

NEW OR LITTLE-KNOWN TIPULIDÆ FROM THE  
PHILIPPINES (DIPTERA), XVII<sup>1</sup>

By CHARLES P. ALEXANDER

*Of Amherst, Massachusetts*

THREE PLATES

The present report on the rich tipulid collections made in the Philippines by my friends Messrs. Charles F. Clagg, Richard C. McGregor, and Francisco Rivera is devoted entirely to species from Luzon and Mindanao. The genera *Trichoneura* and *Troglophila* are added to the record for the Islands. A revised key to the species of *Trentepohlia* is supplied. Especially noteworthy is the large number of additions made to the list of the small and obscure species of the eriopterine genera *Gonomyia* and *Erioptera*. My continued gratitude to the above-mentioned entomologists is heartily extended for the privilege of retaining the types of the novelties in my own collection.

LIMONIINÆ

LIMONIINI

LIMONIA (LIMONIA) LANGUIDA sp. nov. Plate 1, fig. 1; Plate 2, fig. 25.

Allied to *davaoensis*; mesonotal præscutum yellow, with three brown stripes on the posterior portion of disk; pleura with a conspicuous black longitudinal stripe; halteres brownish black; femora brown, the tarsi and distal ends of tibiæ paling to obscure yellow; male hypopygium with the basistyle bearing two very unequal lobes on mesal face; a single complex dististyle; gonapophyses elongate, the outer margin strongly corrugated.

*Male*.—Length, about 3 millimeters; wing, 3.8.

Rostrum and palpi black. Antennæ black throughout; flagellar segments elongate-oval, with short, stout apical pedicels; verticils relatively stout and inconspicuous, shorter than the segments; terminal segment elongate, exceeding one and one-half times the length of the penultimate. Head dark gray.

Mesonotal præscutum chiefly light yellow, with three more or less distinct brown stripes on the posterior two-thirds, the

<sup>1</sup> Contribution from the entomological laboratory, Massachusetts State College.

cephalic third without markings; lateral stripes narrow; lateral margin of sclerite weakly darkened; lobes of scutum darkened; remainder of mesonotum chiefly obscure yellow. Pleura pale yellow, with a narrow but conspicuous longitudinal black stripe, broadest in front, narrowed behind, passing beneath the halteres. Halteres brownish black, the basal fourth of stem light yellow. Legs with coxæ and trochanters very pale yellow, only the fore coxæ a little darker; femora and tibiæ brown, the latter toward their tips, together with tarsi, paling to obscure yellow; claws slender, with a relatively small basal tooth and an elongate seta. Wings (Plate 1, fig. 1) grayish subhyaline, the prearcular and costal regions very weakly infumed; stigma short-oval, darker brown; veins dark brown. Macrotrichia of veins relatively long and conspicuous. Venation:  $Sc_1$  ending about opposite two-fifths the length of  $R_s$ ,  $Sc_2$  not far from its tip; m-cu at fork of M.

Abdomen brownish black, including the hypopygium. Male hypopygium (Plate 2, fig. 25) with the caudal margin of tergite,  $9t$ , broadly and convexly rounded. Basistyle,  $b$ , with a very large flattened ventromesal lobe, in addition to a much smaller, dusky, clavate lobule. Only a single dististyle,  $d$ , is evident in the material on hand, the body divided into two fingerlike lobes that are provided with long coarse setæ, those of the slenderer lobe slightly longer; rostral prolongation elongate, flattened, without evident rostral spines. Gonapophyses,  $g$ , elongate, the outer margin conspicuously corrugated.

LUZON, Tayabas Province, Lucban, January 26, 1931 (*Rivera*); holotype, male.

The general structure of the basistyle, dististyle, and gonapophyses of the male hypopygium shows the present species to be allied to a small group of Philippine species centering about *Limonia* (*Limonia*) *davaoensis* Alexander, such as this latter species and *L. (L.) bilobulifera* Alexander. It differs very evidently in the structure of the male hypopygium, being most similar to *bilobulifera*, but still quite distinct in the details of both venation and hypopygium.

LIMONIA (LIMONIA) ERRATICA sp. nov. Plate 1, fig. 2; Plate 2, fig. 26.

General coloration dark brown, the pleura obscure yellow; anterior vertex silvery; legs black, the tarsi and tips of tibiæ paling to yellow; wings with a strong brown suffusion;  $Sc$  long,  $Sc_1$  ending about opposite four-fifths the length of  $R_s$ ; free tip of  $Sc_2$  lying distad of  $R_2$ ,  $R_{1+2}$  projecting as a long spur beyond

either of these elements; m-cu close to fork of M; abdominal tergites brownish black, the sternites yellowish; male hypopygium with the ventral dististyle fleshy, much larger than the basistyle, the rostral prolongation with two spines; caudal border of tergite weakly bilobed.

*Male*.—Length, 5.5 to 6.3 millimeters; wing, 6 to 7.

Rostrum and palpi black. Antennæ black throughout; flagellar segments long-oval to subcylindrical, the verticils relatively short, less than the segments in length; terminal segment elongate, at apex narrowed into a button. Head blackish, the broad anterior vertex silvery.

Mesonotum and pleurotergite uniformly dark brown. Pleura obscure yellow, the propleura blackened. Halteres brownish black, the base of stem narrowly pale. Legs with the fore coxæ blackened, the remaining coxæ and all trochanters obscure yellow; femora black, slightly brightened at bases; tibiæ brown, their tips and all tarsi paling to obscure yellow; claws relatively small, nearly straight, each with two slender setiform spines at base, the outer one larger. Wings (Plate 1, fig. 2) with a strong brown tinge, the costal region and cell  $Cu_1$  slightly darker; stigma oval, darker brown; veins dark brown. Costal fringe dense but rather short. Venation: Sc long,  $Sc_1$  ending about opposite four-fifths the length of the long Rs, the latter narrowly angulated at origin; free tip of  $Sc_2$  and  $R_2$  both pale, opposite one another, or the latter lying proximad of the former,  $R^{1+2}$  jutting some distance beyond these veins as a spur, provided with trichia; m-cu close to fork of M.

Abdominal tergites and hypopygium brownish black; sternites obscure yellow. Male hypopygium (Plate 2, fig. 26) with the tergite, 9*t*, strongly narrowed apically, the caudal margin gently emarginate, each lobe thus formed with a close group of about eight long coarse setæ. Basistyle, *b*, short and stout, the ventromesal lobe occupying almost the whole mesal face. Ventral dististyle, *vd*, large and fleshy, the rostral prolongation slender, with two spines that are placed close together, these subequal in length to the prolongation itself. Gonapophyses, *g*, very broad, the mesal-apical lobe relatively short, its margin irregularly and weakly roughened but scarcely serrulate.

LUZON, Tayabas Province, Lucban (*Rivera*); holotype, male, January 25, 1931; paratypes, 3 males, January 24–26, 1931; MINDANAO, Cotobato Province, Mount Matutum, April 29, 1932 (*Rivera*); paratypes, 2 males.

In the characters listed in the above diagnosis, *Limonia* (*Limonia*) *erratica* differs widely from the other Philippine species of the subgenus, with the single exception of *L. (L.) melanoptera* sp. nov. The male hypopygium of both of these species is very similar to that of *Dicranomyia* but the unusually long Sc requires the assignment of the flies to *Limonia*. In the projection of vein  $R_{1+2}$  as a spur beyond the level of either  $R_2$  or the free tip of  $Sc_2$  the present fly is distinct from the other Philippine species of the subgenus.

LIMONIA (LIMONIA) MELANOPTERA sp. nov. Plate 1, fig. 3; Plate 2, fig. 27.

General coloration of thorax dark fulvous or brownish yellow; antennæ black, the verticils much shorter than the segments; legs brownish black; wings strongly suffused with blackish, cells C and Sc darker; Sc long,  $Sc_1$  ending just before the fork of Rs;  $R_{1+2}$  not projecting beyond level of  $R_2$ ; abdomen black; male hypopygium with caudal margin of tergite convexly rounded.

*Male*.—Length, about 5 to 5.5 millimeters; wing, 6 to 6.8.

Rostrum and palpi black. Antennæ black throughout, relatively elongate (male); flagellar segments long-oval to subcylindrical, with very short apical necks; segments clothed with a dense abundant erect pubescence and scattered verticils that are only about one-third the length of the segments. Head black; anterior vertex reduced to a capillary line or virtually lacking by approximation of eyes.

Pronotum almost hidden beneath the cephalic margin of præscutum, black. Mesonotal præscutum dark fulvous or brownish yellow, the scutal lobes weakly darkened, especially along their mesal and cephalic edges; scutellum more infuscated, the posterior edge pale. Pleura brownish yellow, polished. Halteres dusky. Legs with coxæ and trochanters obscure yellow; femora brownish black, the narrow bases obscure yellow; tibiæ and tarsi passing into black. Wings (Plate 1, fig. 3) strongly suffused with blackish, cells C and Sc, with the oval stigma, darker brown; veins brownish black. Venation: Sc long,  $Sc_1$  ending just before fork of Rs,  $Sc_2$  at its tip; m-cu at or close to fork of M; cell 1st  $M_2$  relatively small.

Abdomen, including hypopygium, black. Male hypopygium (Plate 2, fig. 27) with the caudal margin of the tergite, 9t, evenly and strongly convex, not bilobed as in *erratica*. Basistyle, b, with two separate ventromesal lobes, the more apical one smaller. Ventral dististyle, vd, large and fleshy, the rostral prolongation with two spines of moderate length.

LUZON, Mountain Province, Benguet, Clark's Place, Camp 66, altitude 7,000 feet, October 6, 1931 (*Rivera*); holotype, male, paratypes, 2 males; Bontoc, Mount Data, altitude 6,000 feet, October 9, 1931 (*Rivera*); paratype, male.

The only regional species of the subgenus that has a somewhat similarly darkened wing pattern and bispinous rostral prolongation of the male hypopygium is *Limonia (Limonia) erratica* sp. nov. The present fly differs in numerous respects, as the more elongate antennæ, with unusually short verticils; dark brownish yellow thorax; blackened tibiæ and tarsi; and in the details of venation and structure of the male hypopygium, as discussed above.

LIMONIA (LIMONIA) PARVISPICULATA sp. nov. Plate 1, fig. 4; Plate 2, fig. 28.

General coloration of præscutum and scutal lobes brownish black, pleura obscure yellow; antennæ black throughout; legs dark brown, the tarsi paler; wings with a brownish tinge; male hypopygium with the ventral dististyle an oval structure, the outer margin narrowly blackened, the rostral prolongation represented only by a small peglike spine that is placed beyond midlength of the style.

*Male*.—Length, about 3.5 millimeters; wing, 4.2.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval, with short stout apical pedicels; longest verticils a trifle shorter than the segments; terminal segment longer than the penultimate, strongly narrowed outwardly. Head blackish, sparsely pruinose; anterior vertex and posterior orbits lighter gray.

Disk of mesonotal præscutum and the scutal lobes brownish black, the lateral portions of the præscutum broadly obscure yellow; posterior sclerites of mesonotum dark brown. Pleura obscure yellow. Halteres blackened, the base of stem restrictively pale. Legs with the coxæ and trochanters obscure yellow; femora and tibiæ dark brown, the tarsi paling to light brown; claws relatively long and slender, with a long narrow basal spine and additional elongate setæ. Wings (Plate 1, fig. 4) with a brownish tinge, the oval stigma only a trifle darker; veins brown. Costal fringe relatively long and conspicuous; macrotrichia of veins basad of cord sparse or lacking, there being none on basal section of  $Cu_1$  or on the anal veins, excepting a single apical one on each of the anals. Venation: Sc relatively short,  $Sc_1$  ending about opposite two-fifths the length of Rs,  $Sc_2$  at its tip; free tip of  $Sc_2$  lying slightly proximad of

R<sub>2</sub>, both elements pale and without macrotrichia; inner end of cell 1st M<sub>2</sub> arcuated; m-cu variable in position, in one wing of type at fork of M, in the opposite wing at near one-third the length of cell.

Abdominal tergites brownish black; basal sternites dusky in color, narrowly margined caudally with paler. Male hypopygium (Plate 2, fig. 28) with the tergite, 9*t*, divided into two broad lobes by a median notch. Basistyle, *b*, relatively slender, the ventromesal lobe small, cushionlike, placed at cephalic end of style. Dorsal dististyle a pale ribbonlike blade that narrows very gradually to the acute tip. Ventral dististyle, *vd*, an oval structure, the outer margin narrowly blackened to apex; no rostral prolongation except a small peglike spine placed beyond midlength of style. Gonapophyses, *g*, with the mesal-apical lobe dusky, its apex unequally bidentate.

LUZON, Tayabas Province, Lucban, January 26, 1931 (*Rivera*); holotype, male.

The very peculiar structure of the ventral dististyle of the male hypopygium readily separates the present fly from the now numerous small regional species of *Limonia*. The structure of the dististyle and the wing venation remotely suggest *Limonia* (*Limonia*) *retrusa* Alexander (Luzon), which differs very evidently in the details of the styli and gonapophyses.

LIMONIA (LIBNOTES) CIRCUMSCRIPTA sp. nov. Plate 1, fig. 5; Plate 2, fig. 29.

Belongs to the *familiaris* group; mesonotum chiefly black, the sides of præscutum broadly deep reddish; knobs of halteres blackened; fore femora black, except the narrow yellow bases; wings whitish subhyaline, the prearcular region extensively and conspicuously pale yellow; costal region and a seam almost around wing margin brown; abdomen, including hypopygium, black; outer rostral spine of male hypopygium unusually long and slender.

*Male*.—Length, about 8 millimeters; wing, 9.3.

Rostrum and palpi black. Antennæ with scape and pedicel black; flagellum broken. Head dull grayish black; anterior vertex reduced to a linear strip.

