yellow at base; postnotal mediotergite light yellow, with darkening at both base and apex. Pleura yellow, vaguely marked with more reddish brown. Halteres obscure yellow, the knobs infuscated. Legs with the coxæ and trochanters yellow; femora obscure yellow, the tips blackened; tibiæ and tarsi passing into black. Wings (Plate 1, fig. 1) hyaline, iridescent; stigma brown; veins black, paler in the costal region. Venation: Rs and other elements of anterior cord in oblique to transverse alignment, cell R_3 lying more basad than cell R_5 ; R_{1+2} represented by a conspicuous spur that is subequal to or longer than R_2 ; forks of media deep; m-cu close to fork of M.

Abdominal tergites orange, each with a conspicuous blue-black area occupying the center of the disk, the pale apex of the segment a little narrower than the base; on outer segments the dark areas are more extensive, occupying most of the segments; sternites obscure yellow; hypopygium chiefly darkened, the styli and appendage of the ninth sternite yellow or orange. Male hypopygium (Plate 2, fig. 23) large and conspicuous. Ninth tergite, $9t$, without heavy chitinization, the obtuse lateral lobes separated by U-shaped notch, set with short black spines and spinous setæ. Outer dististyle, od , a long projecting yellow rod, terminating in a blackened tip. Inner dististyle, id , considerably shorter, shaped as in figure. Conspicuous blackened bispinous structures that may be gonapophyses on either side of median line. Appendage of ninth sternite, $9s$, a long, feebly sinuous, slender rod that is only slightly expanded at apex, directed caudad, the tip slightly more dorsad, the surface densely covered with short setulæ.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 to 5,800 feet, July 2 to 5, 1930 (*Clagg*); holotype, male; allotype, female; paratypes, 6 males and females. "Sweeping among ferns and undergrowth along margins of brook."

Scamboneura mindanaoensis is most closely related to *S. primæva* Alexander (Luzon), differing especially in details of venation and coloration of the præscutum. The male of *primæva* is still unknown.

SCAMBONEURA DAVAOENSIS sp. nov. Plate 2, figs. 24, 25, and 26.

General coloration yellow; antennæ (male) elongate; præscutum with three leaden stripes that are conspicuously bordered by velvety black; a median dark area on postnotal mediotergite; wings with anterior cord strongly bowed; male hypopygium with the tergite produced medially; outer dististyle a short and broad ear-shaped lobe; appendage of ninth sternite short and broad.

Male.—Length, about 14 millimeters; wing, 12; antennæ, about 5.5.

Female.—Length, about 18 millimeters; wing, 15.

Frontal prolongation of head yellow, weakly infuscated dorsally; nasus black; palpi obscure yellow, the terminal segment blackened. Antennæ (male, elongate; scape brownish yellow; flagellum black, the apices of the basal segments restrictedly obscure yellow; female with antennæ shorter, the bicolorous nature more conspicuous. Head obscure yellow, the occipital region and a line therefrom onto vertex brownish black.

Pronotum blackened laterally, yellowish white medially. Mesonotal præscutum yellow, with three leaden stripes that are conspicuously bordered by velvety black; lateral margins of sclerite and a spot laterad of anterior end of lateral stripe blackened; scutum yellow, the lobes conspicuously blackened; scutellum brownish black, the base more yellow; parascutella black, their anterior margin yellow; postnotal mediotergite yellow, a median line and the posterior margin blackened. Pleura yellow, variegated with brown and reddish brown. Halteres blackened. Legs with the coxæ and trochanters yellow; femora obscure yellow, narrowly infuscated at tips; tibiæ brownish yellow, the tips narrowly blackened; tarsi black. Wings subhyaline, iridescent; stigma pale brown; veins black. Macrotrichia of veins elongate. Venation: Elements of anterior cord strongly bowed, as in the other specialized members of the genus; forks of medial field deep.

Abdominal tergites dull orange, the disk of each with a blue-black area, this becoming more extensive on the outer segments; lateral margins of tergite darkened; hypopygium blackened. Male hypopygium small. Ninth tergite (Plate 2, fig. 24) with the median area further produced, with a small V-shaped median notch. Outer dististyle, *od* (Plate 2, fig. 25), a short, broad, ear-shaped lobe. Inner dististyle, *id* (Plate 2, fig. 25), unusually small, heavily blackened. Appendage of ninth sternite, *9s*

(Plate 2, fig. 26), a short broad lobe, the lateral angles with coarse setæ, these becoming shorter and less conspicuous toward the obtuse apex of the lobe.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 2 to 5, 1930 (*Clagg*); holotype, male; allotype, female; paratype, male. "Among ferns and mossy trees."

Scamboneura davaoensis is most closely related to *S. dotata* Osten Sacken (Luzon), from which it differs in the longer and more nearly uniformly blackened antennæ of the male and the details of structure of the hypopygium, notably of the tergite.

DOLICHOPEZA (NESOPEZA) SPINISTERNATA sp. nov. Plate 1, fig. 2; Plate 2, fig. 27.

Belongs to the *gracilis* group; closely allied to *gracilis* de Meijere; general coloration yellow; antennæ elongate, pale yellow; mesonotal præscutum with three very poorly indicated pale brown stripes; pleura yellow; femoral tips weakly darkened; wing pattern much as in *gracilis*, the costal darkening not including cell R_3 ; medial forks of moderate depth; male hypopygium with each lateral angle of the sternite produced into a powerful spine that is composed of fasciculate black bristles.

Male.—Length, about 8 millimeters; wing, 8.5; antennæ, about 3.8.

Rostrum and palpi black. Antennæ (male) elongate, as shown by the measurements; yellow, the outer segments a very little darkened; flagellar segments elongate-cylindrical. Head brownish gray, narrowly clearer gray on the orbits; anterior vertex about three times as wide as the first scapal segment.

Mesonotum yellow, the præscutum with very poorly indicated pale brown stripes; scutal lobes with similar scarcely indicated markings; scutellum and postnotum more testaceous. Pleura pale yellow, unmarked. Halteres yellow, the knobs infuscated. Legs with the coxæ and trochanters pale yellow; femora yellow, the tips broadly but weakly darkened; tibiæ yellowish white, the tips narrowly blackened; tarsi white. Wings (Plate 1, fig. 2) whitish subhyaline, with a brown, chiefly costal, pattern that is arranged much as in *gracilis*; costal darkening ending at vein R_3 , cell R_3 being entirely clear; pale area in cell Sc_2 very extensive, the darkened portions restricted to the ends of the cell. Venation: Forks of medial field of moderate depth; cell 2d A relatively wide.

Abdominal tergites obscure yellow, the caudal margins of the basal segments weakly darkened, the outer segments more extensively so; sternites chiefly yellow, the caudal margins very

narrowly to scarcely darkened; hypopygium brownish yellow. Male hypopygium (Plate 2, fig. 27) with the lateral arms of the tergite, 9t, blackened, obtuse, provided with a few small black spinous points. Lateral angles of the sternite, 9s, produced into a powerful spine comprised of groups of fasciculate black setæ; median region of sternite at margin with further conspicuous black setæ. Outer dististyle a very small pale lobe, about as long as the beak of the inner dististyle.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 4, 1930, by sweeping (*Clagg*); holotype, male.

DOLICHOPEZA (NESOPEZA) PAUCISPINOSA sp. nov. Plate 2, fig. 28.

Belongs to the *gracilis* group; closely allied to *gracilis* de Meijere; mesonotal præscutum and pleura distinctly patterned with dark brown; wings light gray, with a heavy costal pattern; medial forks deeper than in *gracilis*; male hypopygium with the spines of the sternite relatively few in number.

Male.—Length, about 8.5 millimeters; wing, 9.5.

Female.—Length, about 9.5 millimeters; wing, 9.5.

Rostrum and palpi black. Antennæ with the basal segments obscure yellow, the flagellar segments passing into brown. Head gray, with a transverse brown marking connecting the eyes on the posterior vertex.

Mesonotal præscutum whitish, the median stripe dark brown, conspicuous; lateral stripes less evidently defined; scutum whitish, each lobe with two confluent brown marks; scutellum and posnotum pale brown. Pleura pale, variegated with dark brown on the anepisternum, ventral sternopleurite, meron, and narrowly on the ventral pleurotergite. Halteres with the stem dusky, the extreme base pale yellow, the knobs blackened. Legs with the coxæ and trochanters pale yellow; femora yellow, the tips conspicuously brown, the proximal half of this ring more intense, blackened; tibiæ whitish yellow, the tips narrowly darkened; tarsi white. Wings light gray, with a conspicuous dark brown costal pattern, arranged as in *gracilis*; two isolated whitish spots beyond the solid costal darkening, the first occupying the distal three-fifths of cell Sc₂, the second the outer end of cell R₃; dark seams at origin of Rs and in proximal end of cell R narrower than in *gracilis*. Venation: Distal end of vein R₃ strongly upcurved, widening cell R₃; medial forks deeper than in *gracilis*, the petioles of the cells correspondingly shortened; cell 2d A narrow.

Abdominal tergites dark brown, the basal segments variegated laterally with pale before their ends, the amount of dark color-

ing increasing outwardly; hypopygium chiefly dark. Male hypopygium (Plate 2, fig. 28) with the tergite, 9*t*, blackened, the lateral arms obtuse at tips, each provided with about fifteen small tubercles; median region of tergite weakly produced. Outer dististyle, *od*, short and stout. Sternite, 9*s*, with the spines large and conspicuous but reduced in number, there being about five or six on the lateral lobes, of which three or four are on the lateral portion, the others, shorter and stouter, on the mesial portion; median lobe of sternite with about eight spines, there being about four on each lateral angle.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 to 5,800 feet, July 2 to 3, 1930, by sweeping (*Clagg*); holotype, male; allotype, female.

The female is much darker than the male but seems undoubtedly to be conspecific. The dark markings of the thorax are more intense and contrast strongly with the ground color.

LIMONIINÆ

LIMONIINI

LIMONIA (LIMONIA) CLAGGI sp. nov. Plate 1, fig. 3; Plate 2, fig. 29.

General coloration black; anterior vertex silvery; præscutal stripes and centers of scutal lobes brownish yellow; legs black, the tips of the tibiæ and the tarsi paling to yellow; tarsal claws edentate; wings dusky, with a heavy dark brown pattern that is bordered by cream-colored areas; Sc long, Sc₁ extending to beyond r-m; Rs short, strongly angulated at origin; m-cu beyond fork of M; anal veins strongly curved to the wing margin; male hypopygium with the rostral prolongation long and slender, expanded at apex, provided with a single black spine; at base of prolongation from face of style a long pale basal tubercle tipped with a black spine.