Pronotum black. Mesonotal præscutum deep reddish, with a single broad black median stripe; remainder of mesonotum black. Pleura chiefly brownish yellow, the dorsal sclerites somewhat darker. Halteres yellow, the knobs blackened. Legs with the coxæ dark reddish brown; trochanters obscure yellow; femora yellow basally, the tips black, on forelegs only the very

narrow bases brightened, on middle and hind legs the coloration of the extensive central portion more brownish, the tips narrowly blackened; tibiæ brownish black; tarsi passing into black. Wings (Plate 1, fig. 5) whitish subhyaline, the prearcular region abruptly and conspicuously pale yellow; cells C and Sc dark brown, about as intense in color as the subcircular stigma; the entire border of wing, excepting the axilla, is broadly and distinctly clouded with brown, broadest at the apex; seams at origin of Rs, along cord and outer end of cell 1st M<sub>2</sub> extremely restricted to almost lacking; cell Cu<sub>1</sub> (between branches of Cu) darkened; veins brown, darker in the clouded areas. Venation: Sc<sub>1</sub> ending beyond the level of the shortened r-m, Sc<sub>2</sub> some distance from its tip but very ill-defined; Rs and basal section of R<sub>4+5</sub> almost in feebly oblique alignment; m-cu about its own length beyond the fork of M; anal veins at base feebly divergent.

Abdominal tergites black, the sternites almost as deeply colored; hypopygium black. Male hypopygium (Plate 2, fig. 29) with the tergite, 9t, deeply notched medially, the setæ marginal. Ventral dististyle, *vd*, large and fleshy, the rostral spines unequal in length and size, the outer one unusually long and straight; rostral prolongation beyond the last spine pendant. Dorsal dististyle stout on more than basal half, strongly curved, the outer portion very slender and acute.

LUZON, Mountain Province, Bontoc, Mount Data, altitude 6,000 feet, October 9, 1931 (*Rivera*); holotype, male.

By Edwards's key to the species of *Libnotes*<sup>2</sup> the present fly runs to couplet 59, disagreeing with the included species and all others in the key and described since its publication by the peculiar wing pattern, as described. The following Philippine species, *Limonia* (*Libnotes*) *melancholica* Alexander, *L. (L.) neofamiliaris* Alexander, *L. (L.) subfamiliaris* Alexander, and *L. (L.) unistriolata* Alexander, all have a somewhat similar type of male hypopygium, but all differ in the uniform nature of the wing pattern, with no prearcular brightening.

LIMONIA (LIBNOTES) RARISSIMA sp. nov. Plate 1, fig. 6; Plate 2, fig. 30.

General coloration yellow, the præscutum with a narrow median brownish black stripe; scutellum and mediotergite blackened; femora black, the narrow bases and tips yellow, the amount subequal at the two ends; tibiæ and tarsi brownish

<sup>2</sup>Journ. Fed. Malay States Mus. 14 (1928) 74-80.

yellow; wings pale yellow, the cord and outer end of cell 1st  $M_2$  conspicuously seamed with brown;  $Sc_2$  elongate; m-cu long; male hypopygium with the ventral dististyle large and fleshy; rostral prolongation with two unequal spines, the outermost stouter, curved toward tip.

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

*Female*.—Length, about 8 millimeters; wing, 8.2.

Rostrum and palpi black, the former one-third the length of the remainder of head. Antennæ (male) greenish black, in life probably clear green; flagellar segments subglobular to short-oval, with short necks; in female, flagellar segments darker in color and more elongate-oval. Head blackish; anterior vertex reduced to a linear strip.

Pronotum black. Mesonotal præscutum obscure yellow, with a single brownish black median stripe; scutal lobes with centers similarly darkened; scutellum black, with indications of a capillary pale median vitta; mediotergite blackened, the cephalic lateral portions more yellowish. Pleura yellow or greenish yellow, in male with restricted darkened areas on anepisternum and before root of halteres. Halteres pale greenish, the knobs more yellowish. Legs with the coxæ and trochanters yellow; only a single leg (fore) remains; femora black, the tips and bases narrowly but conspicuously yellow, the amount subequal on both ends; tibiæ and tarsi brownish yellow, the terminal tarsal segments darkened. Wings (Plate 1, fig. 6) pale yellow, the prearcular region clearer yellow; cells  $C$  and  $Sc$  light brown; a heavy darker brown seamed pattern, as follows: Arcular region, origin of  $Rs$ , cord and outer end of cell 1st  $M_2$ , stigma, and a narrow darkened apical and posterior border; veins brownish black, the prearcular veins yellow. Venation:  $Sc_1$  ending some distance beyond fork of  $Rs$ ,  $Sc_2$  far before its tip;  $Rs$  strongly arcuated; free tip of  $Sc_2$  just before level of  $R_2$ ; cell 1st  $M_2$  long, m longer and more arcuated than the basal section of  $M_3$ ; m-cu before fork of  $M$ , subequal to or slightly longer than the distal section of  $Cu_1$ ; anal veins at bases parallel or slightly divergent.

Abdomen pale yellow. Male hypopygium (Plate 2, fig. 30) with the tergite,  $9t$ , deeply notched, the lateral lobes with conspicuous marginal setæ, the outermost larger and coarser. Ventral dististyle,  $vd$ , large and fleshy; rostrum slender, with two unequal spines, the outer stouter and bent before tip. Gonapo-



physes and basistyles damaged. Ovipositor with cerci slender, gently upcurved to the simple tips.

LUZON, Mountain Province, Benguet, Haight's Place, Pauai, altitude 8,000 feet (*Clagg and Rivera*); holotype, male, October 2, 1931; allotype, female, October 6, 1931; paratype, sex?; Bontoc, Mount Data, altitude 6,000 feet, October 8, 1931 (*Clagg and Rivera*); paratype, a teneral male.

By Edwards's key to the species of the subgenus<sup>3</sup> the present fly runs to couplet 58, disagreeing with both included species in the conspicuous wing pattern. Superficially it is much like *Limonia* (*Libnotes*) *perrara* Alexander, likewise from Pauai, which belongs to an entirely different group of the subgenus.

**LIMONIA (DICRANOMYIA) SORDIDA BREVICULA** subsp. nov.

Closely similar to typical *sordida* (Brunetti), differing especially in the much shorter rostral spines of the male hypopygium. These spines are about one-third the diameter of the rostrum at point of their insertion and are shorter than the longest setæ at apex of the prolongation. In *sordida* the spines are about as long as one-half the diameter of the prolongation and distinctly longer than the setæ.

LUZON, Mountain Province, Benguet, Haight's Place, Pauai, altitude 8,000 feet, October 6, 1931 (*Clagg and Rivera*); holotype, male, allotype, female, paratypes, males and females, October 5 and 6, 1931.

**HELIUS (RHAMPHOLIMNOBIA) BREVINASUS** sp. nov. Plate 1, fig. 7.

General coloration dark brown; rostrum relatively short, black throughout; knobs of halteres infuscated; wings whitish subhyaline, with a conspicuous brown pattern that is not reticulate; inner end of cell 1st  $M_2$  strongly arcuated and pointed; abdominal sternites ringed caudally with silvery.

*Female*.—Length, excluding rostrum, about 6.5 millimeters; wing, 5; rostrum, 0.7.

Rostrum much shorter than in the subgenotype, *reticularis*, black throughout; palpi brown. Antennæ brownish black, the scape and pedicel somewhat more intense. Anterior vertex silvery gray, posterior vertex blackish.

Cervical region and pronotum blackish. Mesonotum chiefly dark brown, the præscutum vaguely more yellowish sublaterally

<sup>3</sup> Loc. cit.

and in the humeral region; median region of scutum somewhat brightened. Pleura brownish black, with indications of a narrow paler stripe on dorsal sternopleurite; pleurotergite somewhat paler, more obscure brownish yellow. Halteres pale, the knobs infuscated. Legs with the coxæ and trochanters blackened; remainder of legs broken. Wings (Plate 1, fig. 7) whitish subhyaline, with cells C and Sc more yellowish; a relatively restricted but conspicuous dark brown pattern that is confined to the vicinity of the veins, as follows: Arculus; origin of Rs; along cord and m; stigmal area, this latter confluent with a cloud at fork of Rs; darkened clouds at end of vein  $R_3$  and near wing apex in outer end of cell  $R_3$ ; paler marginal clouds at ends of veins  $Cu_1$  and 2d A; a very narrow and indistinct brown seaming from wing tip back along margin to vein  $M_4$ ; axillary region clouded; veins dark brown. Venation: r-m nearly its own length before fork of Rs; branches of Rs strongly divergent; inner end of cell 1st  $M_2$  strongly arcuated and pointed; m-cu before fork of M.

Abdominal tergites blackened; a silvery area on intermediate pleural rings opposite posterior half of tergites; sternites brown, darker laterally, the posterior borders narrowly and conspicuously silvery. Ovipositor with the elongate valves yellowish horn color.

MINDANAO, Davao district, Tagum, Madaum River, March 27, 1931, at trap lantern (*Clagg*); holotype, female.

*Helius (Rhampholimnobia) brevinasus* is readily told from *H. (R.) reticularis* (Alexander) by the short rostrum and non-reticulated wing pattern.

#### LECHRIINI

TRICHONEURA (XIPHOLIMNOBIA) BONTOCENSIS sp. nov. Plate 1, fig. 8; Plate 2, fig. 31.

General coloration light to dark brown, the pleura pruinose; antennæ and legs black; wings suffused with brownish; Rs about one-fifth longer than R; male hypopygium with the tergite profoundly split medially; longest dististyle biramous, one arm terminating in a powerful fasciculate seta, the other in numerous small spines.

*Male*.—Length, about 2.5 to 3 millimeters; wing, 3 to 3.8.

Rostrum and palpi black. Antennæ black; flagellar segments elongate oval. Head dark gray.

Mesonotum dark brown, the pleura heavily pruinose with gray. Halteres dusky, the base of stem narrowly brightened.

Legs with the coxæ and trochanters brownish testaceous; remainder of legs brownish black to black. Wings (Plate 1, fig. 8) suffused with brownish; stigmal region not or scarcely darker; veins darker brown. Venation:  $Sc_1$  ending about opposite four-fifths the length of Rs, the latter only about one-fifth longer than R; m-cu shortly beyond midlength of cell 1st  $M_2$ .

Abdomen brownish black; hypopygium obscure yellow. Male hypopygium (Plate 2, fig. 31) with the tergite,  $9t$ , having a deep median notch, the truncated lobes without setæ. Dististyle,  $d$ , terminal including three distinct styli or branches; a short fingerlike lobe that is densely set with stout setæ and more delicate setulæ throughout its length; a slightly more elongate and more slender fingerlike lobe that bears two long setæ at and just before tip, the latter produced beyond the point of insertion of outer seta as a slender point; largest style a powerful arm that is two-branched at apex, one arm smooth, its truncated end further produced into a powerful curved fasciculate seta, the second arm more slender and slightly more elongate, set with numerous spinous points.

LUZON, Mountain Province, Bontoc, Kabunagan, October 11, 1931 (*Rivera*); holotype, male: Tayabas Province, Candelaria, near a small stream, June 25, 1930 (*McGregor and Rivera*); paratypes, 3 males.

The paratypes are much paler than the type, as described, but from the venation and structure of the male hypopygium, are conspecific.

The two known genera of the Lechriini may be separated as follows:

1. Cell 1st  $M_2$  elongate, the basal section of  $M_{1+2}$  subequal in length to Rs; r-m placed about its own length before fork of Rs..... *Lechria* Skuse.  
Cell 1st  $M_2$  of normal size, the basal section of  $M_{1+2}$  less than one-third the length of the long Rs; r-m normally placed, on  $R_{4+5}$  shortly beyond the origin of the latter ..... *Trichoneura* Loew.

Both of the known genera have now been discovered in the Philippines. The two described species of *Lechria* in the Islands have been figured by the writer in an earlier part of this series of papers.<sup>4</sup>

The genus *Trichoneura* is of great interest in that it is one of two genera of Tipulidæ that was first described as a fossil genus and was later found to have living relatives in various

<sup>4</sup> Philip. Journ. Sci. 40 (1929) 261-262, pl. 1, figs. 11, 12.

parts of the Old World. I would recognize three subgenera, which may be separated by the following key:

1. Tibial spurs present (fossil; Baltic Amber, Lower Oligocene).  
*Trichoneura* Loew.
- Tibial spurs lacking ..... 2.
2. Vertex bearing a small pale lobe or cornicle; wings patterned (Ethiopian) ..... *Ceratolimnobia* Alexander.
- Vertex unarmed; wings unmarked (Ethiopian, Oriental).  
*Xipholimnobia* Alexander.

The first recent species of *Trichoneura* to be made known was described as *Lechria nepalensis* Brunetti, from Katmandu, Nepal.<sup>5</sup> No mention is made of the presence of tibial spurs and I believe the fly would pertain to *Xipholimnobia*, as above defined. The second *Xipholimnobia* to be described was *T. (X.) formosensis* (Alexander),<sup>6</sup> from Kanshirei, northern Formosa. The three species of the subgenus in eastern Asia may be separated by the following key:

1. Legs pale yellowish (Nepal) ..... *nepalensis* (Brunetti).
- Legs brown or black ..... 2.
2. Rs unusually long, being more than one-half longer than R alone (Formosa) ..... *formosensis* (Alexander).
- Rs shorter, being approximately one-fifth longer than R (Luzon).  
*bontocensis* sp. nov.

References to the various subgenera and discussion of the position of *Trichoneura* in the tribe Lechriini may be found in two of my papers, in addition to those above cited.<sup>7</sup>

#### HEXATOMINI

*TROGLOPHILA COTABATOENSIS* sp. nov. Plate 1, fig. 9.

General coloration of thorax pale brown; antennæ with scape and pedicel light yellow, flagellum black; flagellar segments (male) elongate, weakly trinodose; legs brownish black; wings whitish subhyaline; Sc very long, Sc<sub>1</sub> ending nearly opposite the outer end of cell 1st M<sub>2</sub>; R<sub>3</sub> running very close to R<sub>1+2</sub>, cell R<sub>2</sub> at base narrow, vein R<sub>2</sub> short; cell 1st M<sub>2</sub> small, vein M<sub>3+4</sub> only about one-half as long as vein M<sub>4</sub> beyond it.

*Male*.—Length, about 3.8 millimeters; wing, 4.8; antenna, about 5.3.

<sup>5</sup> Brunetti, Rec. Indian Mus. 15 (1918) 317-318; Edwards, Rec. Indian Mus. 26 (1924) 301.

<sup>6</sup> Philip. Journ. Sci. 22 (1923) 473-474.

<sup>7</sup> Proc. Linn. Soc. New South Wales 52 (1927) 54-55; Crane-flies of the Baltic Amber (Diptera), Bernstein-Forschungen (Amber Studies) 2 (1931) 54-57, figs. 62-67.

Rostrum yellow; palpi brown. Antennæ with scape and pedicel light yellow, flagellum black; in male, antennæ exceeding the wing in length, as shown by the measurements; flagellar segments elongate-cylindrical to feebly trinodose, with long outspreading setæ at the nodes, these setæ subequal in length to the segments. Eyes very large, reducing the anterior vertex to a linear strip, the inner margin opposite the antennal fossæ conspicuously emarginate. Front light yellow; vertex dark gray.

Thorax uniformly pale brown, the sternopleurite clearer yellow. Halteres chiefly pale. Legs with the coxæ and trochanters yellowish testaceous; remainder of legs brownish black, the femoral bases restrictedly obscure yellow. Wings (Plate 1, fig. 9) whitish subhyaline, the veins and very long macrotrichia dark brown. Venation: Sc of unusual length for a member of this genus, Sc<sub>1</sub> extending to nearly opposite the outer end of cell 1st M<sub>2</sub>, Sc<sub>2</sub> a short distance from its tip; Rs arcuated, much shorter than the petiole of cell R<sub>3</sub>; vein R<sub>3</sub> running very close to R<sub>1+2</sub>, narrowing cell R<sub>2</sub> on its basal portion, vein R<sub>2</sub> being very short; cell 1st M<sub>2</sub> small, the veins issuing from it correspondingly lengthened; M<sub>3+4</sub> about one-half of M<sub>4</sub> alone; m longer than basal section of M<sub>3</sub> m-cu at fork of M; anterior arculus present.

Abdominal tergites and hypopygium dark brown; basal sternites yellow.

MINDANAO, Cotabato Province, Mount Matutum, April 29, 1932 (*Rivera*); holotype, male.

The nearest allies of the present fly are *Troglophila alticola* (Edwards), of Borneo, and *T. ritozanensis* Alexander, of Formosa. The present fly differs especially in the clear wings, with the venational details quite distinct, especially the long Sc, position of vein R<sub>3</sub>, and the relative length of the veins issuing from cell 1st M<sub>2</sub>.

#### ERIOPTERINI

#### Genus TRENTEPOHLIA Bigot

*Trentepohlia* BIGOT, Ann. Soc. Ent. France III 2 (1854) 473.

The last general key to the Philippine species of *Trentepohlia* was one prepared by the writer<sup>8</sup> and included a total of fifteen species. Since the number of known species for the Islands has now doubled, it seems advisable to prepare a revised key to the species of this difficult genus.

<sup>8</sup> Philip. Journ. Sci. 43 (1930) 297-298.

Key to the Philippine species of *Trentepohlia* Bigot.

1. Wings with vein  $R_3$  completely atrophied..... 2.  
 Wings with vein  $R_3$  preserved..... 4.
2. Wings with cell 1st  $M_2$  closed; three outer medial veins,  $M_{1+2}$ ,  $M_3$ , and  $M_4$  (not yet recorded from the Philippines; known from Borneo and Sumatra)..... Subgenus *Plesiomongoma* Brunetti.  
 Wings with cell 1st  $M_2$  open by the atrophy of  $m$  and the two distal sections of  $M_3$ ; two outer medial veins,  $M_{1+2}$  and  $M_4$ .  
 Subgenus *Anchimongoma* Brunetti 3.

Subgenus *Anchimongoma* Brunetti

3. Legs with the genua white, the color involving the femoral tips and tibial bases (Mindanao)..... *apoicola* Alexander.  
 Legs with the femora and tibiae uniformly darkened (Mindanao).  
*beata* Alexander.
4. Wings with veins  $Cu_1$  and 1st  $A$  fused for a distance back from the margin; cell 1st  $M_2$  open or closed; if the latter, with three outer medial veins,  $M_{1+2}$ ,  $M_3$ , and  $M_4$  ..... 7.  
 Wings with veins  $Cu_1$  and 1st  $A$  entirely separate at margin; cell 1st  $M_2$  closed, two outer medial veins,  $M_{1+2}$  and  $M_4$ .  
 Subgenus *Paramongoma* Brunetti 5.

Subgenus *Paramongoma* Brunetti

5. Tibiae white (Mindanao)..... *chionopoda* Alexander.  
 Tibiae dark brown to black..... 6.
6. Tips of femora narrowly but conspicuously whitened (Luzon).  
*banahaoensis* Alexander.  
 Femora with tips uniformly darkened (Mindanao; Sunda Islands).  
*pusilla* Edwards.
7. Wings with cell 1st  $M_2$  closed; three outer medial veins,  $M_{1+2}$ ,  $M_3$ , and  $M_4$  .....: Subgenus *Mongoma* Westwood 8.  
 Wings with cell 1st  $M_2$  open by the atrophy of  $m$  and the two distal sections of  $M_3$ ; the outer medial veins,  $M_{1+2}$  and  $M_4$ .  
 Subgenus *Trentepohlia* Bigot 26.

Subgenus *Mongoma* Westwood

8. Tips of femora abruptly and conspicuously white, the genua thus brightened ..... 9.  
 Femora either uniformly darkened, or uniformly pale, or pale with the tips narrowly blackened, the genua not at all brightened..... 13.
9. Crossvein  $m-cu$  at or beyond midlength of cell 1st  $M_2$  (Luzon).  
*duyagi* Alexander.  
 Crossvein  $m-cu$  at or before the fork of  $M$ ..... 10.
10.  $R_3$  strongly arcuated, subperpendicular at origin, cell  $R_3$  thus widened at base (Luzon) ..... *saxatilis* Alexander.  
 $R_3$  not so strongly arcuated at origin, diverging gradually from  $R_4$ , cell  $R_3$  not conspicuously widened at base..... 11.

11. Mesonotal præscutum orange fulvous, narrowly darkened laterally (Mindanao) ..... *æquialba* Alexander.  
 Mesonotal præscutum dark brown..... 12.
12. Wings with cells C and Sc undarkened, similar in coloration to remainder of wing; tibiæ uniformly pale (Luzon, Negros, Mindanao).  
*tenera* (Osten Sacken).  
 Wings with cells C and Sc strongly infumed, darker than remainder of wing; tibiæ brown, the tips whitened (Mindanao).  
*teneroides* Alexander.
13. Mid-tibiæ with distal ends white, conspicuously feathered with long outspreading white setæ (Luzon, Leyte, Negros, Mindanao; Austromalayan) ..... *pennipes* (Osten Sacken).  
 Mid-tibiæ normal, similar to other tibiæ..... 14.
14. At least the fore tibiæ either uniform in color throughout their length, pale or dark, or else pale with the tips black..... 15.  
 All tibiæ with the tips whitened (Mindanao).  
*alboterminalis* Alexander.
15. At least the fore tibiæ pale, with the tips abruptly blackened..... 16.  
 Tibiæ uniform in color, either dark or pale throughout..... 19.
16. Tibiæ of all legs approximately alike in color..... 17.  
 Tips of fore tibiæ abruptly black, of the posterior tibiæ even more broadly snowy white (Luzon)..... *luzonensis* Edwards.
17. Tibiæ and basitarsi yellow, their extreme bases, as well as their tips, blackened; m-cu about one-half its length beyond the fork of M (Luzon)..... *ricardi* Alexander.  
 Tibiæ and basitarsi not abruptly blackened at bases; m-cu at or before the fork of M..... 18.
18. Mesonotal præscutum polished black, the humeral region yellow; a dark area on anepisternum; abdominal tergites blackened (Mindanao).  
*æquinigra* Alexander.  
 Mesonotal præscutum yellow, in cases restrictedly darkened at suture; pleura uniformly pale; abdominal tergites yellow, with a narrow, more or less interrupted dorsomedian dark stripe (Mindanao).  
*majuscula* Alexander.
19. General coloration of body, legs, and wings pale yellow (Luzon, Mindanao; northern Australia)..... *poliocephala* Alexander.  
 General coloration of body, legs, and wings not pale yellow..... 20.
20. Mesonotal præscutum light yellow, with a median black line that broadens out behind (Luzon)..... *lætithorax* sp. nov.  
 Mesonotal præscutum not colored as above..... 21.
21. Wings with m-cu at or beyond one-third the length of cell 1st M<sub>2</sub> (Mindanao) ..... *distalis* Alexander.  
 Wings with m-cu at or before the fork of M..... 22.
22. Wings conspicuously patterned with brown, including broad seams on Rs and posterior cord; tarsi black (Mindanao).... *carbonipes* sp. nov.  
 Wings immaculate, except for the more or less distinct stigmal darkening; tarsi paling to yellow or whitish..... 23.

23. Wings with cell  $R_5$  longer than  $M_3$ ; fusion between veins  $R_5$  and  $M_{1+2}$  relatively short, less than the second section of vein  $M_{1+2}$  ..... 24.  
 Wings with cells  $R_5$  and  $M_3$  subequal; fusion of veins  $R_5$  and  $M_{1+2}$  long, exceeding twice the second section of  $M_{1+2}$ ..... 25.
24. Mesonotum yellowish brown, somewhat darker medially; pleura obscure yellow, the dorsal portions dark brown; apical fusion of veins  $Cu_1$  and 1st A conspicuous (Luzon)..... *brevifusa* Alexander.  
 Mesonotum uniformly dark brown, the ventral pleurites paler; apical fusion of veins  $Cu_1$  and 1st A very slight to almost lacking (Mindanao) ..... *persimilis* Alexander.
25. Mesonotal præscutum uniformly dark brown; cells C and Sc infumed, darker than the remainder of wing; cell  $R_2$  at margin wide, exceeding one-half that of cell  $R_3$  (Luzon)..... *riverai* Alexander.  
 Mesonotal præscutum light fulvous yellow; cells C and Sc pale yellow, not infumed; cell  $R_2$  at margin narrower, less than one-third cell  $R_3$  (Mindanao) ..... *fulvinota* Alexander.

Subgenus *Trentepohlia* Bigot

26. Tips of femora abruptly whitened (Luzon)..... *bakeri* Alexander.  
 Femora either uniformly pale in color, or pale with the tips narrowly blackened ..... 27.
27. Tips of femora and tibiæ conspicuously blackened; wings yellow, unmarked except for a narrow seam on vein  $R_3$  (Luzon; Borneo, Java, Sumatra) ..... *mcgregori* Alexander.  
 Femora uniformly pale in color; wings not patterned as above..... 28.
28. Wings almost immaculate, the costal border broadly suffused with yellow (Sibuyan) ..... *holoxantha* Alexander.  
 Wings with a conspicuous brown pattern..... 29.
29. Abdomen entirely black (Luzon, Negros, Mindanao; Austromalayan).  
*pictipennis* Bezzi.  
 Abdomen with basal segments reddish, the terminal segments blackened. 30.
30. Wings heavily patterned with brown, the entire cephalic half infuscated, variegated only by four or five small white areas, the last one of which is at apex; wing base conspicuously dark brown (Mindanao).  
*lætippennis* Alexander.  
 Wings with entire costal border pale yellow, the tip abruptly darkened, without pale spot; no darkening at wing base (Luzon, Negros, Mindanao; Oriental, Austromalayan)..... *trentepohlii* (Wiedemann).

The species of *Trentepohlia*, as they are now known from the Philippines, with references to their occurrence in the Islands, are as follows:

- Trentepohlia* (*Anchimongoma*) *apoicola* Alexander; ALEXANDER, Philippines, XII, Philip. Journ. Sci. 46 (1931) 475-476, pl. 1, fig. 22.  
*Trentepohlia* (*Anchimongoma*) *beata* Alexander; ALEXANDER, Philippines, XIV, Philip. Journ. Sci. 48 (1932) 46-47, pl. 1, fig. 22.  
*Trentepohlia* (*Paramongoma*) *banahaoensis* Alexander; ALEXANDER, Philippines, VI, Philip. Journ. Sci. 41 (1930) 308-309, pl. 1, fig. 15.  
*Trentepohlia* (*Paramongoma*) *chionopoda* Alexander; ALEXANDER, Philippines, XII, Philip. Journ. Sci. 46 (1931) 469-470.