Male.—Length, about 7.5 millimeters; wing, 8.5.

Rostrum dark brown; palpi black. Antennæ black; flagellar segments long-oval, with short glabrous apical necks; segments densely clothed with black setulæ and additional verticils, the longest of the latter unilaterally arranged and slightly exceeding the segments. Head black, the front and anterior vertex silvery; anterior vertex narrower than the diameter of the scape.

Pronotum dark brown. Mesonotal præscutum black, the usual stripes brownish yellow; scutal lobes with brownish yellow centers, the borders black; scutellum and postnotal mediotergite dark brown to black, sparsely pruinose. Pleura black, the sternopleurite paler, brown. Halteres with the stem yellow, infus-

cated on middle half, the knobs dark brown. Legs with the coxæ yellow, the mid-coxæ darker; trochanters obscure yellow; femora brownish black, the bases restrictedly paler; genua very narrowly and indistinctly brightened; tibiæ black, the extreme tips paling to yellowish; tarsi yellow, the terminal segments darkened; claws (male) long and slender, edentate. Wings (Plate 1, fig. 3) suffused with dusky, with a heavy brown pattern that is bordered by cream-colored areas; a very extensive brown costal area extends from before Rs to beyond the fork of Sc; other major dark areas as follows: At h and arculus; R₂ and R₁₊₂; center of cell R₂ at margin; tips of veins R₃, R₄₊₅, Cu₁, and the anal veins; a series of three spots, one each in cells R₅, 2d M₂, and M₃, in a line that parallels the wing margin; conspicuous seams on cord and outer end to cell 1st M₂; veins brown; outer portion of costa more incrassated, brownish black, with four conspicuous yellow areas, the first in cell Sc₁, two in cell R₂, the last, smallest, in cell R₃. Venation: Sc long, Sc₁ ending beyond r-m, Sc₂ at its tip; Rs short, very strongly angulated at origin; basal section of R₄₊₅ nearly as long as Rs; cell 1st M₂ closed; m-cu about one-half its length beyond the fork of M, a trifle longer than the distal section of Cu₁; anal veins curved strongly to the wing margin.

Abdominal tergites brownish black, the sternites with a broad obscure yellow basal triangle; hypopygium dark. Male hypopygium (Plate 2, fig. 29) with the caudal margin of the tergite, 9t, very gently emarginate. Basistyle, *b*, of moderate size, the ventromesal lobe obtuse, basal in position. Dorsal dististyle a nearly straight rod, the curved apex blackened, the outer margin with abundant appressed spinulæ. Ventral dististyle, *vd*, oval, with conspicuous setæ; rostral prolongation long and slender, at apex more expanded, on outer margin with a black spine; at base of prolongation on face of style a long slender rodlike tubercle that bears the second spine, this short, about one-fifth the length of the pale base. Gonapophyses, *g*, broad, the apex a short, more-chitinized beak; a weak lobe on mesal edge. Ædeagus, *a*, large, the apex obtuse.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,800 feet, July 3, 1930 (*Clagg*); holotype, male. "Sweeping in ferns and undergrowth along margins of small brook."

Limonia (*Limonia*) *claggi* is named in honor of the collector, Mr. Charles F. Clagg, to whom I am very greatly indebted for invaluable crane flies from the high mountains of Mindanao. The species obviously belongs to the *trigonia* group, having Sc

unusually long and with m-cu beyond the fork of M. The latter characters would serve to place the species of the *trigonia* group in the subgenus *Libnotes*, whereas their true affinities seem to lie with *Limonia* s. s.

LIMONIA (LIMONIA) SYNCHÆTA sp. nov. Plate 1, fig. 4; Plate 2, fig. 30.

General coloration black, the præscutum with three reddish brown stripes; halteres infuscated; legs black; wings with a strong brown tinge, sparsely seamed along cord and outer end of cell 1st M_2 with darker brown; stigmal area restricted to a narrow seam at the fork of R_1 ; male hypopygium with the two rostral spines of the ventral dististyle arising basad of a long yellow boomerang-shaped structure, the spines from a common fused base that divides into unequal pale tubercles.

Male.—Length, about 6 to 8 millimeters; wing, 7 to 9.5.

Rostrum and palpi black. Antennæ black throughout; basal flagellar segments subglobular, the outer segments passing into oval; verticils relatively inconspicuous, on basal segments shorter than the segments themselves, on outer segments becoming more elongate. Head black.

Pronotum black. Mesonotal præscutum black, the three usual stripes reddish brown; scutal lobes with centers reddish brown, bordered by blackish; scutellum chiefly pale; postnotal mediotergite darkened on anterior portion, paler behind. Pleura chiefly dark brown, vaguely brightened in places, as on the ventral sternopleurite; dorsopleural region pale. Halteres infuscated, the extreme base of stem brightened. Legs with the coxæ and trochanters obscure yellow; remainder of legs black; claws long and slender, with a single acute basal spine. Wings (Plate 1, fig. 4) with a strong brown tinge, restrictedly patterned at origin of R_s , along cord and outer end of cell 1st M_2 , and as a narrow stigmal seam at the fork of R_1 with darker brown; veins darker brown. Costal fringe of moderate length. Venation: Sc_1 ending about opposite three-fourths the length of R_s , Sc_2 at its tip; R_s nearly square at origin; free tip of Sc_2 opposite or a little before the level of R_2 ; m-cu just before the fork of M.

Abdominal tergites black, the basal sternites black, their bases restrictedly pale; hypopygium chiefly dark. Male hypopygium (Plate 2, fig. 30) with the caudal margin of the tergite, $9t$, very gently emarginate, the very low lateral lobes with long coarse setæ. Basistyle, b , relatively short and stout, the ventromesal lobe broad, basal in position, at apex with a smaller lobule that bears two long and two short setæ. Ventral dististyle, vd ,

relatively small and oval, the rostral prolongation a long, pale yellow, boomerang-shaped structure, the usual spines arising from a common flattened base that branches into two unequal tubercles, the outer longer, bearing a somewhat longer spine, the inner tubercle short, its spine a trifle shortened. Dorsal dististyle with the outer margin with microscopic spinulæ. Gonapophyses, *g*, with the mesal-apical lobe relatively slender, smooth, and gently curved.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,800 feet, July 3, 1930 (*Clagg*); holotype, male. "Among ferns and undergrowth along margins of small brook;" Mount Apo, 7,000 feet, September 11, 1930 (*Clagg*); paratype, male. LUZON, Laguna Province, above Ube, altitude about 1,625 feet, December 22, 1929 (*McGregor*); paratype, male.

Limonia (*Limonia*) *synchæta* is well-distinguished by the peculiar structure of the male hypopygium. The type is smaller than the paratype but is undoubtedly conspecific.

LIMONIA (LIMONIA) PLEIADES sp. nov. Plate 1, fig. 5; Plate 2, fig. 31.

General coloration castaneous; wings with the cephalic half strongly suffused with brown, the posterior half gray; seven circular to oval whitish hyaline droplets in cells of wing, these slightly ringed with darker; male hypopygium with the rostral prolongation remote from the basal spine of the ventral dististyle.

Male.—Length, about 5.5 millimeters; wing, 4.8 to 5.

Female.—Length, about 6 millimeters; wing, 5.5.

Rostrum and palpi small, dark brown. Antennæ dark brown; basal flagellar segments subglobular, becoming oval and then elongate-oval outwardly, the segments on outer face with very long verticils, those on the inner face shorter but still long and conspicuous. Head blackened behind, heavily pruinose with silvery, especially on the front and anterior vertex, the latter wide in both sexes.

Pronotum brownish black. Mesonotum castaneous, nitidous, the pleura more variegated with darker. Halteres dark brown. Legs with the coxæ and trochanters yellow; femora yellow, the tips slightly enlarged and conspicuously blackened, the amount subequal on all legs; fore tibiæ black, the other tibiæ paler, tipped with black; tarsi black; claws long and slender, with an elongate spine at near one-third the length, together with two additional progressively smaller spines at base. Wings (Plate 1, fig. 5) with the cephalic half strongly suffused with brown, the posterior cells paler, more grayish; cord and outer end of

cell 1st M_2 seamed with darker brown, in cases suffusing the stigmal region and adjoining portions of the radial field; axilla weakly darkened; seven circular to oval whitish-hyaline areas, one each in cells R, R_1 , Sc_1 , R_2 , R_3 near outer end, center of 1st M_2 , and near base of 2d M_2 , these droplets narrowly bordered by brown; veins dark brown. Venation: Sc long, Sc_1 ending about opposite four-fifths to five-sixths Rs, Sc_2 at its tip; m-cu at fork of M. The hyaline droplets distort the following veins: Costa and R just beyond the fork of Sc, Rs just before midlength, R_3 just beyond R_2 , R_{4+5} near outer end, second and third sections of M_{1+2} , and outer section of M_3 before midlength.

Basal abdominal tergites black, the caudal portions broadly black; outer tergites black, with metallic green reflections; basal sternites similarly dimidiate yellow and black, the outer segments dull black; hypopygium chiefly yellow, the basistyles darkened apically. Male hypopygium (Plate 2, fig. 31) with the caudal margin of the tergite, $9t$, very shallowly notched. Basistyle, b , long and slender, the ventromesal lobe relatively small. Dorsal dististyle nearly straight, the apex a little expanded, narrowed to an acute point. Ventral dististyle, vd , small, fleshy, the cephalic mesal portion produced into a slender rod that is tipped by a long black spine; mesal face of style at near midlength bearing the rostral prolongation, the latter at near midlength with a slender hairlike spine. Gonapophyses with the mesal-apical lobe slender, the tip acute. \AA edeagus, a , bifurcate at tip. Ovipositor with the genital shield of the tergal valves very large, the valves correspondingly reduced; sternal valves very large.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 4 and 5, 1930, by sweeping (*Clagg*); holotype, male; allotype, female; paratypes, 2 males; Mount Apo, 7,000 to 8,000 feet, September 21, 1930 (*Clagg*); paratypes, 1 male and 1 female.

The specific name of this charming fly is derived from the seven conspicuous droplets on the wing membrane. I can suggest no closely allied form.

LIMONIA (LIMONIA) PRNOTALIS sp. nov. Plate 1, fig. 6.

Head obscure yellow, blackened behind; pronotum orange; mesonotum blue-black, the sides of the præscutum and the dorsopleural region intensely black; knobs of halteres ivory white; fore femora black, the basal fourth pale; tibiæ darkened; wings suffused with brown, the prearcular and costal regions more whitish, without a pale crossband before the cord.

Female.—Length, about 5.5 millimeters; wing, 5.3.

Rostrum and mouth parts very much reduced to nearly lacking. Antennæ with the scape obscure yellow, the flagellum black; basal flagellar segments short, subglobular, their ends truncated, the outer segments more elongate and slender; verticils of basal segments short and inconspicuous, outwardly becoming longer, subequal to or exceeding the segments. Front obscure yellow, the broad vertex more-polished black.

Pronotum fiery orange. Mesonotal præscutum polished blue-black, more intensely blackened on the sides; humeral region obscure yellow; median region of præscutum and scutum brightened at suture; remainder of notum blue-black. Pleura with the dorsopleural region intense black; sternopleurite paler, more brownish; pleurotergite black. Halteres brown, the knobs ivory white. Legs with the coxæ and trochanters pale yellow; fore femora black, only the basal fourth pale; middle and posterior femora yellow with about the distal seventh blackened; fore tibiæ black, the other tibiæ somewhat paler, tipped with black; tarsi brown; claws with a subobtuse basal tooth that bears a long pale seta. Wings (Plate 1, fig. 6) with a uniform brown suffusion, the prearcular and costal regions more whitish, the latter involving the base of cell R; stigma small, ill-delimited; no hyaline crossband before cord, as in *citrofocalis*; veins dark brown. Venation: Sc₁ ending at near midlength of Rs, Sc₂ at its tip; free tip of Sc₂ pale, subequal to the section of R₁ beyond; R₂ pale, without macrotrichia; basal section of R₄₊₅ strongly arcuated; cell 1st M₂ closed; m-cu at fork of M, long, sinuous, exceeding the distal section of Cu₁; anal veins parallel at base.

Abdominal tergites black, the subterminal segment abruptly light yellow; sternites conspicuously pale medially, the lateral portions darkened; genital segment black. Ovipositor with the tergal valves slender, strongly upcurved.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 2, 1930 (*Clagg*); holotype, female. "Among ferns and on mossy trees;" Mount Apo, 6,000 to 7,000 feet, September 1 to 11, 1930 (*Clagg*); paratypes, 4 males and females.

Limonia (Limonia) pronotalis is most closely allied to *L. (L.) citrofocalis* (Edwards), of Borneo, differing most evidently in the uniformly infuscated wings, without a hyaline crossband before the cord, together with the details of coloration of body and fore femora.

LIMONIA (LIMONIA) CYNOTIS sp. nov. Plate 1, fig. 7; Plate 2, fig. 32.

General coloration dark brown; antennæ black throughout; knobs of halteres and the legs blackened; wings with a strong blackish suffusion; male hypopygium with the dististyle single, shaped more or less like a dog's ear, the mesal face densely hairy.

Male.—Length, about 5 millimeters; wing, 5.2.

Female.—Length, about 5.5 millimeters; wing, 5.8.

Rostrum dark brown; palpi black. Antennæ black throughout; basal flagellar segments globular, the outer ones more oval, with short verticils. Head black.

Pronotum dark brown. Mesonotum uniformly dark brown, the surface subnitidous. Pleura brown, a little paler than the notum; dorsopleural membrane blackened. Halteres dusky, the base of stem restrictedly brightened, the knobs blackened. Legs with the coxæ pale brown; trochanters yellow; remainder of legs black. Wings (Plate 1, fig. 7) with a strong blackish suffusion; stigma lacking; veins darker than the ground color. Venation: Sc_1 ending just before midlength of R_s , Sc_2 at its tip; R_s long; free tip of Sc_2 perpendicular, some distance before R_2 ; m-cu close to fork of M ; vein 2d A relatively long.

Abdomen, including the hypopygium, black. Male hypopygium (Plate 2, fig. 32) with the tergite, $9t$, large. Basistyle, b , with the ventromesal lobe relatively small. A single dististyle, d , shaped more or less like a dog's ear, broad at base, narrowed outwardly to a point, the mesal face densely set with erect black setæ; outer margin of style near base with a small hemispherical tubercle that bears two large setæ. Gonapophyses, g , with the mesal-apical lobes appearing as elongate dusky blades. Ædeagus, a , large, bifid at apex, the surface with abundant erect microscopic setulæ.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,800 feet, July 2 and 3, 1930 (*Clagg*); holotype, male; allotype, female; paratypes, 2 males and 2 females. "Among ferns and undergrowth along margins of brook."

Limonia (Limonia) cynotis is well distinguished by the combination of characters outlined above, more especially the uniformly blackened wings and peculiar structure of the male hypopygium.

LIMONIA (LIMONIA) PROLIXICORNIS sp. nov. Plate 1, fig. 8; Plate 2, fig. 33.

General coloration reddish brown; antennæ (male) elongate, nearly one-half the length of the body; halteres infuscated; wings tinged with brown; Sc_1 ending opposite or beyond mid-

length of R_s , Sc_2 a short distance from its tip; cell M_2 open by atrophy of m ; male hypopygium without dorsal dististyle; ventral dististyle subglobular, the rostral prolongation long and slender, without spines.

Male.—Length, about 3.3 to 3.4 millimeters; wing, 4.2; antennæ, about 1.5.

Female.—Length, about 4 millimeters; wing, 4.

Rostrum and palpi black. Antennæ black throughout, in male very elongate for a member of this genus, if bent backward extending about to one-third the length of the abdomen; flagellar segments long-oval to fusiform, the apical necks glabrous, the remainder of the segment with abundant erect setæ that are much shorter than the segments; no outstanding verticils. In female, antennæ much shorter, the segments oval to long-oval, with the verticils more evident. Head dark brown.

Mesonotum reddish brown, without markings. Pleura brownish testaceous, somewhat paler ventrally. Halteres infuscated, the extreme base of stem brighter. Legs with the coxæ and trochanters yellowish testaceous; remainder of legs brownish black; claws usually small, nearly straight, each with a group of slender spines at base. Wings (Plate 1, fig. 8) tinged with brown, the oval stigma slightly darker brown; veins dark brown. Venation: Sc_1 ending opposite or beyond midlength of R_s , Sc_2 slightly removed from its tip, Sc_1 alone being subequal or longer than R_2 ; cell M_2 open by the atrophy of m ; cell M_3 relatively deep; vein 2d A at origin converging rather strongly toward vein 1st A.

Abdominal tergites and hypopygium dark brown; basal sternites yellow, the outer segments passing into dark brown. Male hypopygium (Plate 2, fig. 33) with the tergite, 9t, produced into long slender lateral lobes, their apices glabrous. Basistyle, b , relatively stout, the ventromesal lobe low and obtuse; mesal face of style with a dense area of long coarse setæ. Ventral dististyle, d , subglobular, nearly as large as the basistyle, the rostral prolongation very long and slender, slightly expanded at apex but unprovided with rostral spines. Dorsal dististyle lacking. Gonapophyses, g , with the mesal-apical lobe recurved at apex, the margin toothed. Ædeagus, a , divided at apex into four lobes.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 to 5,800 feet, July 2 to 4, 1930 (*Clagg*); holotype, male; allotype, female; paratypes, 7 males and females. "Among ferns and on mossy trees, everything very damp."

Limonia (Limonia) prolixicornis is apparently closely allied to *L. (L.) pacata* Alexander (Luzon), differing in the details of venation, as the longer Sc and Sc₁, and deeper cell M₃. Unfortunately, the male of *pacata* is still unknown, and the nature of the antennæ and the male hypopygium cannot be stated.

LIMONIA (LIMONIA) PILOSICAUDATA sp. nov. Plate 1, fig. 9; Plate 2, figs. 34, 35.

General coloration brownish yellow, the præscutum darkened medially behind; femora brownish yellow, more yellowish at tips, this area inclosing a black ring; wings tinged with brown, with a darker brown seamed and spotted pattern; abdominal tergites bicolorous; male hypopygium large and complicated in structure; tergite tumid, with abundant long yellow setæ; ventral dististyle oval, produced at apex into a very long hairy lobe; rostral prolongation very small, at base with a small tubercle that bears two long setoid spines.

Male.—Length, about 8 to 9 millimeters; wing, 9 to 9.5.

Female.—Length, about 10 millimeters; wing, 10 to 11.

Rostrum and palpi black, the former produced, nearly as long as the remainder of head. Antennæ black throughout; flagellar segments subcylindrical, becoming more elongate outwardly, the verticils barely exceeding the segments; terminal segment elongate, about one-half longer than the penultimate. Head dark gray; anterior vertex reduced to a linear strip.

Pronotum brown. Mesonotal præscutum brownish yellow, the median region behind weakly darkened, the stripes otherwise lacking; scutal lobes conspicuously infuscated, the median region pale; scutellum pale basally, margined with darker; postnotal mediotergite dark brown, paler laterally. Pleura generally brownish yellow, the dorsopleural region infuscated. Halteres yellow, the knobs blackened. Legs with the coxæ brownish yellow; trochanters yellow; femora brownish yellow, with a conspicuous black subterminal ring preceded and followed by narrow clearer yellow annuli; tibiæ brown; tarsi passing to darker brown; claws relatively small, with an acute spine and a more-basal seta on proximal third. Wings (Plate 1, fig. 9) tinged with brown, cells C, Sc, and a conspicuous seam along the cubital veins darker brown; stigma small, oval, dark brown; narrow brown seams at origin of Rs, along cord, and on outer end of cell 1st M₂; veins dark brown, paler brown in the costal region. Venation: Sc₁ ending shortly beyond the fork of Rs, Sc₂ near its tip; Rs long, arcuated to weakly angulated at origin; anterior branch of Rs forming a regular curve; cell 1st M₂ long, m-cu close to fork of M.

Abdominal tergites bicolorous, their bases darkened, the apices yellow, the amount of the latter decreasing on the outer segments; sternites more uniformly yellow; hypopygium generally dark brown. Male hypopygium (Plate 2, fig. 34) very large and complicated in structure. Ninth tergite (Plate 2, fig. 35) with the lobes tumid, separated on caudal margin by a small notch, the lobes with very abundant long erect yellow setæ, much longer than the tergite itself. Basistyle, *b*, relatively small, the ventromesal lobe very long, bearing a smaller lateral lobule on basal half, the apex of the lobe conspicuously setiferous. Ventral dististyle, *vd*, an oval structure that is greatly produced at apex into a long-cylindrical hairy lobe; on dorsal face of style a blackened short-hairy lobe, in the notch of which lies the long sinuous dorsal dististyle (not figured); the usual rostral prolongation is a small slender lobe, at base with a small tubercle bearing two very elongate setoid spines. Gonapophyses, *g*, with the mesal-apical lobe a blackened hook. Ovipositor with the tergal valves long and slender, gently upcurved; sternal valves long and straight.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 2 to 5, 1930 (*Clagg*); holotype, male; allotype, female; paratypes, 2 males. "Among ferns and on mossy trees; sweeping in ferns and undergrowth along margins of small brook;" Mount Apo, 6,500 to 8,000 feet, September 10 to 21, 1930 (*Clagg*); paratypes, 8 of both sexes.