- Trentepohlia* (*Paramongoma*) *pusilla* Edwards; EDWARDS, Treubia 9 (1927) 356; ALEXANDER, Philippines, XII, Philip. Journ. Sci. 46 (1931) 470.
- Trentepohlia* (*Mongoma*) *æquialba* Alexander; ALEXANDER, Philippines, XII, Philip. Journ. Sci. 46 (1931) 470-471, pl. 1, fig. 18.
- Trentepohlia* (*Mongoma*) *æquinigra* Alexander; ALEXANDER, Philippines, XII, Philip. Journ. Sci. 46 (1931) 472-473, pl. 1, fig. 19.
- Trentepohlia* (*Mongoma*) *alboterminalis* Alexander; ALEXANDER, Philippines, XIV, Philip. Journ. Sci. 48 (1932) 46, pl. 1, fig. 21.
- Trentepohlia* (*Mongoma*) *brevifusa* Alexander; ALEXANDER, Philippines, VII, Philip. Journ. Sci. 43 (1930) 300-301, pl. 1, fig. 18.
- Trentepohlia* (*Mongoma*) *carbonipes* sp. nov.; this report.
- Trentepohlia* (*Mongoma*) *distalis* Alexander; ALEXANDER, Philippines, XI, Philip. Journ. Sci. 46 (1931) 284-285, pl. 1, fig. 15.
- Trentepohlia* (*Mongoma*) *duyagi* Alexander; ALEXANDER, Philippines, VII, Philip. Journ. Sci. 43 (1930) 298-299, pl. 1, fig. 16.
- Trentepohlia* (*Mongoma*) *fulvinota* Alexander; ALEXANDER, Philippines, XVI, Philip. Journ. Sci. 49 (1932) 272-273, pl. 1, fig. 21.
- Trentepohlia* (*Mongoma*) *lætithorax* sp. nov.; this report.
- Trentepohlia* (*Mongoma*) *luzonensis* Edwards; EDWARDS, Notulæ Entomologicae 6 (1926) 37-38; ALEXANDER, Philippines, V, Philip. Journ. Sci. 40 (1929) 265-266, pl. 1, fig. 13.
- Trentepohlia* (*Mongoma*) *majuscula* Alexander; ALEXANDER, Philippines, XII, Philip. Journ. Sci. 46 (1931) 473-474, pl. 1, fig. 20.
- Trentepohlia* (*Mongoma*) *pennipes* (Osten Sacken); OSTEN SACKEN, Berlin. Ent. Zeitschr. 31 (1887) 204; BEZZI, Philip. Journ. Sci. § D 12 (1917) 115; EDWARDS, Notulæ Entomologicae 6 (1926) 37; ALEXANDER, Philippines, IV, Philip. Journ. Sci. 33 (1927) 303.
- Trentepohlia* (*Mongoma*) *persimilis* Alexander; ALEXANDER, Philippines, XIV, Philip. Journ. Sci. 48 (1932) 45-46.
- Trentepohlia* (*Mongoma*) *poliocephala* Alexander; ALEXANDER, Philippines, V, VI, Philip. Journ. Sci. 40 (1929) 266-267, pl. 1, fig. 14; 41 (1930) 310-311.
- Trentepohlia* (*Mongoma*) *ricardi* Alexander; ALEXANDER, Philippines, VI, Philip. Journ. Sci. 41 (1930) 309-310, pl. 1, fig. 16.
- Trentepohlia* (*Mongoma*) *riverai* Alexander; ALEXANDER, Philippines, VII, Philip. Journ. Sci. 43 (1930) 299-300, pl. 1, fig. 17.
- Trentepohlia* (*Mongoma*) *saxatilis* Alexander; ALEXANDER, Philippines, V, Philip. Journ. Sci. 40 (1929) 267-269, pl. 1, fig. 15.
- Trentepohlia* (*Mongoma*) *tenera* (Osten Sacken); OSTEN SACKEN, Berlin. Ent. Zeitschr. 26 (1882) 89; ALEXANDER, Philippines, IV, Philip. Journ. Sci. 33 (1927) 302-303.
- Trentepohlia* (*Mongoma*) *teneroides* Alexander; ALEXANDER, Philippines, XVI, Philip. Journ. Sci. 49 (1932) 273-274, pl. 1, fig. 22.
- Trentepohlia* (*Trentepohlia*) *bakeri* Alexander; ALEXANDER, Philippines, IV, V, Philip. Journ. Sci. 33 (1927) 304-305, pl. 2, fig. 15; 40 (1929) 269.
- Trentepohlia* (*Trentepohlia*) *holoxantha* Alexander; ALEXANDER, Philippines, V, Philip. Journ. Sci. 40 (1929) 269-270, pl. 1, fig. 16.
- Trentepohlia* (*Trentepohlia*) *lætispennis* Alexander; ALEXANDER, Philippines, XII, Philip. Journ. Sci. 46 (1931) 474-475, pl. 1, fig. 21.

*Trentepohlia (Trentepohlia) mcgregori* Alexander; ALEXANDER, Philippines, IV, Philip. Journ. Sci. 33 (1927) 303-304, pl. 2, fig. 12.

*Trentepohlia (Trentepohlia) pictipennis* Bezzi; BEZZI, Philip. Journ. Sci. § D 12 (1917) 115; EDWARDS, Notulæ Entomologicæ 6 (1926) 37.

*Trentepohlia (Trentepohlia) trentepohlii* (Wiedemann); WIEDEMANN, Aussereur. zweifl. Ins. 1 (1828) 551; ALEXANDER, Philippines, IV, Philip. Journ. Sci. 22 (1927) 303.

The roman numerals with the various Alexander references given above refer to the various parts of the Philippine series of papers.

**TRENTEPOHLIA (MONGOMA) CARBONIPES** sp. nov. Plate 1, fig. 10.

Mesonotal præscutum light fulvous brown, the mediotergite and pleura abruptly dark brown; legs black, the femoral bases restrictedly yellow; wings tinged with grayish brown, cells C and Sc more brownish yellow; stigma and conspicuous seams on certain veins brown; wing apex slightly darkened; less distinct brown seams on outer end of cell 1st  $M_2$ ; Rs short, subequal to basal section of  $R_5$  and the cephalic face of cell 1st  $M_2$ .

*Female*.—Length, about 8 millimeters; wing, 8.3.

Rostrum testaceous; palpi dark brown. Antennæ brownish black throughout; flagellar segments cylindrical, with very short verticils. Head dark.

Pronotum and mesonotal præscutum light fulvous brown; scutal lobes dark brown; scutellum obscure yellow, the center of disk at base dark brown; mediotergite dark brown. Pleura uniformly dark brown, only the meral region paler. Halteres infuscated, the base of stem restrictedly yellow. Legs with the coxæ brownish; trochanters yellow; remainder of legs black, only with the femoral bases very restrictedly yellowish; legs without specially modified spines or setæ. Wings (Plate 1, fig. 10) tinged with grayish brown; cells C and Sc, together with the abbreviated prearcular region, more brownish yellow; stigma triangular, dark brown; certain veins with conspicuous brown seams, as follows: Arcular and axillary regions, Rs and posterior cord, radial veins beyond stigma; wing apex darkened; less distinct brown seams on outer end of cell 1st  $M_2$ . Venation: Rs short, subequal to basal section of  $R_5$  and the cephalic face of cell 1st  $M_2$  ( $R_5 + M_{1+2}$ );  $R_2$  just before base of cell  $R_3$ ; inner ends of cells  $R_5$  and  $M_3$  about in transverse alignment; m-cu at fork of M; apical fusion of veins  $Cu_1$  and 1st A slight.

Abdominal segments indistinctly bicolorous, dark brown, the bases of the segments slightly paler.

MINDANAO, Cotabato Province, Mount Matutum, April 12, 1932 (*Rivera*); holotype, female.

*Trentepohlia (Mongoma) carbonipes* is abundantly different from all other Philippine species of the subgenus in the black legs and conspicuously patterned wings. By Edwards's synopsis of the Oriental and Australasian species of *Mongoma*<sup>9</sup> the fly runs to *T. (M.) sarawakensis* Edwards (Borneo), a very different fly that has the femoral tips pale and the thorax uniformly brownish ochereous.

TRENTEPOHLIA (MONGOMA) LÆTITHORAX sp. nov. Plate 1, fig. 11.

Mesonotal præscutum light yellow, with a conspicuous black median line that widens behind; posterior portion of mediotergite obscure yellow; dorsal pleurites black, the sternopleurite yellow; legs light brown; wings grayish subhyaline, the outer costal region and stigma brown; cell  $R_2$  at wing margin narrower than at base; proximal end of cell  $M_3$  lying proximad of cell  $R_5$ ; abdomen black.

*Male*.—Length, about 5.5 millimeters; wing, 6.

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

Rostrum, palpi, and antennæ black; flagellar segments of latter long-oval, with short verticils. Head dark gray.

Mesonotal præscutum clear yellow, with a very conspicuous median black line, narrowest in front, behind the level of the pseudosutural foveæ widened out, crossing the suture and including all of the scutum except the cephalic-lateral portions of the scutal lobes, which are light yellow; region of pseudosutural foveæ and extreme lateral margin of præscutum narrowly infuscated; scutellum black; mediotergite with slightly more than the cephalic half black, the posterior portion obscure yellow, divided by a capillary black median vitta. Pleura with the dorsal sclerites blackened, the sternopleurite yellow. Halteres faintly tinged with dusky, especially the knobs. Legs with the coxæ testaceous yellow, the fore coxæ and bases of mid-coxæ slightly more infumed; trochanters yellow; remainder of legs almost uniformly light brown; fore femora with a series of from six to eight strong bristles near base. Wings (Plate 1, fig. 11) grayish subhyaline, the outer costal region and stigma brown; wing apex narrowly and insensibly infumed; veins dark brown. Venation:  $R_3$  diverging strongly from  $R_4$ , cell  $R_2$  at margin narrower than at proximal end; proximal end of cell  $M_3$  lying basad of that of

<sup>9</sup> Journ. Fed. Malay States Mus. 14 (1928) 110-111.

cell  $R_5$ ; apical fusion of veins  $Cu_1$  and 1st A slight; cell 2d A wide.

Abdomen, including hypopygium, black.

LUZON, Tayabas Province, Lucban (*Rivera*); holotype, male, January 25, 1931; allotype, female, January 22, 1931; paratype, female, January 26, 1931.

GONOMYIA (PTILOSTENA) COTABATOENSIS sp. nov. Plate 1, fig. 12; Plate 2, fig. 32.

Thoracic dorsum chiefly dark brown; basal two segments of antennæ more or less yellow; legs yellow, the tips of tibiæ and outer tarsal segments darkened; wings tinged with yellow, unmarked except for the small brown stigma; veins  $R_{1+2}$  and  $R_3$  contiguous at margin; male hypopygium with the inner dististyle terminating in two powerful blackened spikelike points, directed laterad at a right angle to apex of lobe; ædeagus entirely pale, the slightly expanded outer end with abundant black setulæ.

*Male*.—Length, about 4.5 millimeters; wing, 4.2.

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

Rostrum and palpi black. Antennæ with scape dark beneath, lined with yellow above; pedicel chiefly light yellow; flagellum brownish black throughout; flagellar segments fusiform, with long conspicuous verticils. Head obscure brownish yellow, the center of vertex dusky.

Pronotum and anterior lateral pretergites light yellow. Mesonotal præscutum chiefly dark brown, with a median plumbeous gray stripe, the lateral borders pale yellow; posterior sclerites of notum chiefly dark brown, the posterior border of scutellum broadly obscure yellow. Pleura almost uniformly pale brown, the dorsal sclerites darker. Halteres dusky. Legs with the coxæ and trochanters yellowish testaceous; remainder of legs light yellow, the tips of the tibiæ very narrowly but conspicuously brownish black; tarsi blackened. Wings (Plate 1, fig. 12) tinged with yellow, the costal region clear light yellow; stigma small, subcircular, dark brown; veins pale brown, the extreme base of  $R_s$  and the cord darker brown; veins C and  $Sc$  more yellowish. Venation:  $Sc_1$  ending about opposite one-third the length of the strongly arcuated  $R_s$ ; distal end of  $R_1$  running very close to costa, at tip confluent with  $R_3$ ; m-cu about one and one-half times its length before the fork of M.

Abdominal tergites weakly bicolorous, the basal portions on sides obscure yellow, the caudal portions dark brown, more or less distinctly divided medially by a pale line; sternites clear light yellow. Male hypopygium (Plate 2, fig. 32) with the inner dis-

tistyle, *id*, blackened at tip and produced laterad into two strong spikelike spines, with a smaller erect black spine at apex. Outer style, *od*, a long pale sinuous rod. Branches of intermediate style blackened along margin. There is evidently still another branch or style, partly broken in the type, here represented by a broad, pale flattened blade. *Ædeagus*, *a*, slender at base, a little expanded toward apex, entirely pale; outer expanded portion set with abundant microscopic setulæ.

MINDANAO, Cotabato Province, Makar, Nupol, March 30, 1932 (*Rivera*); holotype, male; Covell, Buayan, March 25, 1932 (*Rivera*); allotype, female; Mount Matutum, April 9, 1932 (*Rivera*); paratype, male.

*Gonomyia* (*Ptilostena*) *cotabatoensis* is very different from the two species of the subgenus hitherto reported from the Philippines (*metatarsata* de Meijere and *punctipennis* Edwards), differing from the former in the uniformly pale yellow femora, and from the latter in the unspotted wings and very different structure of the male hypopygium. It is also quite distinct from the far more numerous species of the subgenus now known from Japan, Formosa, and eastern China.

GONOMYIA (PTILOSTENA) METATARSATA ATROPHIA subsp. nov. Plate 1, fig. 13.

*Female*.—Length, about 6 millimeters; wing, 5; foreleg, tibia, 4.6, basitarsus, 2.8.

Characters as in typical *metatarsata* de Meijere (India to Java), differing especially in the intense blackened tips of the femora and the partly atrophied vein  $R_4$  of the wings.

Legs yellow, the tips of all femora narrowly but very conspicuously blackened; tibiæ similar, the tips more narrowly blackened. Wings (Plate 1, fig. 13) narrow; most of vein  $R_4$  atrophied, in the type with only a basal spur that is a little longer than  $R_3$ , with three macrotrichia on spur; cell 2d A much wider than indicated by de Meijere's figure of the typical form.<sup>10</sup> Abdomen of type female uniformly blackened, only the genital region paler.

LUZON, Tayabas Province, Lucban, January 29, 1931 (*Rivera*); holotype, female.

The exact status of this fly is still in question. The partly atrophied condition of vein  $R_4$  of the wings is apparently a normal one, inasmuch as it was reported also by Edwards in a male specimen from Dumaguete, Negros.<sup>11</sup>

<sup>10</sup> Tijds. voor Entom. 54 (1911) pl. 3, fig. 35.

<sup>11</sup> Notulæ Entomologicæ 6 (1926) 37, as *metatarsata*.

GONOMYIA (GONOMYIA) PAUAIENSIS sp. nov. Plate 1, fig. 14; Plate 2, fig. 33.

Belongs to the *subcinerea* group; mesonotum brownish black, the median area of scutum and the scutellum yellow; antennæ and legs black; wings faintly tinged with brown, the stigmal region darker; Sc<sub>1</sub> ending about opposite one-fifth the length of Rs; male hypopygium with the dististyle a flattened blade that bears a single powerful black spine on outer margin, the broad apex of style terminating in two setæ.

*Male*.—Length, about 4.5 millimeters; wing, 5.3.

*Female*.—Length, about 6 millimeters; wing, 5.8.

Rostrum brownish black; palpi black. Antennæ black throughout, relatively elongate, especially in female. Head dark gray, brighter on occiput.