Limonia (*Limonia*) *pilosicaudata* might be construed as falling within the limits of the subgenus *Libnotes* but shows certain characters of the typical subgenus wherein I am retaining it. The very peculiar structure of the male hypopygium is distinctive.

LIMONIA (LIMONIA) DAVAOENSIS sp. nov. Plate 1, fig. 10; Plate 3, fig. 36.

General coloration obscure yellow, the præscutum with three confluent brown stripes; antennæ black throughout; a narrow dark brown pleural stripe; knobs of halteres infuscated; wings with a faint brown tinge, the circular stigma darker; male hypopygium with a slender lobe on basistyle, in addition to the long ventromesal lobe; dorsal dististyle pale, straight, hairy; ventral dististyle without rostral spines; gonapophyses with the margin microscopically serrulate.

Male.—Length, about 4.6 to 5 millimeters; wing, 5.2 to 5.8.

Female.—Length, about 5.5 millimeters; wing, 6.

Rostrum and palpi black. Antennæ black throughout; segments oval, with very short apical necks; outer segments more

elongate, the terminal one pointed; verticils short. Head dark brown; anterior vertex (male) reduced to a narrow strip.

Pronotum black, the anterior lateral pretergites yellow. Mesonotal præscutum obscure yellow, the central portion covered by three confluent dark brown stripes, the lateral stripes continued caudad onto the scutal lobes; median area of scutum pale; posterior sclerites of mesonotum infuscated. Pleura yellow, with a distinct dark brown longitudinal stripe that extends from the pronotum to the abdomen, passing beneath the halteres. Halteres infuscated, the extreme base of stem yellow. Legs with the coxæ and trochanters pale yellow; femora brownish yellow, brighter at base, passing into brown at tip; tibiæ and tarsi dark brown; claws relatively long and slender, with a single acute spine near base. Wings (Plate 1, fig. 10) with a faint brown tinge, the prearcular and costal regions a trifle more yellow; wing tip slightly darkened; stigma circular, pale brown; veins dark brown. Venation: Sc_1 ending about opposite two-thirds the length of the arcuated R_s , Sc_2 at its tip; free tip of Sc_2 and R_2 in transverse alignment; m-cu close to the fork of M; vein 2d A at base converging slightly toward 1st A.

Abdominal tergites dark brown, the extreme caudal margins of the segments ringed with reddish brown; sternites more uniformly darkened; hypopygium dark brown. Male hypopygium (Plate 3, fig. 36) with the tergite, $9t$, long, gradually narrowed outwardly, the narrow apex subtruncate to very weakly concave; a marginal series of about five coarse setæ on either side. Basistyle, b , with the ventromesal lobe basal in position, very long, narrowed outwardly, provided with long coarse setæ, with a small basal lobule in axil; on mesal face of style but more apical in position a slender dark lobe that terminates in about six stout yellow setæ. Dorsal dististyle a pale straight rod, narrowed to a point, the tip acute. Ventral dististyle, vd , relatively small, of unusual form, with two dusky setiferous lobes at base; rostral blade stout, without evidently developed spines. Gonapophyses, g , with the outer margin of the mesal-apical lobe with abundant microscopic sawlike teeth or ridges. Ovipositor with the valves long and slender.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 to 5,800 feet, July 3 and 4, 1930 (*Clagg*); holotype, male; allotype, female; paratypes, 3 males. "Among ferns and undergrowth along margins of small brook;" Mount Apo, 7,000 to 8,000 feet, September 30, 1930 (*Clagg*); paratype, male.

Limonia (Limonia) davaoensis is very distinct from other regional species in the peculiar structure of the male hypopygium.

LIMONIA (LIMONIA) CALIANENSIS sp. nov. Plate 1, fig. 11; Plate 3, fig. 37.

General coloration brown; antennæ black throughout; mesonotal præscutum brown, with three yellow stripes; pleura yellow, with a broad black longitudinal stripe; wings pale brown, unmarked; abdomen black, the basal sternites yellow; male hypopygium with the basistyle long and slender, the ventromesal lobe extensive, appressed to the face of the style; ventral dististyle relatively small, the two spines of the rostral prolongation long, appressed to the face of the prolongation, blunt or weakly notched at tips.

Male.—Length, about 5.2 millimeters; wing, 6.2.

Rostrum small, brownish yellow; palpi black. Antennæ black throughout; basal segments short-oval, with short glabrous apical necks; outer segments more elongate-oval, terminal segment about one-third longer than the penultimate; flagellar verticils long and conspicuous, the longest on the outer segments fully twice as long as the segments. Head rich brown; anterior vertex wider than the first scapal segment.

Pronotum dark in front, paler behind. Mesonotal præscutum brown, the three usual stripes yellow, the median one broad, the laterals narrow, crossing the suture onto the lateral portions of the scutal lobes; posterior sclerites of mesonotum chiefly darkened, the median area of the scutum and scutellum somewhat more testaceous. Pleura pale yellow, with a broad black longitudinal stripe extending from the pronotum to the abdomen, passing beneath the root of the halteres, leaving a pale area dorsad of this beneath the wing root and on the dorsal pleurotergite; dorsopleural region infuscated. Halteres brownish black. Legs with the coxæ and trochanters yellow; remainder of legs light brown, only the terminal tarsal segments darker; claws long and slender, with a single long basal spine. Wings (Plate 1, fig. 11) with a pale brown tinge, without markings; veins darker brown. Costal fringe of moderate length. Venation: Sc_1 ending at midlength of R_s , Sc_2 at its tip; free tip of Sc_2 and R_2 in transverse alignment; m-cu at fork of M; vein 2d A at origin converging very insensibly toward 1st A.

Abdominal tergites brownish black; basal sternites yellow, beyond the second passing into black; hypopygium dark brown.

Male hypopygium (Plate 3, fig. 37) with the ninth tergite, *9t*, transverse, the caudal margin weakly concave, with about four submarginal setæ on either side. Basistyle, *b*, long and slender, the ventromesal lobe large, appressed to the mesal face of the style. Ventral dististyle, *vd*, much smaller than the basistyle, oval, the rostral prolongation conspicuous, chitinized; rostral spines two, basal in position, directed outward along the face of the prolongation; spines elongate, their tips blunt or weakly notched. Dorsal dististyle a gently curved chitinized rod, narrowed to the acute tip. Gonapophyses, *g*, with the mesal-apical lobe long and nearly straight, the margins smooth.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 3, 1930 (*Clagg*); holotype, male; Mount Apo, 8,000 feet, September 15, 1930 (*Clagg*); paratype, male.

Limonia (*Limonia*) *calianensis* is superficially like *L.* (*L.*) *ligayai* Alexander (Luzon) and other similar species but is amply distinct in the structure of the male hypopygium, in conjunction with other characters as outlined.

LIMONIA (LIBNOTES) BELLULA sp. nov. Plate 1, fig. 12; Plate 3, fig. 38.

General coloration pale yellow; mesonotal præscutum with an Λ -shaped black area that extends across the suture onto the scutal lobes; antennal flagellum pale; knobs of halteres and the femoral tips blackened; wings whitish subhyaline, with a heavy brown pattern, including a large area at arculus and a narrow lunate line before the wing tip; origin of R_s square, of R_{2+3} subangular; male hypopygium with the ventral dististyle large and fleshy, the rostral prolongation very short, with two unequal spines, the outer one widened into a pale flange.

Male.—Length, about 5.5 to 6 millimeters; wing, 5.8 to 6.5.

Female.—Length, about 6.5 millimeters; wing, 6.2.

Rostrum and palpi black. Antennæ with the scapal segments black, the flagellum much paler, brownish yellow; flagellar segments oval, becoming more slender and elongate outwardly; a unilateral series of very long verticils. Head gray; anterior vertex reduced to a linear strip.

Pronotum black, yellow laterally. Mesonotum yellow, the præscutum with Λ -shaped black area, consisting of the confluent median and lateral stripes, the posterior half of the former being replaced by yellow; lateral stripes crossing the suture onto the scutal lobes; scutellum pale yellow; postnotal mediotergite weakly infuscated. Pleura yellow. Halteres yellow, the knobs of the halteres black. Legs with the coxæ and trochanters

pale yellow; femora yellow, the tips narrowly but conspicuously blackened, the amount subequal on all legs; remainder of legs pale yellow; claws of moderate size, with a single developed spine. Wings (Plate 1, fig. 12) whitish subhyaline, the prearcular and costal regions more suffused with yellow; a heavy brown pattern, distributed as follows: At arculus, extending from costa to vein 1st A; origin of Rs, completely traversing cell R; stigma, extended caudad to vein R_{4+5} ; a narrow lunate darkening before wing tip, the concave side of the area being directed outward, extending from costa across the radial and medial fields to vein M_3 ; a narrow dark margin from cell R_2 into cell Cu; cord and outer end of cell 1st M_2 with narrow brown seams; an oval spot near end of vein 1st A; axilla narrowly darkened; veins yellow, brown where traversing the darkened areas; veins C, Sc, and R brighter yellow. Costal fringe relatively long and conspicuous; macrotrichia of veins beyond cord long and conspicuous. Venation: Sc ending just beyond fork of Rs, Sc_2 far from its tip; Rs strongly angulated to square at origin; R_{2+3} subangular at origin; m-cu at from one-third to one-half the length of cell 1st M_2 ; anal veins evenly diverging.

Abdominal tergites yellow, the caudal margin very broadly brownish black; sternites more uniformly pale; hypopygium yellow, the basistyles conspicuously darkened. Male hypopygium (Plate 3, fig. 38) with the tergite, $9t$, unusually long, the caudal lobes very conspicuous, provided with long erect setæ. Basistyle, b , relatively small, the ventromesal lobe basal in position, small. Ventral dististyle, vd , very large and fleshy, the rostral prolongation small, with two very unequal spines, the outer unusually wide, its outer margin a pale flange, the inner spine small and delicate. Gonapophyses, g , with the mesal-apical angle microscopically serrulate along margin. Ædeagus slightly bifid at apex.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 to 5,800 feet, July 2 to 5, 1930 (*Clagg*); holotype, male; allotype, female; paratypes, 1 male and 1 female. "Among ferns and on mossy trees; among ferns and undergrowth along margins of a small brook;" Mount Apo, 7,000 feet, September 15, 1930 (*Clagg*); paratype, female. LUZON, Laguna Province, above Ube, February 3 to 9, 1930 (*Rivera*); paratypes, 7 males and females.