Pronotum orange-yellow. Anterior lateral pretergites light yellow. Mesonotal præscutum brownish black, sparsely pruinose, the humeral region restrictedly brightened; scutal lobes black, the median region obscure yellow; separated from the deep yellow scutellum by a narrow blackish line crossing the posterior border; mediotergite black, pruinose. Pleura and pleurotergite almost entirely pale yellow, variegated by blackish gray on the anepisternum and sternopleurite. Halteres elongate, dusky, the base of stem yellow, the knobs obscure brownish yellow to pale brown. Legs with the coxæ brown, more or less yellow apically; trochanters brown; remainder of legs black. Wings (Plate 1, fig. 14) with a faint brown tinge, the stigmal region darker; veins brownish black. Costal fringe of male moderate in length. Venation: Sc<sub>1</sub> ending about opposite one-fifth the length of Rs, Sc<sub>2</sub> a short distance from its tip; m-cu at fork of M.

Abdominal tergites dark brown, sternites brownish yellow. Male hypopygium (Plate 2, fig. 33) with the tergite, 9*t*, deeply bilobed, each lobe with a lateral pencil of setæ. Shorter apical lobe of basistyle, *b*, relatively small, pale, with several elongate setæ that about equal the lobe in length; longer lobe of basistyle, *b*, fleshy, the apex a little dilated into a blade, the mesal edge of which is without setæ. Dististyle, *d*, with a powerful curved black spine on outer margin at near midlength, this with a single seta at near one-third the length; body of style terminating in two fasciculate setæ, the disk with about five setæ on one face and eight on the other. Ædeagus, *a*, subtended by two very unequal spines, the longest of which is blackened along edge, the short one a small pale spike.

LUZON, Mountain Province, Benguet, Haight's Place, Pauai, altitude 8,000 feet, October 6, 1931 (*Clagg and Rivera*); holotype, male; allotype, female.

*Gonomyia* (*Gonomyia*) *pauaiensis* is very similar to other species of the subgenus in Formosa and the Philippines, differing in the structure of the male hypopygium, especially the conformation of the dististyle. By my key to the Philippine species of *Gonomyia*<sup>12</sup> the fly runs to *G. (G.) nebulicola* Alexander (Mindanao), at that time the only member of the subgenus known from the Islands.

GONOMYIA (GONOMYIA) GRATILLA sp. nov. Plate 1, fig. 15; Plate 2, fig. 34.

Belongs to the *subcinerea* group; general coloration of mesonotum dark brown; pleura chiefly pale, the anepisternum darker; rostrum obscure yellow; legs brownish black; wings grayish subhyaline; stigma pale brown, faintly indicated; Sc<sub>1</sub> ending opposite origin of Rs; cell 1st M<sub>2</sub> narrow; male hypopygium with the dististyle bearing a small fingerlike lobe near base; outer portion of style narrowed to an acute black point, on outer face before tip with two strong fasciculate setæ; phallosome with ædeagus narrow; pale; two slender pale apophyses, one shorter and very acute.

*Male*.—Length, about 3 millimeters; wing, 3.5.

Rostrum obscure yellow, palpi black. Antennæ black; flagellar segments elongate, with abundant dense erect setæ. Head dark gray.

Anterior lateral pretergites obscure yellow. Mesonotal præscutum dark brown medially, somewhat paler on sides; median region of scutum obscure yellow; scutellum obscure yellowish testaceous; mediotergite brown. Pleura chiefly pale, the anepisternum darker. Halteres relatively elongate, dark brown, the base of stem pale. Legs with the coxæ obscure yellow, the fore coxæ darker; trochanters obscure yellow; remainder of legs brownish black. Wings (Plate 1, fig. 15) grayish subhyaline; stigma pale brown, faintly indicated; veins brown; macrotrichia long and abundant, black. Venation: Sc<sub>1</sub> ending opposite origin of Rs; r-m long, gently arcuated, placed at or just before fork of Rs, in alignment with R<sub>5</sub>, the basal deflection of the latter obliterated; m-cu at fork of M; cell 1st M<sub>2</sub> narrow.

<sup>12</sup> Philip. Journ. Sci. 48 (1932) 615-617.

Abdomen dark brown; hypopygium obscure yellow. Male hypopygium (Plate 2, fig. 34) with the outer lobe of basistyle, *b*, a little expanded on mesal portion. Dististyle, *d*, with a slender fingerlike lobe near base, this tipped with a single strong seta; outer portion of style slender, blackened, narrowed to an acute point, before apex on outer face with two strong fasciculate setæ arising close together, the outermost only about two-thirds the length of the inner or lower seta. Phallosome, *p*, consisting of the unusually narrow, pale ædeagus, and two unequal pale apophyses, one shorter and much slenderer than the second, needlelike.

MINDANAO, Davao district, Tagum, Madaum River, at trap lantern, May 27, 1931 (*Clagg*); holotype, male; allotype, female; paratypes, females.

*Gonomyia* (*Gonomyia*) *gratilla* is very different from the other members of the group in the structure of the dististyle and the entirely pale phallosome. It is much smaller than all other Oriental members of the group, with the exception of *G.* (*G.*) *longifimbriata* sp. nov., which differs in the long costal fringe of the wings and in the structure of the male hypopygium.

GONOMYIA (GONOMYIA) LONGIFIMBRIATA sp. nov. Plate 1, fig. 16; Plate 2, fig. 35.

Belongs to the *subcinerea* group; size small (wing, male, 3.5 millimeters); general coloration of notum brown; pleura brown, the pteropleurite paler; legs black; wings with a faint gray tinge; costal fringe (male) very long and conspicuous; m-cu before fork of M; male hypopygium with the dististyle bearing a long slender outer lobe and a flattened inner blade that has two curved black spines.

*Male*.—Length, about 3 millimeters; wing, 3.5.

Rostrum and palpi brownish black. Antennæ black throughout; flagellar segments long-oval, with elongate verticils. Head dark.

Anterior lateral pretergites restrictedly pale yellow. Mesonotum uniformly brown. Pleura brown, the pteropleurite abruptly paler. Halteres broken. Legs with the coxæ and trochanters brownish testaceous; remainder of legs black. Wings (Plate 1, fig. 16) with a faint gray tinge; veins brown. Costal fringe (male) very long and conspicuous, only a little shorter, though stouter, than the posterior fringe. Venation: Sc ending just before the origin of Rs, Sc<sub>2</sub> a short distance beyond the end of Sc<sub>1</sub>, immediately opposite origin of Rs; Rs in alignment with R<sub>5</sub>, the basal section of the latter lacking; R<sub>3</sub> relatively short,



about one-third longer than distance on margin between tips of veins  $R_{1+2}$  and  $R_3$ ; m-cu before fork of M.

Abdomen brownish black; hypopygium somewhat brighter. Male hypopygium (Plate 2, fig. 35) with the dististyle, *d*, divided into two parts, an outer slender fleshy arm, with long conspicuous setæ along its entire length; and a stouter blade that bears a powerful curved black spine on outer margin at near midlength; apex of lobe with a small, less curved, black spine, on apical margin below which are two powerful fasciculate setæ; face of lobe with a linear series of about six long setæ. Phallosome, *p*, with two slender arms at near midlength, both arms ending in slender spines.

MINDANAO, Cotabato Province, Cornadal, April 19, 1932 (*Rivera*); holotype, male.

The small size, long costal fringe of male, and construction of the male hypopygium readily separate the present fly from other Indo-Malayan species of the subgenus.

GONOMYIA (GONOMYIA) VERSICOLOR sp. nov. Plate 1, fig. 17.

Belongs to the *cognatella* group; general coloration of thoracic notum a medium brown; pleura striped longitudinally with whitish; knobs of halteres dusky; legs dark brown; wings brownish, the disk conspicuously variegated by subhyaline areas before and beyond cord; stigma dark brown; paler brown seams along cord; abdomen brownish black, the segments ringed caudally with whitish.

*Female*.—Length, about 3.3 to 3.8 millimeters; wing, 3.5 to 4.2.

Rostrum and palpi black. Antennæ with basal two segments yellow beneath, darker above; flagellum black. Head above chiefly pale, the center of vertex more or less darkened.

Anterior lateral pretergites and pronotum light yellow. Mesonotum almost uniform medium brown, the præscutum a little darker sublaterally; scutellum not brightened. Pleura dark brown, conspicuously striped longitudinally with a ventral whitish stripe extending from the fore coxæ to the base of abdomen, passing beneath the halteres. Halteres obscure whitish, the knobs dusky. Legs with the coxæ obscure testaceous, the fore coxæ white, as described; remainder of legs dark brown. Wings (Plate 1, fig. 17) with the ground color brownish, especially the apical region, the disk conspicuously variegated by extensive subhyaline areas before and beyond cord; stigma dark brown, very conspicuous; distinct but paler brown clouds along

cord and fork of  $M_{1+2}$ ; veins pale brown, darker in the clouded areas. Venation:  $Sc_1$  ending just beyond origin of  $R_s$ ,  $Sc_2$  at its tip; m-cu close to fork of  $M$ .

Abdominal segments brownish black, the caudal borders narrowly ringed with whitish. Ovipositor with genital shield blackened, the elongate valves brownish yellow.

MINDANAO, Davao district, Tagum, Madaum River, at trap lantern, March 27, 1931 (*Clagg*); holotype, female; paratype, female.

*Gonomyia* (*Gonomyia*) *versicolor* is closest to *G.* (*G.*) *obscuriclava* Alexander (Sumatra), differing in the details of coloration, most conspicuously in the highly variegated wing pattern of the present fly. Unfortunately the male of neither of these species is available for comparison.

**GONOMYIA (LIPOPHLEPS) PERREDUCTA** sp. nov. Plate 1, fig. 18; Plate 3, fig. 36.

Mesonotal præscutum brownish black medially, paler brown sublaterally, the borders yellow; knobs of halteres obscure yellow; legs black; wings with a pale brown tinge; cell  $R_3$  present but very small; macrotrichia on nearly the whole length of both anal veins; male hypopygium large and very complex in structure, the inner dististyles of the two sides quite different in construction; outer lobe of basistyle of each side very long and fingerlike.

*Male*.—Length, about 3.5 millimeters; wing, 3.8 to 4.

*Female*.—Length, about 4.5 millimeters; wing, 4.5.

Rostrum dark brown; palpi black. Antennæ black throughout; flagellar segments of male with long conspicuous verticils on segments five to nine, inclusive, the other flagellar segments with shorter verticils; longest verticils approximately three times as long as the segments that bear them. Head blackened, the central portion of the occipital region brighter.

Pronotum and anterior lateral pretergites yellow. Mesonotal præscutum brownish black medially, paler brown away from the central area; humeral and lateral portions of præscutum obscure yellow; scutal lobes and a transverse area on posterior portion of median area of scutum dark brown; remainder of median area of scutum and the scutellum yellow; mediotergite yellow on cephalic half, more reddish on posterior portion. Pleura and pleurotergite yellow, the anepisternum and sternopleurite somewhat more infumed. Halteres with stem dusky, obscure yellow at base, the apices of the knobs light yellow. Legs with the fore coxæ darkened, the remaining coxæ and all trochanters yellow;

remainder of legs black, the femoral bases restrictedly pale. Wings (Plate 1, fig. 18) with a pale brown tinge, cells C and Sc pale yellow, the stigmal region darker brown, diffuse; veins and macrotrichia brown. Costal fringe moderately long and conspicuous; macrotrichia of veins conspicuous, none on  $R_3$ ; both anal veins with trichia except at their bases. Venation:  $Sc_1$  ending opposite origin of Rs or nearly so,  $Sc_2$  close to its tip; vein  $R_3$  present, oblique to suberect, cell  $R_2$  at margin subequal to cell  $R_3$ ; Rs shorter than petiole of cell  $R_3$ ; m-cu close to fork of M.

Abdominal tergites chiefly brown, the caudal and lateral borders of the segments brightened; sternites chiefly light yellow. Male hypopygium (Plate 3, fig. 36) with the dististyle, *d*, and phallosome, *p*, highly asymmetrical, large and complex in structure. Basistyle, *b*, alike on both sides, the lobe very long, pale, cylindrical, clothed with long conspicuous setæ. Dististyle, *d*, of one side bearing two slender arms besides the fleshy innermost one that terminates in a single powerful fasciculate seta, and, in addition, bears the usual elongate seta on outer face at near two-thirds the length; longest arm of this style strongly curved and convoluted. Dististyle, *d*, of the opposite side bearing a single arm additional to the inner, fleshy, bristle-bearing arm, which is quite like its mate of the opposite side. Phallosome, *p*, consisting of three yellowish blades, of which one is much longer, compressed, hanging pendant from the genital chamber like a cleaver.

MINDANAO, Cotabato Province, Mount Matutum, April 9 to 27, 1932 (*Rivera*), holotype, male; allotype, female; paratypes, both sexes; Barrio Lagdaan, April 4, 1932 (*Rivera*); paratypes, both sexes; Nupol, April 2, 1932 (*Rivera*); paratypes, both sexes.

The other regional species of the subgenus having cell  $R_3$  present (*nubeculosa* de Meijere and *pallidisignata* Alexander) have the wings conspicuously patterned with dark and light colors, and the femora conspicuously ringed with black before the tips. The present fly is very distinct from other Oriental species of *Gonomyia* in the unusually small cell  $R_3$  and the large complex male hypopygium, with asymmetrical dististyles. By my key to the Philippine species of the genus,<sup>13</sup> the fly runs to *pallidisignata*.

<sup>13</sup> Philip. Journ. Sci. 48 (1932) 615-617.

GONOMYIA (LIPOPHLEPS) PINIVAGATA sp. nov. Plate 1, fig. 19; Plate 3, fig. 37.

Belongs to the *skusei* group; size large (wing, 5 millimeters or more); antennæ black throughout, in male, the flagellar segments long-cylindrical, with abundant outspreading erect setæ; pleura conspicuously striped longitudinally with white; wings with a strong brownish tinge; abdominal tergites dark brown, sternites yellow; male hypopygium with the dististyle single, entirely fleshy; phallosome terminating in four obtuse points, the surface with conspicuous erect setæ.

*Male*.—Length, about 4 to 4.2 millimeters; wing, 5 to 5.3.

*Female*.—Length, about 4.2 millimeters; wing, 5.

Rostrum brownish black, more obscure yellow on sides; palpi black. Antennæ black throughout; flagellar segments (male) long-cylindrical, with abundant outspreading erect setæ. Head gray.

Pronotum and anterior lateral pretergites whitish. Mesonotum dark brown or brownish black, the scutellum, broad median area of scutum, and posterior angles of scutal lobes yellow; mediotergite more pruinose, the cephalic-lateral portion and dorsal half of pleurotergite yellow. Pleura dark brown, with a conspicuous white longitudinal stripe extending from behind the fore coxæ to the base of abdomen. Halteres brown, the base of stem and apex of knob slightly brightened. Legs with the coxæ and trochanters dark; remainder of legs brownish black. Wings (Plate 1, fig. 19) with a strong brownish tinge, the stigmal region very vaguely darker; veins dark brown. Venation: Sc long, Sc<sub>1</sub> ending about opposite one-third to two-fifths the length of Rs, Sc<sub>2</sub> at near mid-distance between origin of Rs and tip of Sc<sub>1</sub>; outer radial veins elongate; basal section of R<sub>5</sub> short; cell R<sub>5</sub> narrowed at margin; m-cu at or close to fork of M.

Abdominal tergites dark brown, sternites yellow. Male hypopygium (Plate 3, fig. 37) with a single fleshy dististyle, *d*, this subequal in length and size to the apical lobe of basistyle, *b*, terminating in a powerful fasciculate seta and with one unusually long seta on outer face at near two-thirds the length, in addition to the more normal setæ. Phallosome, *p*, with four obtuse points at apex, with two slender darkened rods or tubes extending almost the entire length of the structure; surface of phallosome with conspicuous scattered setæ.

LUZON, Mountain Province, Benguet, Haight's Place, Pauai, altitude 8,000 feet, in pine forest (*Pinus insularis* Endlicher) (*Clagg and Rivera*), October 5–6, 1931; holotype, male; allotype, female; paratypes, both sexes, October 2 to 6, 1931; Clark's

Place, Camp 66, altitude 7,000 feet, October 6, 1931 (*Clagg and Rivera*); paratypes, both sexes.

*Gonomyia (Lipophleps) pinivagata* is the largest species of the *skusei* group in the Oriental Region, being fully equal in size to the typical species, *G. (L.) skusei* Alexander, of eastern Australia. It is readily told from other allied species by the structure of the phallosome of the male hypopygium.

GONOMYIA (LIPOPHLEPS) RAMIFERA sp. nov. Plate 1, fig. 20; Plate 3, fig. 38.

Allied to *jacobsoniana*; male hypopygium with the middle dististyle biramous, both arms densely covered with conspicuous setæ; inner dististyle a long slender rod, hinged at base, the distal third with numerous scattered erect setæ.

*Male*.—Length, about 3.5 to 3.6 millimeters; wing, 2.9 to 3.2.

*Female*.—Length, about 3.8 to 4 millimeters; wing, 3.2 to 3.4.

Rostrum and palpi black. Antennæ with basal two segments dark above, yellow beneath; flagellum brownish black. Head light yellow, the posterior vertex extensively variegated with dark brown.

Pronotum and anterior lateral pretergites light yellow. Mesonotal præscutum and scutum brown, bordered laterally by a narrow, more blackish line; pseudosutural foveæ black; scutellum dark, broadly bordered by light yellow; mediotergite dark gray. Pleura dark gray, with a conspicuous whitish longitudinal stripe extending from fore coxæ to the base of abdomen. Halteres obscure yellow, the knobs dusky. Legs with the fore coxæ pale, remaining coxæ darkened; trochanters brownish yellow; femora brownish yellow, the fore and middle femora with black terminal rings, the posterior femora with these rings subterminal; dark femoral annuli preceded by a narrow, more yellowish annulus; tibiæ yellow, the extreme bases blackened, narrowest and least distinct on the posterior tibiæ; tips of tibiæ narrowly blackened; tarsi obscure yellow, the tips of basitarsi and second segment, and all of remaining segments darkened. Wings (Plate 1, fig. 20) grayish subhyaline, virtually immaculate, the stigma scarcely indicated; veins pale brown, the cord somewhat darker. Venation:  $Sc_1$  ending just before origin of  $R_s$ ; basal section of  $R_5$  elongate; m-cu varying in position from close to fork of M to about two-thirds its length before this fork.

Abdominal tergites black, the caudal borders (male) narrowly obscure whitish; sternites uniformly blackened. Male hypopygium (Plate 3, fig. 38) with three dististyles, the innermost, *id*, basal, almost in the usual position of an interbase.

Outer dististyle, *od*, a simple curved glabrous rod. Middle style, *md*, shorter, biramous by a slender branch at near two-thirds the length, this set with short spinous setæ; main axis of style stouter, with long coarse setæ. Inner style, *id*, very long and slender, hinged at base, but not provided with setæ at this point as in *jacobsoniana*; outer third of style with scattered conspicuous setæ. Phallosome, *p*, and asymmetrical mass.

MINDANAO, Davao district, Tagum, Madaum River, at trap lantern, March 27, 1931 (*Clagg*); holotype, male; allotype, female; paratypes, several, both sexes.

The present fly is readily distinguished from the other described species that are allied to *Gonomyia* (*Lipophleps*) *diffusa* (de Meijere) by the structure of the male hypopygium, especially of the middle and inner dististyles.

**GONOMYIA (LIPOPHLEPS) JACOBSONIANA** Alexander.

*Gonomyia* (*Lipophleps*) *jacobsoniana* ALEXANDER, Philip. Journ. Sci. 53 (March, 1934).

MINDANAO, Davao district, Tagum, Madaum River, at trap lantern, March 26–27, 1931 (*Clagg*). Known elsewhere from Sumatra.

**GONOMYIA (LIPOPHLEPS) LUTEIMARGINATA** Alexander.

*Gonomyia* (*Lipophleps*) *luteimarginata* ALEXANDER, Philip. Journ. Sci. 46 (1931) 32–33.

Described from Calian, Lawa, Mindanao, and now known to be widely distributed in the Austromalayan islands.

LUZON, Manila, at lamp, August 5, 1932 (*McGregor*); 1 male. NORTH CELEBES, Roeroekan, Minahassa, altitude 4,000 feet, at light, April 14, 1931 (*Clagg*); 1 male. NEW GUINEA, Seleu, Berlinhafen, 1896 (*Biró*); 2 males.

Riedel<sup>14</sup> had earlier determined the two last-mentioned specimens as being *Lipophleps brevivena* Skuse (No. 25) and *L. nebulosa* de Meijere (?) (No. 27). The specimens are in the Hungarian National Museum and were examined by me through the kindness of Doctor Szilady.

**GONOMYIA (LIPOPHLEPS) DIACANTHA** sp. nov. Plate 3, fig. 39.

Allied to *luteimarginata*; general coloration dark grayish brown, the scutellum chiefly yellow; pleura blackish gray, with a broad whitish longitudinal stripe; legs brownish yellow to brown; wings variegated with pale brown and subhyaline areas, the costal region clear light yellow; Sc short; abdominal tergites

<sup>14</sup> Ann. Mus. Nat. Hungarici 18 (1920) 136.

uniformly dark brown; male hypopygium with both dististyles terminal in position, the outer bearing two black teeth or spines near base of mesal face.

*Male*.—Length, about 2.3 to 2.5 millimeters; wing, 2.8 to 3.1.

*Female*.—Length, about 2.8 to 3 millimeters; wing, 3.2 to 3.3.

Rostrum and palpi black. Antennæ black, the upper surface of the basal two segments obscure yellow. Head yellow, the center of vertex darkened.

Anterior lateral pretergites and lateral borders of præscutum pale yellowish white. Mesonotum dark grayish brown, the pseudosutural foveæ black; median region of scutum and posterior portions of lobes yellow; scutellum yellow, darkened medially at base; mediotergite chiefly darkened, yellow laterally, in cases with the yellow color continued subbasally across the sclerite. Pleura blackish, pruinose, with a broad whitish or yellowish white longitudinal stripe extending from the fore coxæ across the dorsal sternopleurite and meral region to the base of abdomen, passing beneath the halteres. Halteres dusky, the apex of knob obscure yellow. Legs with the coxæ dark, fore coxæ white, as described; trochanters obscure yellow; femora obscure brownish yellow to brown, deepening toward outer end; tibiæ and tarsi darkened. Wings clouded with pale brown and subhyaline areas, iridescent; cells C and Sc clear light yellow; stigma darker brown; subhyaline brightenings mostly before and beyond cord and in the outer ends of cubital and anal cells; veins pale, the cord and outer medial veins darker. Venation: Sc short, Sc<sub>1</sub> ending a distance before origin of Rs about equal to m-cu or two-thirds the length of Rs; veins of radial field strongly divergent; basal section of R<sub>5</sub> long; m-cu at fork of M.

Abdominal segments in both sexes uniform dark brown; sternites a very little paler; hypopygium orange. Male hypopygium (Plate 3, fig. 39) with the outer dististyle, *od*, bearing two teeth near base on mesal edge, the basal one longer and slenderer, the outer tooth separated from the first by a rounded or oval notch; remainder of style entire, blackened. Inner dististyle, *id*, shorter, strongly curved at near midlength, the apex narrowed into a slender black spine. Apical spines of gonapophyses long and slender, blackened.

MINDANAO, Cotabato Province, Nupol, March 29 to April 2, 1932 (*Rivera*); holotype, male; allotype, female; paratypes, several, both sexes; Barrio Lagdaan, April 4, 1932 (*Rivera*);

paratypes, males; Covell, Buayan, March 24 to 28, 1932 (*Rivera*); paratypes, males; Mount Matutum, April 9, 1932 (*Rivera*); paratypes, males.

Closely allied to *Gonomyia* (*Lipophleps*) *luteimarginata* Alexander (Luzon, Mindanao, Celebes, and New Guinea), differing evidently and conspicuously in the structure of the male hypopygium, such as the total lack of small spinules along mesal edge of outer dististyle, these being replaced by a single triangular blackened tooth near the basal spine, and in the quite different structure of the inner dististyles and gonapophyses.

**GONOMYIA (LIPOPHLEPS) SUBPILIFERA** sp. nov. Plate 1, fig. 21; Plate 3, fig. 40.

Belongs to the *pilifera* group; pleural stripe poorly defined; femora with inner dark annulus narrow and poorly indicated; wings whitish, with restricted brown areas and very pale gray washes on basal half; male hypopygium with the outer dististyle short, its apex a blackened point, with a small group of setæ close to tip.

*Male*.—Length, about 3.2 millimeters; wing, 2.8.

Rostrum and palpi blackish brown. Antennæ with scape and pedicel reddish brown; flagellum darker brown. Head brownish gray.

Mesonotal præscutum gray, the median portion weakly infuscated; pseudosutural foveæ black, conspicuous; posterior sclerites of mesonotum not visible in the unique type. Pleura brownish gray, with a clearer gray longitudinal stripe across the ventral sclerites. Halteres dusky, the base of stem narrowly orange, the knobs obscure. Legs with femora obscure yellow, with a broad brownish black subterminal ring and indications of a second, narrow, pale brown ring at near two-thirds the length of the segment; tibiæ obscure yellow, the tips narrowly dark brown; basitarsi obscure yellow, the tips and remainder of tarsi blackened. Wings (Plate 1, fig. 21) whitish, with a restricted brown pattern, as in the group; restricted brownish areas at arculus, tip of Sc and origin of Rs, tip of R<sub>3</sub>, and along cord and outer end of cell 1st M<sub>2</sub>; stigma oval, somewhat paler grayish brown; paler gray washes across basal half of wing; veins pale, darker in the clouded areas. Venation: Sc<sub>1</sub> ending opposite origin of Rs, Sc<sub>2</sub> at its tip; m-cu before fork of M.

Abdominal segments dark brown, ringed caudally with paler; hypopygium obscure yellow. Male hypopygium (Plate 3, fig. 40) with the characters as in group, inner dististyle, *id*, with a



densely setiferous pale cushion at base; basistyle, *b*, with pale digitiform lobe on mesal face; phallosome, *p*, produced into two slender needlelike spines. Differs from *pilifera* in the short outer dististyle, *od*, which is only slightly arcuated, immediately before tip with a small group of setæ, the apex beyond this point a short black spine. Ædeagus a slender dark spine, provided with small appressed setulæ.

MINDANAO, Davao district, Tagum, Madaum River, at trap lantern, March 26, 1931 (*Clagg*); holotype, male.

Differs from *Gonomyia* (*Lipophleps*) *pilifera* (de Meijere), of Java and Sumatra, in the structure of the male hypopygium.

GONOMYIA (LIPOPHLEPS) INÆQUISTYLA sp. nov. Plate 1, fig. 22; Plate 3, fig. 41.

General coloration of notum dark brown; pleura variegated with brown and whitish, not striped longitudinally; legs dark brown to brownish black; wings with a faint brown tinge, unmarked except for the pale brown stigma; Sc short; male hypopygium with the dististyle of either side very different in structure from its mate of the opposite side.

*Male*.—Length, 2.7 to 2.8 millimeters; wing, 3 to 3.2.

*Female*.—Length, about 3 to 3.2 millimeters; wing, 3.2 to 3.4.

Rostrum obscure yellow; palpi dark. Antennæ dark throughout; verticils unusually abundant and elongate. Head dark gray.

Anterior lateral pretergites very restrictedly whitish. Mesonotum brown, darker brown medially, the humeral and lateral regions of præscutum more brightened; median region of scutum and the scutellum obscure yellow, the latter darkened medially at base; mediotergite darkened, pleurotergite pale yellow. Pleura variegated dark brown and whitish but without longitudinal pale stripes, as usual in the subgenus, the pattern more transversely tessellated; the pale color includes the dorsopleural region, posterior sternopleurite, and lower posterior angle of anepisternum, together with the meral region; the dark color includes most of anepisternum and sternopleurite, and the pteropleurite. Halteres dusky, the stem brighter at base. Legs with the coxæ dark brown; trochanters obscure brownish yellow; femora brownish black, the tibiæ and tarsi slightly paler brown. Wings (Plate 1, fig. 22) with a faint brown tinge, the stigmal region a little darker; veins dark brown. Venation: Sc<sub>1</sub> ending some distance before origin of the short Rs, Sc<sub>2</sub>

some distance from its tip; Rs and anterior branch of same subequal, or the latter a little longer; r-m unusually long and arcuated, the basal section of R<sub>5</sub> correspondingly reduced.