Limonia (*Libnotes*) *bellula* approaches very closely the characters of the subgenus *Goniodineura* van der Wulp. By Ed-

wards's key to the species of *Libnotes*² the present species runs to couplet 58, disagreeing with both included species in all details of coloration. If the arcuation of the base of R_{2+3} is considered as being an angulation, the present species runs to couplet 54, *nigriceps* (van der Wulp), type of the subgenus *Goniodineura*.

HELIUS (HELIUS) TRIANGULIFERUS sp. nov. Plate 1, fig. 13.

General coloration reddish brown; rostrum and legs black; wings gray; anterior branch of Rs short, directed cephalad and fused for a short distance back from the margin with R_1 , forming a small closed triangular cell that is nearly filled by a gray stigmal area.

Male.—Length, about 3 millimeters; wing, 3.2.

Female.—Length, about 3.7 to 4 millimeters; wing, 3.8 to 4.2.

Rostrum about as long as the remainder of head, black; palpi black. Antennæ black throughout. Head black.

Mesonotum and pleura light reddish yellow, unmarked, darker in the paratype. Halteres infuscated. Legs with the coxæ and trochanters brownish yellow; remainder of legs black, the femoral bases restrictedly pale; terminal tarsal segments paling to yellowish brown. Wings (Plate 1, fig. 13) gray, the stigma slightly darker gray, almost filling the triangular cell R_1 ; a narrow apical clouding in cell R_3 ; veins dark brown. Costal fringe (male) relatively long and conspicuous. Venation: Sc_1 ending just beyond origin of Rs, Sc_2 shortly before this origin; anterior branch of Rs (R_{2+3}) very short, fused for a short distance back from the margin with R_1 , forming a small closed triangular cell; cell R_3 at margin correspondingly extensive; inner end of cell 1st M_2 arcuated; m-cu at or close to fork of M.

Abdomen dark brown. Ovipositor with the valves very long and slender, blackened.

LUZON, Laguna Province, above Ube, February 11, 1930 (*Rivera*); holotype, male; allotype, female. MINDANAO, Davao district, Calian, La Lun Mountains, at trap lantern, altitude 5,500 feet, July 4, 1930 (*Clagg*); paratype, female; Mount Apo, 6,000 feet, September 23, 1930 (*Clagg*); paratype, female.

The peculiar venation suffices to distinguish the present species. The Mindanao paratypes are slightly larger and darker but seem unquestionably to belong here.

² Journ. Fed. Malay States Mus. 14 (1928) 74-80.

HEXATOMINI

Genus EPIPHRAGMA Osten Sacken

Subgenus POLYPHRAGMA novum

Characters as in *Epiphragma* s. s., differing as follows: Basal segments of antennal flagellum united into a fusion segment; supernumerary crossveins and spurs in cell C, additional to the one normally present; a weak supernumerary crossvein in cell Cu, this rarely lacking.

Type of the subgenus, *Epiphragma bakeri* Alexander (Oriental Region).

Besides the subgenotype, the following species belong here: *Epiphragma cinereinota* Alexander, *crenulata* Alexander, *flavosternata* Alexander, *fulvinota* sp. nov., *fuscinota* sp. nov., *fuscosternata* Alexander, *ochrinota* Alexander, *subcrenulata* Alexander, and *triarmata* sp. nov. All the known species of the subgenus are from the Philippines and Borneo.

EPIPHRAGMA (POLYPHRAGMA) FUSCINOTA sp. nov. Plate 1, fig. 14; Plate 3, fig. 39.

General coloration of mesonotum brown; femora brown; in cases with the tips abruptly pale yellow; tarsi yellow; wings gray, the ground color almost obliterated by a heavy brown pattern; cell 2d A uniformly darkened; male hypopygium with the interbasal process expanded at apex into a simple smooth blade.

Male.—Length, about 7.5 to 8 millimeters; wing, 8.5 to 9.

Rostrum and palpi black. Antennæ black, the fusion segment only slightly brightened. Head with the vertex obscure fulvous, with a median dark brown vitta and a posterior orbital darkening.

Posterior pronotum obscure yellow. Mesonotum generally brown, the humeral and lateral portions of the præscutum somewhat darker brown. Pleura somewhat darker brown than the notum, the ventral sternopleurite paling to yellowish. Halteres elongate, obscure yellow, the knobs darkened. Legs with the fore coxæ obscure yellow, the other coxæ somewhat darker; trochanters obscure yellow; femora infuscated, the bases brightened, the tips narrowly and abruptly yellow; tibiæ brown, the tips paling to obscure brownish yellow; tarsi yellowish. The Luzon paratype lacks the yellow femoral tips. Wings (Plate 1, fig. 14) gray, the costal region more yellowish gray, the ground

color chiefly obliterated by a very heavy brown pattern, darker brown along the costal margin; cell 2d A uniformly darkened. Venation: Supernumerary crossveins and spurs in cell C relatively few in number; Rs angulated to short-spurred at origin; m-cu variable in position, in the holotype figured being at mid-length of cell 1st M_2 , in the paratype less than its own length beyond the fork or M.

Abdominal tergites dark brown; sternites weakly bicolorous, obscure brownish yellow, the incisures and, more especially, the bases of the segments infuscated; hypopygium chiefly dark. Male hypopygium (Plate 3, fig. 39) with the outer dististyle, *od*, a chitinized rod, the tip curved into an acute spine, before apex with a small ventral tooth. Inner dististyle, *id*, expanded at apex into a head, the outer margin with a subspinous crest. Interbasal process, *i*, elongate, at apex expanded into a smooth, flattened obtuse blade.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,800 feet, July 3, 1930 (*Clagg*); holotype, male. "Sweeping ferns and undergrowth along margins of small brook." LUZON, Laguna Province, above Ube, February 3 to 9, 1930 (*Rivera*); paratype, male.

The paratype is slightly smaller and differs in details of leg coloration and wing venation from the type. However, the structure of the male hypopygium is the same, and I must regard the two specimens as being conspecific.

EPIPHRAGMA (POLYPHRAGMA) FULVINOTA sp. nov. Plate 1, fig. 15; Plate 3, fig. 40.

Mesonotum dull fulvous, the pleura brownish black; legs yellow, the femora with a broad dark brown subterminal ring; wings yellowish brown, the costal region brighter yellow; a heavy brown pattern, the areas not bordered by paler; male hypopygium with the base of the outer dististyle elevated into abundant points to produce a crownlike appearance; interbasal process a simple flattened blade, the apex a curved beak.

Male.—Length, about 6.5 millimeters; wing, 7.5.

Rostrum and palpi brownish black. Antennæ with the scape dull ochreous, the fusion segment fulvous; remainder of antennæ dark brown. Head grayish, more infuscated on posterior orbits.

Mesonotum dull fulvous, the scutellum and postnotum a little darker. Pleura and pleurotergite conspicuously brownish black. Halteres yellow, the knobs infuscated. Legs with the coxæ brownish yellow, brightened apically; trochanters yellow; femora yellow, with a broad dark brown subterminal ring, the ex-

treme apex bright yellow; tibiæ and tarsi light yellow. Wings (Plate 1, fig. 15) tinged with yellowish brown, the prearcular and costal regions clear yellow; a heavy brown pattern, the areas not bordered by paler; a series of alternating brown and yellow areas on costa to wing tip; the most conspicuous of the dark clouds are marginal at ends of all longitudinal veins, at origin of Rs and on the supernumerary crossvein in cell Cu; cord, outer end of cell 1st M_2 and fork of M_{1+2} conspicuously seamed with brown; veins dark brown, alternately yellow and brown in the costal region. Venation: Supernumerary crossveins and spurs in cell C relatively few in number, there being only one or two beyond the origin of Rs; m-cu at about two-thirds its length beyond the fork of M.

Abdominal tergites yellowish brown, margined laterally with darker brown; sternites clearer yellow; hypopygium brown. Male hypopygium (Plate 3, fig. 40) with the caudal margin of the tergite, $9t$, produced into two slender glabrous spinous lobes that are separated by a broad U-shaped notch. Outer dististyle, od , broadest on basal half, the outer margin with abundant spinous points and tubercles to produce a crownlike appearance. Interbasal process, i , a flattened blade, relatively narrow, the apex a simple strongly curved beak, as figured.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 5, 1930, by sweeping (*Clagg*); holotype, male; Mount Apo, 7,000 to 8,000 feet, September 1 to 20, 1930 (*Clagg*); several paratypes, both sexes.

Epiphragma (Polyphragma) fulvinota bears a marked superficial resemblance to *E. (P.) ochrinota* Alexander (Luzon), but differs very conspicuously in the structure of the male hypopygium.

EPIPHRAGMA (POLYPHRAGMA) TRIARMATA sp. nov. Plate 1, fig. 16; Plate 3, fig. 41.

Male.—Length, about 7.5 to 8 millimeters; wing, 8.2 to 9.

Female.—Length, about 10 millimeters; wing, 9.

Generally similar in appearance to *E. (P.) ochrinota* Alexander, differing especially in the larger size and structure of the male hypopygium.

Antennal scape pale brown to brown, the fusion segment obscure fulvous. Head dull brown.

Mesonotum uniformly dull fulvous, the pleura abruptly dark brown; ventral sternopleurite paler. Halteres elongate, yellow, the knobs infuscated. Legs yellow, the darkened femoral ring

pale brown. Wings (Plate 1, fig. 16) grayish brown, the prearcular and costal regions light yellow; a heavy brown pattern that is conspicuously margined with pale yellow. Venation: Relatively numerous crossveins and spurs in cell C, including two or three beyond the origin of Rs.

Abdominal tergites brown, the basal sternites brighter, more yellowish, darkened laterally; hypopygium dark. Male hypopygium (Plate 3, fig. 41) with the ninth tergite, 9*t*, bearing two broad lobes that are separated by a V-shaped notch. Outer dististyle, *od*, curved to a simple chitinized hook. Inner dististyle angulated at midlength. Interbasal process, *i*, complicated in structure, at apex bearing three lobes, including a flattened paddlelike arm and a glabrous branch that terminates in an acute spine and a lower obtuse lobe.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 2 to 5, 1930 (*Clagg*); holotype, male; allotype, female; paratype, male. "Sweeping among ferns and on mossy trees."

ADELPHOMYIA CARBONICOLOR sp. nov. Plate 1, fig. 17.

General coloration of thorax shiny coal-black; wings with a grayish tinge, sparsely patterned with brown; Sc₁ long; R₂ at fork of R₃₊₄.

Male.—Length, about 4.5 millimeters; wing, 4.7.

Rostrum and palpi black. Antennæ black throughout. Head dull blackish gray.