Abdominal tergites dark brown, the sternites similar, narrowly bordered laterally and caudally with pale; hypopygium obscure yellow. Male hypopygium (Plate 3, fig. 41) with the dististyles of the two sides very different in structure; one, *d*, a small oval flattened plate, shorter than the apical lobe of basistyle, produced laterad into a curved black spine; dististyle of opposite side, *d*, much longer than the lobe of basistyle, slender, gently curved, the tip a narrow blackened spine with numerous setæ surrounding base of spine; on basal half a series of seven or eight long erect setæ.

MINDANAO, Davao district, Tagum, Madaum River, at trap lantern, March 27, 1931 (*Clagg*); holotype, male; allotype, female; paratypes, several of both sexes. NORTH CELEBES, Minahassa, Roeroekan, altitude 3,500 feet, April 11, 1931 (*Clagg*); paratype, male.

The species most similar to this in the Oriental fauna is *Gonomyia* (*Lipophleps*) *incompleta* Brunetti, which is readily separated by the symmetrical dististyles of the male hypopygium. Asymmetrical dististyles are frequent in New Zealand and certain Neotropical members of *Lipophleps*, but the present case marks the greatest extreme known to me, with the single exception of *G. (L.) perreducta* sp. nov., described in this paper.

#### Genus ERIOPTERA Meigen

*Erioptera* MEIGEN, Illiger's Magaz. 2 (1803) 262.

#### Subgenus METERIOPTERA subg. nov.

Characters as in typical *Erioptera*, differing as follows: Basal three or four segments of antennal flagellum united into a short, truncate-conical fusion segment (Plate 3, fig. 42), the entire organ thus with twelve or thirteen segments. Wings with cord beyond midlength (Plate 1, figs. 23 and 24); vein 2d A only moderately sinuous, the distal fourth deflected slightly cephalad and not strongly constricting cell 1st A. Male hypopygium (Plate 3, figs. 43, 44, and 45) with the outer dististyle, *od*, terminating in a group of appressed spinous setæ or spines; inner dististyle, *id*, with apical portion usually bent at a strong angle to main axis of style.

*Type of subgenus.*—*Erioptera javanensis* de Meijere (Oriental: Austromalayan).

Other included species: *Erioptera angustifascia* Alexander (North Queensland), *E. fervida* sp. nov., *E. festiva* sp. nov., *E. geniculata* Edwards (Borneo and Mindanao), and *E. notata* de Meijere, with allied species or races (Oriental). All of the above forms, with the exception of *fervida* and *notata*, sens. lat., have the tips of the femora narrowly and abruptly white, preceded by a more or less distinct darkened annulus. *Erioptera rogersi* Alexander (Formosa), which has whitened femoral tips, does not belong to this new group but is a true *Erioptera*.

ERIOPTERA (METERIOPTERA) FESTIVA sp. nov. Plate 1, fig. 23; Plate 3, figs. 42 and 43.

Mesonotum chiefly cinnamon to light brown, the caudal borders broadly pale; femora yellow, with a brown subterminal ring, the tips white; wings yellow, with brown seams at origin of Rs, along cord and at tip of  $R_{1+2}$ ; male hypopygium with the outer half of inner dististyle bent at an obtuse angle, the tip a blackened spine.

*Male*.—Length, about 2.5 millimeters; wing, 3.3.

*Female*.—Length, about 3 to 3.2 millimeters; wing, 3.5.

Rostrum yellow; palpi dark brown. Antennæ with the large scape and pedicel dark brown, the flagellum paler, especially the basal segments; ten flagellar segments beyond the conical fusion segment (Plate 3, fig. 42). Head pale brown.

Pronotum pale yellow. Mesonotum light cinnamon to pale brown, the humeral region and lateral borders of præscutum broadly whitish. Pleura chiefly brown, light in female, darker in male, variegated by silvery white on anepisternum, posterior portion of sternopleurite, meral region, and beneath the wing root. Halteres chiefly pale, the knobs weakly darkened, especially in the female. Legs with coxæ pale, the fore coxæ somewhat darker; trochanters yellow; femora yellow, with a conspicuous brown to dark brown subterminal ring a little more than its own length before the white tips; remainder of legs pale yellow, the outer tarsal segments a trifle paler. Wings (Plate 1, fig. 23) yellow, sparsely patterned with brown, including a conspicuous seam along cord, a common brown spot at origin of Rs and on  $Sc_2$ , and a spot at tip of  $R_{1+2}$ ; a much fainter, barely evident, area at tip of vein  $R_3$ ; veins yellow, darker in the clouded areas.

Abdominal tergite chiefly yellow, in male with a brown subterminal ring; in female, the segments more or less bicolored, dark basally, the caudal borders brighter; hypopygium yellow. Male hypopygium (Plate 3, fig. 43) with the inner dististyle, *id*,

stout, the distal half bent at an obtuse angle, the basal end of the bent portion with a flattened flange, the apex a blackened spine. Outer angles of phallosomic plate dusky, weakly corrugated.

MINDANAO, Davao district, Tagum, Madaum River, at trap lantern, March 26-27, 1931 (*Clagg*); holotype, male; allotype, female; paratypes, 3 females.

*Erioptera (Meterioptera) festiva* is amply distinct from the other species of the subgenus, especially in the heavier wing pattern and in the structure of the male hypopygium. The distinctions between the three allied members of the subgenus in the Philippines having the femoral tips white are best shown by the following key:

1. Wings unmarked (Java, Borneo, and Mindanao).

*javanensis* de Meijere.

Wings with at least the cord and origin of Rs seamed with darker..... 2.

2. Small brown marginal spots at ends of veins  $R_{1+2}$  and  $R_3$  (Mindanao).

*festiva* sp. nov.

No dark markings at ends of veins  $R_{1+2}$  and  $R_3$  (Borneo and Mindanao).

*geniculata* Edwards.

**ERIOPTERA (METERIOPTERA) JAVANENSIS** de Meijere.

*Erioptera javanensis* DE MEIJERE, Tijds. voor Entom. 54 (1911) 45-46, pl. 3, fig. 28 (male hypopygium).

Described from Java. MINDANAO, Davao district, Tagum, Madaum River, at trap lantern, March 26-27, 1931 (*Clagg*); Cotabato Province, Buayan, May 8, 1932 (*Rivera*).

**ERIOPTERA (METERIOPTERA) GENICULATA** Edwards.

*Erioptera geniculata* EDWARDS, Journ. Fed. Malay States Mus. 16 (1931) 498-499.

Described from Bettotan, North Borneo. MINDANAO, Davao district, Tagum, Madaum River, at trap lantern, March 26-27, 1931 (*Clagg*), several specimens. The male hypopygium (Plate 3, fig. 44) is very similar to that of *javanensis*, but the spinous points at apex of outer dististyle, *od*, appear to be more delicate and more numerous. *Erioptera (Meterioptera) angustifascia* Alexander,<sup>15</sup> from North Queensland, is very similar to *geniculata* and may prove to be the same. The male sex is unknown and it is definitely unsafe to place virtually any described crane fly as a synonym without a knowledge of the male hypopygium.

<sup>15</sup> Proc. Roy. Soc. Queensland 32 (1920) 96-97.

**ERIOPTERA (METERIOPTERA) FERVIDA** sp. nov. Plate 1, fig. 24; Plate 3, fig. 45.

General coloration dull black, including halteres and legs; wings with a blackish suffusion; outer end of vein 2d A only shortly sinuous; male hypopygium with the inner dististyle stout, bent at a right angle into a powerful spine.

*Male*.—Length, about 2.5 millimeters; wing, 2.9 to 3.

Rostrum and palpi dull black. Antennæ with scape brown; pedicel brownish black; flagellum paler, more yellowish brown; flagellar segments beyond the fusion with long conspicuous verticils. Head brownish black.

Thorax uniformly blackened, opaque. Halteres and legs blackened. Wings (Plate 1, fig. 24) with a blackish suffusion; veins and macrotrichia still darker. Macrotrichia of veins long and coarse. Venation: Forks of radial and medial cells relatively shallow;  $R_{2+3+4}$  fully twice r-m; m-cu shortly before fork of M; outer end of vein 2d A only slightly sinuous.

Abdomen black. Male hypopygium (Plate 3, fig. 45) with the outer dististyle, *od*, weakly clavate, the apex set with coarse short spines. Inner dististyle, *id*, bent at a right angle at near midlength, the apex a powerful spine, the inner margin roughened by microscopic papillæ. Gonapophyses, *g*, appearing as slender, curved blackened hooks.

MINDANAO, Cotabato Province, Pauayan, May 8, 1932 (*Rivera*); holotype, male; allotype, female; paratypes, both sexes.

The present fly is undoubtedly allied to *javanensis*, despite the coloration of the body and appendages. Its general appearance is much like that of *Erioptera (Teleneura) fusca* de Meijere, but the two flies are distantly related.

The complex of races or closely allied species that center about *Erioptera (Meterioptera) notata* de Meijere belong to a different group from all the above, differing in the shape of the outer dististyle of the male hypopygium.

**ERIOPTERA (ERIOPTERA) BIARMATA** sp. nov. Plate 3, fig. 46.

General coloration pale reddish yellow; antennæ with segments of basal half pale, the outer segments darkened; halteres with blackened knobs; legs yellow; male hypopygium with the outer dististyle bifid beyond midlength into two acute black spines that diverge at an acute angle; inner dististyle simple; phallosome entirely pale.

*Male*.—Length, about 3.5 to 4 millimeters; wing, 4 to 4.8.

Rostrum yellow; palpi brownish black. Antennæ with scape, pedicel, and basal four or five flagellar segments yellow, the succeeding segments infuscated; flagellar segments subcylindrical to truncate-fusiform, the longest verticils subequal to the segments; antennæ 16-segmented, as normal. Head reddish yellow, the anterior vertex paler.

Pronotum yellowish. Mesonotum almost uniformly pale reddish, the posterior sclerites somewhat more reddish yellow. Pleura yellow. Halteres yellow, the knobs black. Legs yellow, the terminal tarsal segments weakly darkened. Wings yellow, the veins darker yellow; macrotrichia brown. Venation: Vein 2d A unusually long-sinuuous, cell 1st A at midlength being more than twice as wide as just before outer end.

Abdomen brownish yellow, somewhat darker subterminally; hypopygium yellow. Male hypopygium (Plate 3, fig. 46) with the apex of basistyle, *b*, a little produced caudad beyond point of insertion of the dististyles; mesal face of style with dense erect setæ. Outer dististyle, *od*, bifid beyond midlength into two acute black spines that diverge at an acute angle, the outer or axial spine longer. Inner dististyle, *id*, simple, at apex slightly dilated into a spatula that is armed with several setigerous punctures. Phallosome appearing as two slender rods that are united at base to appear more or less like a tuning fork, each rod expanded laterad into a broad pale blade, the entire phallosomic region pale.

LUZON, Mountain Province, Benguet, Haight's Place, Pauai, altitude 8,000 feet, October 6, 1931 (*Clagg and Rivera*); holotype, male; paratypes, males, October 5-6, 1931.

Very similar in general appearance to *Erioptera* (*Erioptera*) *lunicola* Alexander (Luzon and Mindanao), differing in the immaculate wings and, especially, the very different structure of the male hypopygium, which is distinct from that of any other species known to me, suggesting in some respects a species of the subgenus *Empeda*; *E. (E.) cacuminis* Edwards, of the mountains of Borneo, has a hypopygium that somewhat resembles that of the present fly, but the outer dististyle and phallosome, especially the latter, are entirely different.

## ILLUSTRATIONS

[Legend: *a*, Ædeagus; *b*, basistyle; *d*, dististyle; *g*, gonapophysis; *id*, inner dististyle; *md*, middle dististyle; *od*, outer dististyle; *p*, phallosome; *t*, tergite.]

### PLATE 1

- FIG. 1. *Limonia* (*Limonia*) *languida* sp. nov., wing.  
2. *Limonia* (*Limonia*) *erratica* sp. nov., wing.  
3. *Limonia* (*Limonia*) *melanoptera* sp. nov., wing.  
4. *Limonia* (*Limonia*) *parvispiculata* sp. nov., wing.  
5. *Limonia* (*Libnotes*) *circumscripta* sp. nov., wing.  
6. *Limonia* (*Libnotes*) *rarissima* sp. nov., wing.  
7. *Helius* (*Rhampholimnobia*) *brevinasus* sp. nov., wing.  
8. *Trichoneura* (*Xipholimnobia*) *bontocensis* sp. nov., wing.  
9. *Troglophila* *cotabatoensis* sp. nov., wing.  
10. *Trentepohlia* (*Mongoma*) *carbonipes* sp. nov., wing.  
11. *Trentepohlia* (*Mongoma*) *lætithorax* sp. nov., wing.  
12. *Gonomyia* (*Ptilostena*) *cotabatoensis* sp. nov., wing.  
13. *Gonomyia* (*Ptilostena*) *metatarsata atrophica* subsp. nov., wing.  
14. *Gonomyia* (*Gonomyia*) *pauaiensis* sp. nov., wing.  
15. *Gonomyia* (*Gonomyia*) *gratilla* sp. nov., wing.  
16. *Gonomyia* (*Gonomyia*) *longifimbriata* sp. nov., wing.  
17. *Gonomyia* (*Gonomyia*) *versicolor* sp. nov., wing.  
18. *Gonomyia* (*Lipophleps*) *perreducta* sp. nov., wing.  
19. *Gonomyia* (*Lipophleps*) *pinivagata* sp. nov., wing.  
20. *Gonomyia* (*Lipophleps*) *ramifera* sp. nov., wing.  
21. *Gonomyia* (*Lipophleps*) *subpilifera* sp. nov., wing.  
22. *Gonomyia* (*Lipophleps*) *inæquistyla* sp. nov., wing.  
23. *Erioptera* (*Meterioptera*) *festiva* sp. nov., wing.  
24. *Erioptera* (*Meterioptera*) *fervida* sp. nov., wing.

### PLATE 2

- FIG. 25. *Limonia* (*Limonia*) *languida* sp. nov., male hypopygium.  
26. *Limonia* (*Limonia*) *erratica* sp. nov., male hypopygium.  
27. *Limonia* (*Limonia*) *melanoptera* sp. nov., male hypopygium.  
28. *Limonia* (*Limonia*) *parvispiculata* sp. nov., male hypopygium.  
29. *Limonia* (*Libnotes*) *circumscripta* sp. nov., male hypopygium.  
30. *Limonia* (*Libnotes*) *rarissima* sp. nov., male hypopygium.  
31. *Trichoneura* (*Xipholimnobia*) *bontocensis* sp. nov., male hypopygium.  
32. *Gonomyia* (*Ptilostena*) *cotabatoensis* sp. nov., male hypopygium.  
33. *Gonomyia* (*Gonomyia*) *pauaiensis* sp. nov., male hypopygium.  
34. *Gonomyia* (*Gonomyia*) *gratilla* sp. nov., male hypopygium.  
35. *Gonomyia* (*Gonomyia*) *longifimbriata* sp. nov., male hypopygium.

## PLATE 3

- FIG. 36. *Gonomyia* (*Lipophleps*) *perreducta* sp. nov., male hypopygium.  
37. *Gonomyia* (*Lipophleps*) *pinivagata* sp. nov., male hypopygium.  
38. *Gonomyia* (*Lipophleps*) *ramifera* sp. nov., male hypopygium.  
39. *Gonomyia* (*Lipophleps*) *diacantha* sp. nov., male hypopygium.  
40. *Gonomyia* (*Lipophleps*) *subpilifera* sp. nov., male hypopygium.  
41. *Gonomyia* (*Lipophleps*) *inæquistyla* sp. nov., male hypopygium.  
42. *Erioptera* (*Meterioptera*) *festiva* sp. nov., antenna, male.  
43. *Erioptera* (*Meterioptera*) *festiva* sp. nov., male hypopygium.  
44. *Erioptera* (*Meterioptera*) *geniculata* Edwards, male hypopygium.  
45. *Erioptera* (*Meterioptera*) *fervida* sp. nov., male hypopygium.  
46. *Erioptera* (*Erioptera*) *biarmata* sp. nov., male hypopygium.



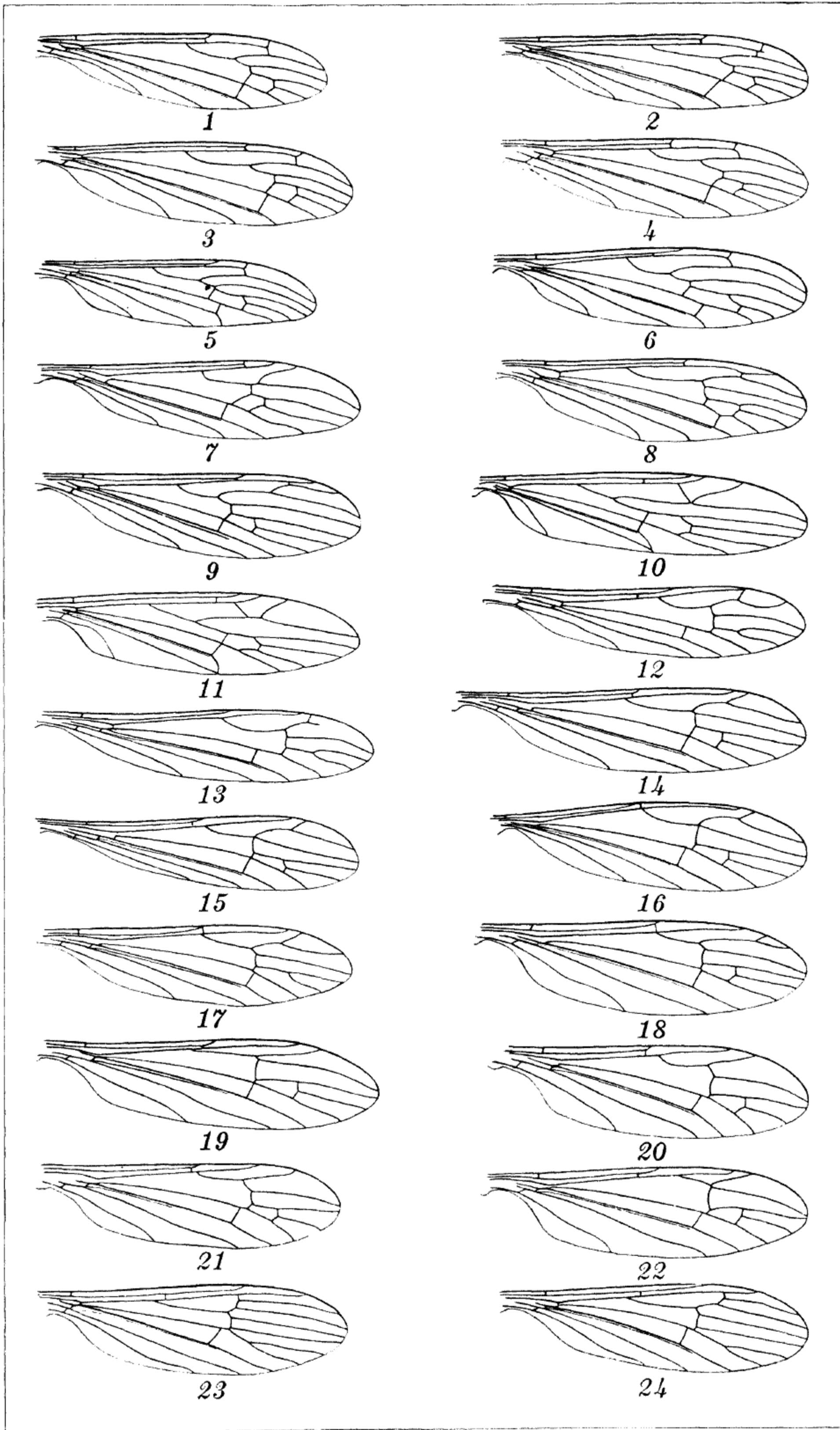


PLATE 1.

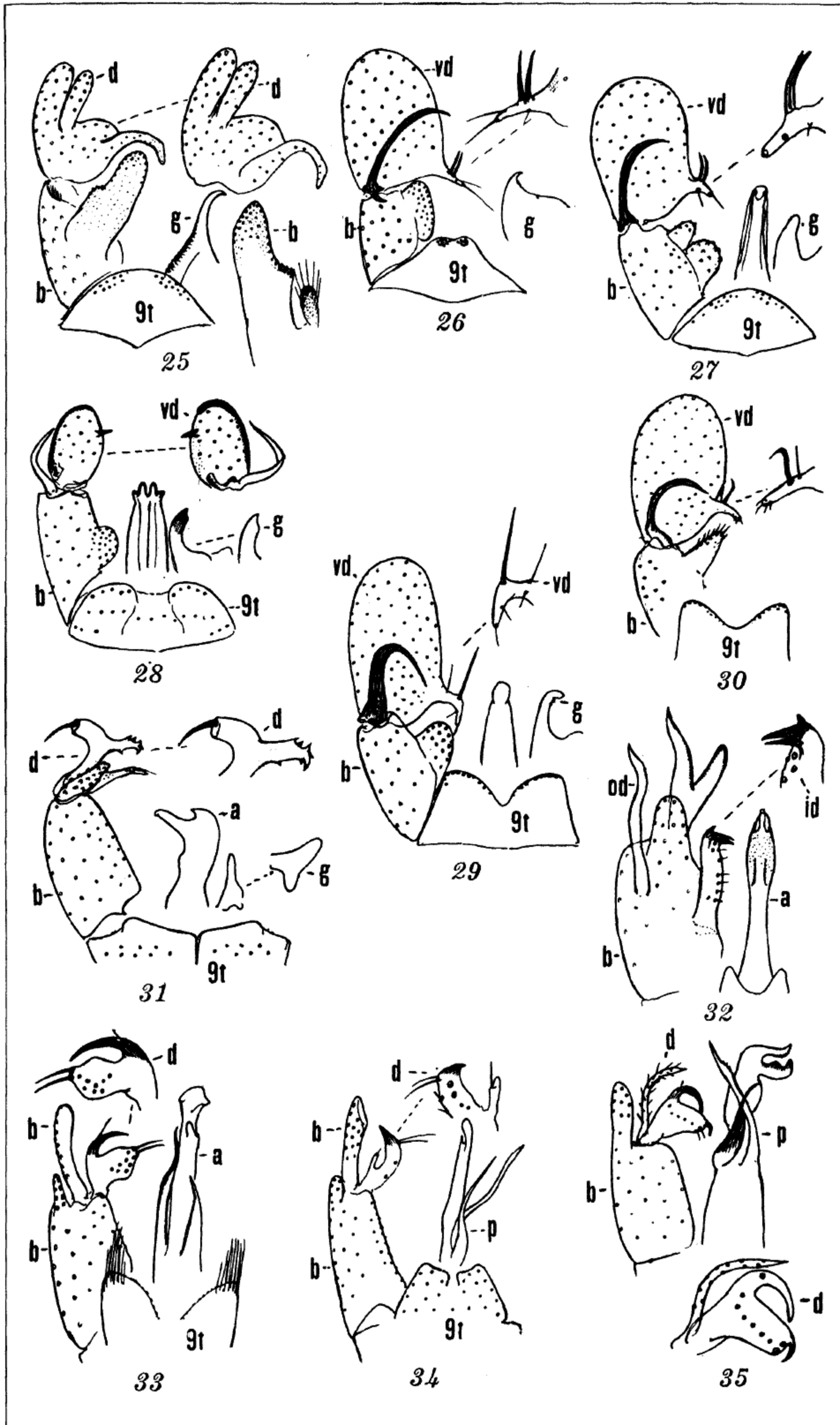


PLATE 2.

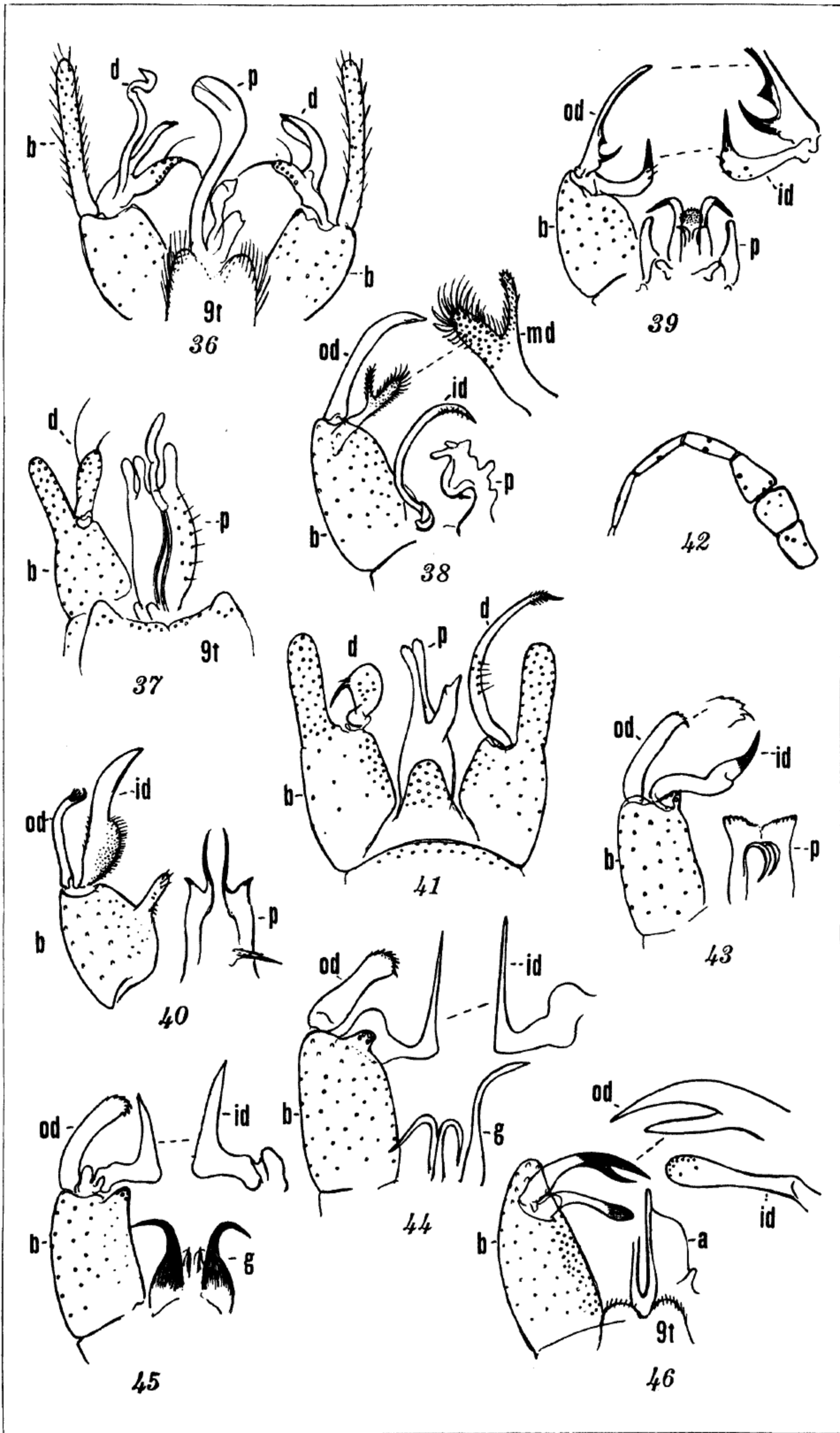


PLATE 3.