Pronotum, mesonotum, and pleura shiny coal-black. Halteres yellow, the knobs dark brown. Legs with the fore coxæ pale brown, the remaining coxæ yellow; trochanters yellow; remainder of legs broken. Wings (Plate 1, fig. 17) with a grayish tinge, the costal third a little more cream-colored; a sparse brown pattern, including the stigma, a paler cloud at origin of Rs, a narrow seam on anterior cord, and weak gray clouds on posterior cord, outer end of cell 1st M₂, Sc₂, and as an arcular suffusion; veins pale, darker in the infuscated areas. Macrotrichia of cells relatively few. Venation: Sc₂ some distance from the tip of Sc₁; Rs angulated and weakly spurred at origin; R₂ at fork of R₃₊₄; cell M₁ small; m-cu from one-third to one-half its length beyond the fork of M.

Abdominal tergites black; sternites brownish black, the caudal margins of the intermediate segments a little paler; hypopygium dark.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,800 feet, July 3, 1930 (*Clagg*); holotype, male. "Among ferns and undergrowth along margins of small brook."

Adelphomyia carbonicolor is most closely related to *A. luzonensis* Alexander (Luzon), differing most evidently in the polished black thorax, and details of wing pattern and venation. The wings of the present species are noticeably wider, but this may well be a sexual character.

LIMNOPHILA (DICRANOPHRAGMA) RETRACTA sp. nov. Plate 1, fig. 18.

General coloration brownish gray, the thorax immaculate; antennal scape black, the basal flagellar segments pale brown; legs and halteres yellow; wings whitish, with a restricted brown pattern, the six dark costal areas narrow; supernumerary crossvein in cell R_3 more than twice its length from tip of vein R_3 .

Female.—Length, about 5.5 millimeters; wing, 4.8.

Rostrum and palpi black. Antennæ with the scapal segments black; basal flagellar segments pale brown, the outer segments passing into darker brown. Head dark, sparsely pruinose.

Mesonotum brownish gray, without markings, the posterior sclerites more blackish, sparsely pollinose. Pleura dark brown, sparsely pruinose. Halteres obscure yellow. Legs with the fore coxæ dark brown, the other coxæ paler; trochanters obscure yellow; remainder of legs yellow, the terminal tarsal segments darkened. Wings (Plate 1, fig. 18) whitish, the prearcular and costal regions very slightly more yellow; a relatively sparse spotted brown pattern, including six relatively narrow costal blotches, the second at origin of R_s , the third at fork of Sc , the fourth at fork of R_1 , the two latter connected posteriorly to form a V-shaped area along the anterior cord, leaving a small whitish area in cell Sc_1 ; relatively large brown marginal spots at ends of all the longitudinal veins, these becoming progressively larger back from the wing tip; remainder of wing disk with small, chiefly circular or irregular areas in all cells, these not forming conspicuous transverse lines; veins pale, darker in the clouded areas. Venation: Sc_1 ending opposite the fork of R_{2+3+4} , Sc_2 about opposite midlength of the latter vein; supernumerary crossvein in cell R_3 more than twice its own length back from tip; cell M_1 about two-thirds its petiole; m-cu less than its own length beyond fork of M .

Abdomen dark brown; valves of ovipositor long and slender, the long tergal valves brown, paling to horn color at tips; sternal valves entirely dark, straight.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 2, 1930 (*Clagg*); holotype, female.

Limnophila (*Dicranophragma*) *retracta* is most closely related to *L. (D.) remota* (de Meijere), differing most evidently in the unmarked mesonotal præscutum and the more sparsely patterned wings.

LIMNOPHILA (DICRANOPHRAGMA) RADIALIS sp. nov.

General coloration of mesonotal præscutum light buffy gray, immaculate; wings whitish, the costal region light yellow; a very abundant brown pattern that is heavier and darker in the radial field; wing tip narrowly clear yellow; supernumerary crossvein in cell R_3 far from tip of vein R_3 .

Female.—Length, about 6 millimeters; wing, 5.5.

Rostrum and palpi black. Antennæ with the scapal segments black, the flagellum chiefly dark brown. Head dark gray.

Mesonotal præscutum light buffy gray, without markings; pseudosutural foveæ pale; posterior sclerites of mesonotum darker gray. Pleura dark, sparsely pruinose. Halteres light dusky, the knobs weakly infuscated. Legs with the coxæ yellow, the fore and middle coxæ a little darker and weakly pruinose; remainder of legs yellow, the tips of the tarsi weakly darkened. Wings with the ground color whitish, the costal region light yellow; a very abundant dotted and transversely streaked brown pattern that becomes conspicuously darker and heavier in the radial field, where the ground color is reduced to tiny spots and dots; the marginal areas at ends of medial and cubical veins ring-like, with pale centers; the areas in the cells are dots and spots that tend to flow together; in cells M, Cu, 1st A, and 2d A the areas are more elongate and transverse; dark areas in costal field reduced in number; wing tip in radial and medial fields narrowly clear light yellow; veins pale, somewhat darker in the infuscated areas. Venation; Supernumerary crossvein in cell R_3 about two and one-half times its length from tip of vein R_3 , the second section of this vein being about one-third longer than the basal section.

Abdomen dark brown.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 4, 1930, at trap lantern (*Clagg*); holotype, female; paratype, female.

Limnophila (*Dicranophragma*) *radialis* is allied to *L. (D.) retracta* sp. nov., but is sufficiently well distinguished by the characters outlined above.

ERIOPTERINI

GONOMYIA (LIPOPHLEPS) PTILOSTENELLA sp. nov. Plate 1, fig. 19; Plate 3, fig. 42.

General coloration black, sparsely variegated with pale, including a longitudinal silvery white stripe on pleura; antennæ, halteres, and legs black; wings with a dusky tinge; Sc₁ ending opposite the origin of Rs, Sc₂ far from its tip; cell 2d M₂ small; m-cu far before the fork of M.

Male.—Length, about 2.5 millimeters; wing, 3.2.

Female.—Length, about 3 to 3.8 millimeters; wing, 3.5.

Rostrum very short, black, margined in front with paler; palpi black. Antennæ black throughout; flagellar segments oval; segments with a dense erect white pubescence and slightly longer, but inconspicuous verticils, the latter not greatly elongated in the male, as usual in *Lipophleps*. Head black, sparsely pruinose, the narrow orbits and anterior vertex pale.

Pronotum black; anterior lateral pretergites conspicuously light yellow, the narrow posterior lateral pretergites white. Mesonotal præscutum black, subnitidous; humeral triangles small, yellow; pseudosutural foveæ large, polished black; scutum black, with a small obscure yellow spot on either side of the midline behind the suture; scutellum broad, black, pruinose, postnotal mediotergite black, the cephalic portion with a broad pale yellow V-shaped area. Pleura black, pruinose, with a broad silvery white longitudinal stripe on the dorsal sternopleurite, becoming broader behind; posterior dorsal pleurites whitish. Halteres black. Legs black. Wings (Plate 1, fig. 19) with a dusky tinge; veins brownish black. Venation: Prearcular region notably developed in both sexes; Sc₁ ending opposite the origin of Rs, Sc₂ far from its tip, at near mid-distance between arculus and origin of Rs; cell 2d M₂ very small, from two-fifths to one-third its petiole; m-cu about its own length before the fork of M.

Abdomen black, the pleural membrane yellow; hypopygium brownish yellow. Male hypopygium (Plate 3, fig. 42) with the ninth tergite, 9*t*, large, the caudal margin with a conspicuous V-shaped median notch, the broad lobes thus formed truncate or nearly so. Basistyle, *b*, produced caudad into a stout lateral and an equally long but more slender mesal lobe, both conspicuously setiferous. Two dististyles, *d*, borne in the notch of the

basistyle, the outer a pale glabrous rod that is sinuously narrowed to an acute point; inner style subequal or longer, pale, divided at tip into two broad pale blades; at midlength of the style with numerous delicate erect setulæ. Ovipositor with the tergal valves black, the hairy sternal valves paler.

LUZON, Tayabas Province, Candelaria, altitude 50 meters, June 21, 1930, in small ferns at side of stream (*McGregor and Rivera*); holotype, male; allotype, female; paratypes, 2 females.

Gonomyia (Lipophleps) ptilostenella is most closely related to *G. (L.) ptilostenoides* Alexander (Formosa), differing conspicuously in the coloration and details of venation, such as the developed prearcular region. The discovery of the male sex of the present species shows that this group of crane flies is to be retained in *Lipophleps* for convenience only, since the genitalic and antennal structure of the male is much more like that found in *Progonomyia* and *Ptilostena* than in *Lipophleps*. It seems possible that a new subgeneric group, near *Ptilostena*, might prove necessary to receive this species and allies.

GONOMYIA (LIPOPHLEPS) ACANTHOPHALLUS sp. nov. Plate 1, fig. 20; Plate 3, fig. 43.

General coloration dark brown; head gray; scutellum obscure yellow, dark at base; legs black; wings brownish yellow, the stigma a trifle darker; Sc long; male hypopygium with the dististyle single, subterminal in position; phallosome very large and complex, the largest lobe fan-shaped, with a row of spines down the face.

Male.—Length, about 3.3 millimeters; wing, 3.8 to 4.

Rostrum brownish yellow; palpi black. Antennæ black throughout. Head dark gray, the occiput restrictedly paler.

Mesonotal præscutum and scutal lobes dark brown, the anterior lateral pretergites light yellow; median region of scutum and scutellum obscure yellow, the base of the latter dark brown; postnotal mediotergite dark brown, with a yellow area on cephalic lateral portion. Pleura dark brown, with a broad silvery white longitudinal stripe; pteropleurite light yellow. Halteres dusky, the knobs obscure yellow. Legs with the fore and middle coxæ brown, the posterior coxæ a little paler; trochanters pale; remainder of legs black, the femoral bases a little paler. Wings (Plate 1, fig. 20) brownish yellow, the stigmal region a trifle darker but very diffuse; veins brown. Venation: Sc long, Sc₁ ending about opposite one-third the length of the long Rs, Sc₂ a short distance from its tip; branches of Rs long; cell 1st M₂ closed; m-cu at fork of M.

Abdominal tergites dark brown, the sternites obscure yellow. Male hypopygium (Plate 3, fig. 43) with the basistyles, *b*, stout, the outer lateral angle produced into a cylindrical fleshy setiferous lobe. Dististyle, *d*, single, a trifle longer than the lobe of the basistyle, entirely pale, slightly expanded and angularly bent at about three-fourths the length, terminating in a fasciculate seta. Phallosome, *p*, large and complex, terminating in three lobes, one short and obtuse, entirely glabrous; another a long straight rod; the third a broadly expanded, fan-shaped structure, down the face of which extends a row of recurved spines that gradually decrease in size toward the base.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 3 to 5, 1930, by sweeping (*Clagg*); holotype, male; paratype, 1 alcoholic male.

Gonomyia (Lipophleps) acanthophallus is very different from the other described *Lipophleps* with long subcosta. It is closest to *G. (L.) longiradialis* Alexander (Luzon) in the structure of the basistyle and dististyle of the male hypopygium, but differs very notably in the details of the phallosome.

Genus ERIOPTERA Meigen

ERIOPTERA PERPICTULA sp. nov. Plate 1, fig. 21; Plate 3, fig. 44.

General coloration of mesonotal præscutum and scutum reddish brown; posterior sclerites of mesonotum dark brown; pleura variegated dark and pale brown; halteres pale yellow; wings cream yellow, with a handsome brown pattern.

Male.—Length, about 3.2 millimeters; wing, 4.

Rostrum brown; palpi dark brown. Antennæ short, the segments with long, conspicuous verticils. Head pale ochreous.

Pronotum and anterior lateral pretergites chiefly white. Mesonotal præscutum pale reddish brown, the humeral region more whitish yellow; scutal lobes reddish brown; scutellum and postnotum brownish black. Pleura variegated longitudinally with dark brown and obscure brownish yellow. Halteres pale yellow. Legs with the fore and middle coxæ dark brown, the posterior coxæ paler; trochanters yellow; remainder of legs broken. Wings (Plate 1, fig. 21) cream yellow, with a handsome brown pattern, distributed as follows: Arcular region; a large area at origin of Rs, extending from Sc to M; a broad oblique cross-band along the cord, extending from the stigmal region to Cu, wider in the radial field, narrowly interrupted at the fork of M; outer end of cell 1st M₂; marginal spots on veins R₅, M₃, M₄, Cu₁, and 2d A; conspicuous grayish brown clouds in the

basal portions of cells M and Cu and the central portion of cell 1st A; veins pale yellow, darker in the infuscated areas. Macrotrichia of veins and marginal fringes very easily broken, leaving microscopic peglike spines. Venation: Sc_1 very long, Sc_2 being just beyond the origin of Rs; Rs subequal to R_{3+4} ; R_{2+3} subperpendicular; R_{2+3+4} in alignment with R_4 ; cell 1st M_2 symmetrically closed; m-cu at fork of M; tips of veins M_3 , M_4 , and Cu_1 deflected very slightly toward wing tip; vein 2d A straight.

Abdominal tergites dark brown, the sternites somewhat paler; hypopygium yellow. Male hypopygium (Plate 3, fig. 44) with the basistyle, *b*, very long and slender. Dististyles two, terminal in position, the outer, *od*, a long straight or gently sinuous blackened rod, at apex a little dilated and set with blunt tubercles. Inner dististyle a slightly shorter pale blade, slightly dilated at distal end. Gonapophyses appearing as simple black spines. *Ædeagus*, *a*, strongly curved.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,800 feet, July 3, 1930 (*Clagg*); holotype, male. "Among ferns and undergrowth along margins of small brook." Mount Apo, Bakraeyon, altitude 8,000 feet, dancing over a rotten log, September 15, 1930 (*Clagg*); paratypes, 15 of both sexes.

I am undecided as to the strict systematic position of this fly and for the present, at least, would place it in *Erioptera*. The essential characters of the fly do not seriously disagree with those of *Erioptera*, although the meral region is somewhat less developed than in most of the subgeneric groups.

TOXORHINA (TOXORHINA) DENDROIDEA sp. nov. Plate 1, fig. 22; Plate 3, fig. 45.

Size small (wing, male, 4.2 millimeters); mesonotum brownish ochereous, more grayish behind, unmarked; wings with cell M_2 open by atrophy of m; male hypopygium with a dense area of dendroidal setæ on mesal face of basistyle; outer dististyle bifid; branches of *ædeagus* short.

Male.—Length (excluding rostrum), about 3.8 millimeters; wing, 4.2.

Rostrum brown, the apex broken in the unique type. Antennæ black. Head gray; eyes (male) very large, broadly contiguous beneath.

Mesonotal præscutum and scutal lobes brownish ochereous, without markings; median area of scutum, base of scutellum and postnotal mediotergite light gray; posterior margin of scutellum ochereous. Pleura ochereous, sparsely pruinose. Legs with the coxæ and trochanters yellow; remainder of legs black.

Wings (Plate 1, fig. 22) hyaline; veins dark brown. Macrotrichia on all longitudinal veins beyond cord, on entire length of Rs, on distal half of M, and distal eighth of basal section of Cu₁. Venation: Sc₁ ending a short distance beyond origin of Rs, Sc₂ a corresponding distance before this origin; cell M₂ open by atrophy of m; m-cu at fork of M, about one-third longer than the distal section of Cu₁.

Abdomen brownish ochereous. Male hypopygium (Plate 3, fig. 45) with the basistyles, *b*, having the mesal face densely set with setigerous punctures, the majority of which bear remarkable branched spinous setæ of many forms (Plate 3, fig. 45, *ds*, sub). Outer dististyle, *od*, bifid, the outer arm a slender, acutely pointed blade, the inner arm stouter, straight, its obtuse apex narrowly blackened. Inner dististyle a broad pale blade, at near midlength on outer margin with a blunt tubercle that bears about a dozen spines; apex of style obtusely rounded. Branches of ædeagus, *a*, short.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 2, 1930 (*Clagg*); holotype, male. "Among ferns and undergrowth along margins of small brook." Mount Apo, 8,000 feet, September 19, 1930 (*Clagg*); paratypes, males.

Toxorhina (*Toxorhina*) *dendroidea* is most closely allied to *T. (T.) duyagi* Alexander, *T. (T.) montina* Alexander, and *T. (T.) biceps* Alexander, all of Luzon, differing conspicuously in the structure of the male hypopygium. The rather remarkable group of branched setæ on the mesal face of the basistyle is not found in the three related species listed above.

ILLUSTRATIONS

[Legend: *a*, ædeagus; *b*, basistyle; *d*, dististyles; *ds*, dendroidal seta; *g*, gonapophysis; *i*, interbasal process; *id*, inner dististyle; *od*, outer dististyle; *p*, phallosome; *s*, sternite; *t*, tergite; *vd*, ventral dististyle.]

PLATE 1

- FIG. 1. *Scamboneura mindanaoensis* sp. nov., wing.
2. *Dolichopeza (Nesopeza) spinisternata* sp. nov., wing.
3. *Limonia (Limonia) claggi* sp. nov., wing.
4. *Limonia (Limonia) synchæta* sp. nov., wing.
5. *Limonia (Limonia) pleiades* sp. nov., wing.
6. *Limonia (Limonia) pronotalis* sp. nov., wing.
7. *Limonia (Limonia) cynotis* sp. nov., wing.
8. *Limonia (Limonia) prolixicornis* sp. nov., wing.
9. *Limonia (Limonia) pilosicaudata* sp. nov., wing.
10. *Limonia (Limonia) davaoensis* sp. nov., wing.
11. *Limonia (Limonia) calianensis* sp. nov., wing.
12. *Limonia (Libnotes) bellula* sp. nov., wing.
13. *Helius (Helius) trianguliferus* sp. nov., wing.
14. *Epiphragma (Polyphragma) fuscinota* sp. nov., wing.
15. *Epiphragma (Polyphragma) fulvinota* sp. nov., wing.
16. *Epiphragma (Polyphragma) triarmata* sp. nov., wing.
17. *Adelphomyia carbonicolor* sp. nov., wing.
18. *Limnophila (Dicranophragma) retracta* sp. nov., wing.
19. *Gonomyia (Lipophleps) ptilostenella* sp. nov., wing.
20. *Gonomyia (Lipophleps) acanthophallus* sp. nov., wing.
21. *Erioptera perpictula* sp. nov., wing.
22. *Toxorhina (Toxorhina) dendroidea* sp. nov., wing.

PLATE 2

- FIG. 23. *Scamboneura mindanaoensis* sp. nov., male hypopygium, details.
24. *Scamboneura davaoensis* sp. nov., male hypopygium, ninth tergite.
25. *Scamboneura davaoensis* sp. nov., male hypopygium, dististyles.
26. *Scamboneura davaoensis* sp. nov., male hypopygium, appendage of ninth sternite.
27. *Dolichopeza (Nesopeza) spinisternata* sp. nov., male hypopygium.
28. *Dolichopeza (Nesopeza) paucispinosa* sp. nov., male hypopygium.
29. *Limonia (Limonia) claggi* sp. nov., male hypopygium.
30. *Limonia (Limonia) synchæta* sp. nov., male hypopygium.
31. *Limonia (Limonia) pleiades* sp. nov., male hypopygium.
32. *Limonia (Limonia) cynotis* sp. nov., male hypopygium.
33. *Limonia (Limonia) prolixicornis* sp. nov., male hypopygium.
34. *Limonia (Limonia) pilosicaudata* sp. nov., male hypopygium.
35. *Limonia (Limonia) pilosicaudata* sp. nov., male hypopygium, ninth tergite.

PLATE 3

- FIG. 36. *Limonia (Limonia) davaoensis* sp. nov., male hypopygium.
37. *Limonia (Limonia) calianensis* sp. nov., male hypopygium.
38. *Limonia (Libnotes) bellula* sp. nov., male hypopygium.
39. *Epiphragma (Polyphragma) fuscinota* sp. nov., male hypopygium.
40. *Epiphragma (Polyphragma) fulvinota* sp. nov., male hypopygium.
41. *Epiphragma (Polyphragma) triarmata* sp. nov., male hypopygium.
42. *Gonomyia (Lipophleps) ptilostenella* sp. nov., male hypopygium.
43. *Gonomyia (Lipophleps) acanthophallus* sp. nov., male hypopygium.
44. *Erioptera perpictula* sp. nov., male hypopygium.
45. *Toxorhina (Toxorhina) dendroidea* sp. nov., male hypopygium.

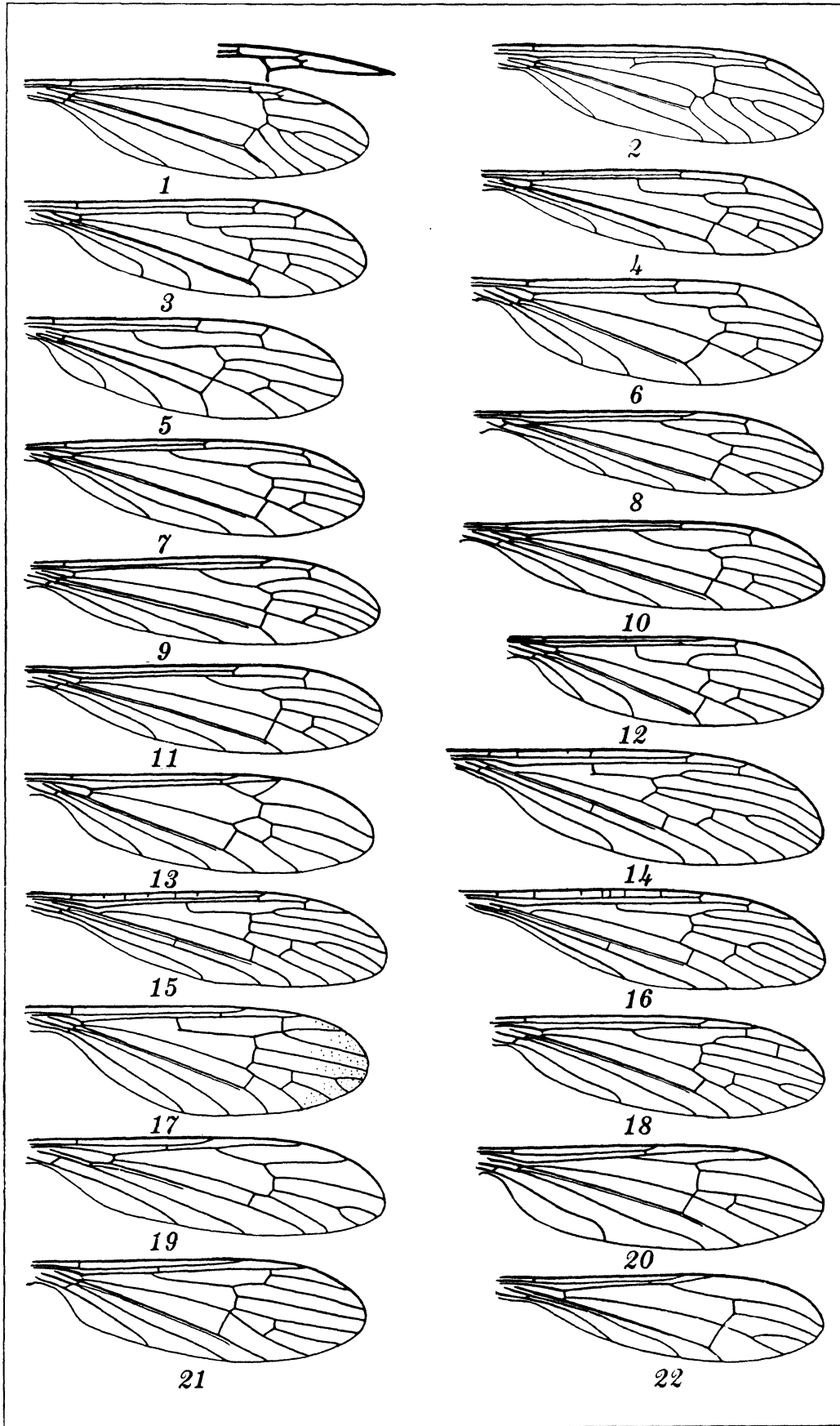


PLATE 1.

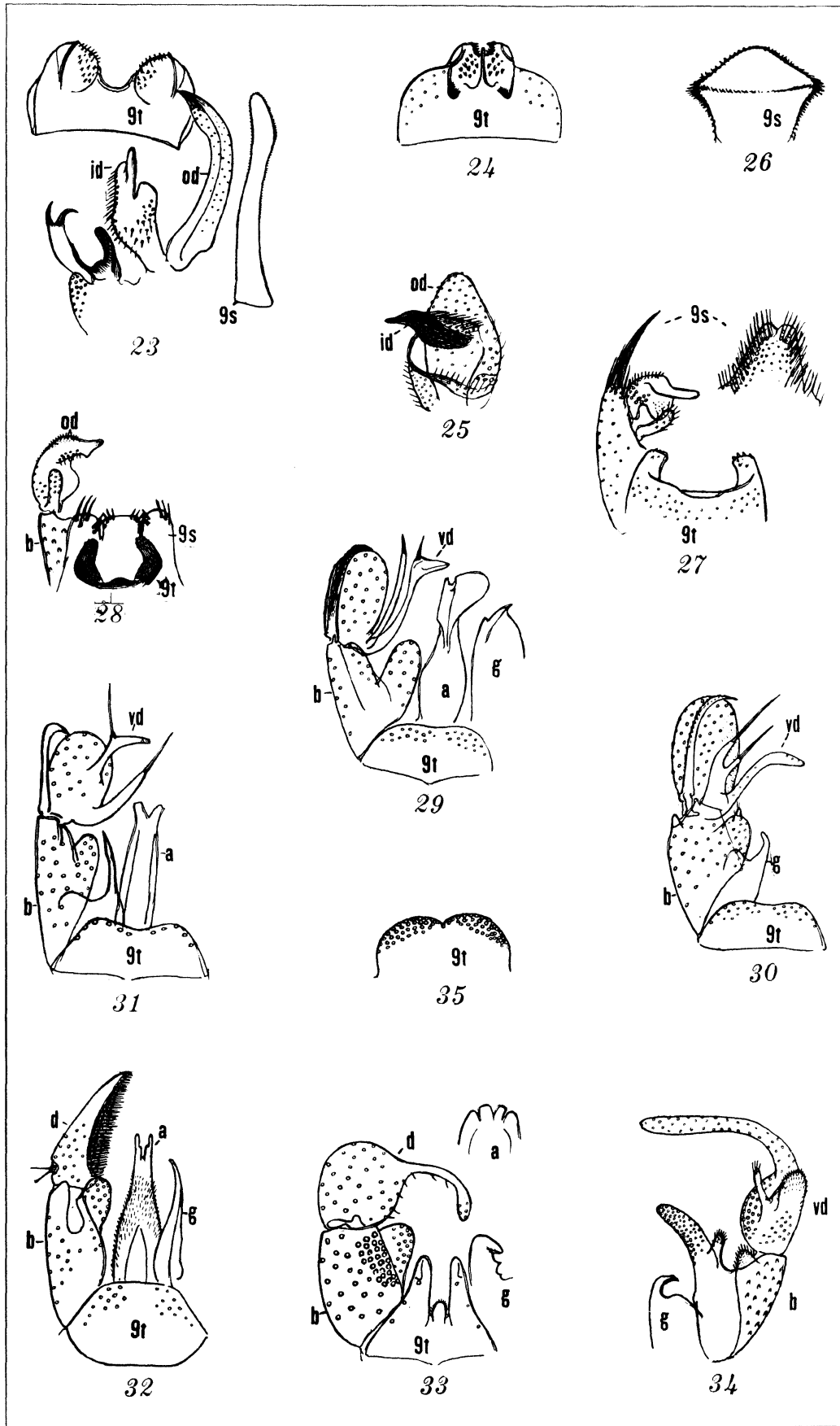


PLATE 2.

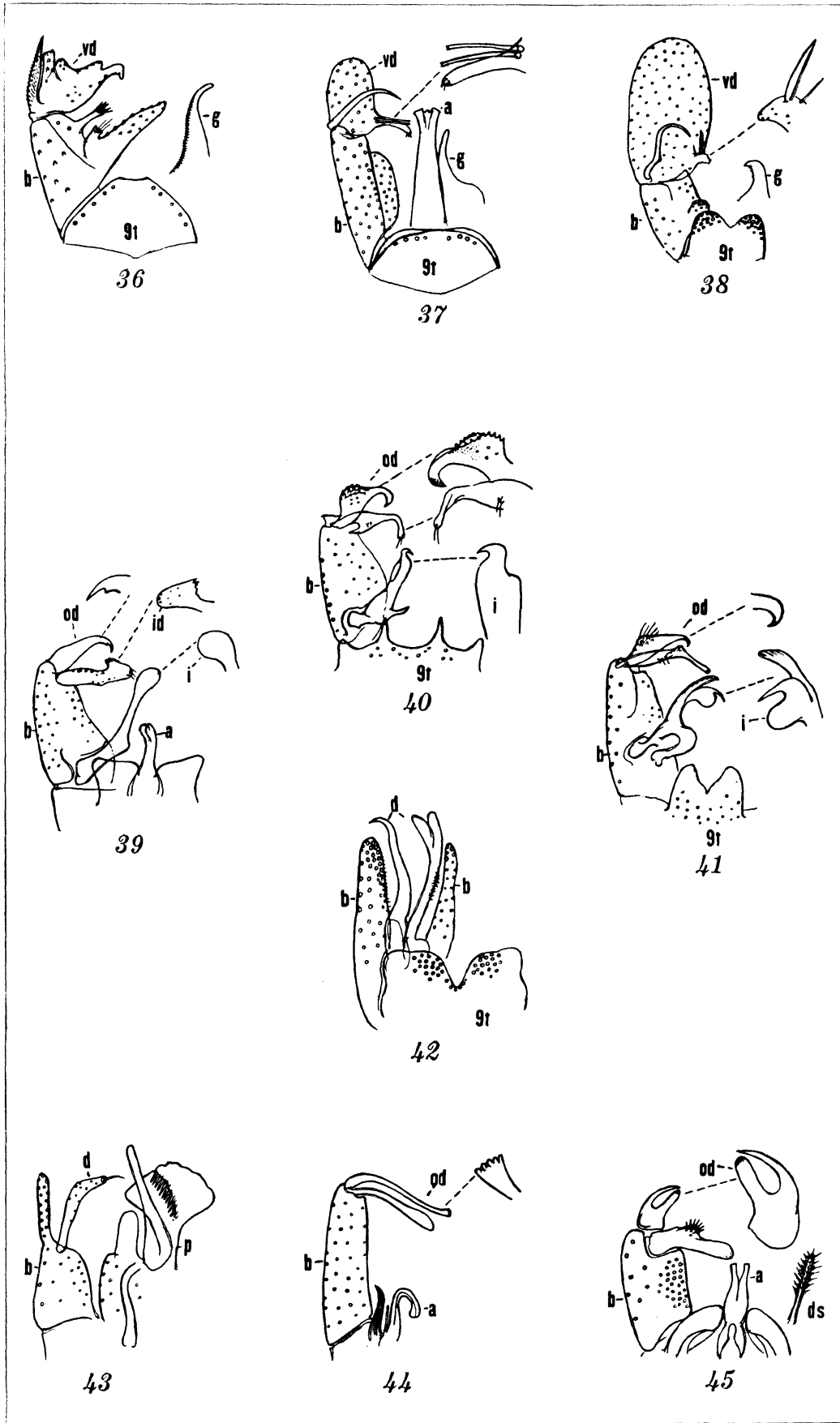


PLATE 3.