

NEW OR LITTLE-KNOWN TIPULIDÆ FROM THE
PHILIPPINES (DIPTERA), XI¹

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THREE PLATES

The very interesting crane flies discussed herewith were taken in various parts of Luzon by my friends Messrs. McGregor, Duyag, and Rivera, and in Minadanao by my former student at this college Mr. Charles F. Clagg. I wish to thank these gentlemen for their continued kindly interest in making known this fauna.

TIPULINÆ

Genus **DOLICHOPEZA** Curtis

Dolichopeza CURTIS, Brit. Entomol. (1825) 62.

I must consider several groups that are allied to *Dolichopeza* and have hitherto been maintained as distinct genera as representing no more than subgeneric aggregations. Such subgenera are as follows:

Dolichopeza, s. s., is found in the western Palæarctic and eastern Nearctic Regions, with the vast majority of the species occurring in Australia and New Zealand. Curiously enough, with the above distribution, no species is found in the Chilean Subregion of the Neotropics. A few aberrant species that may be found to be incorrectly placed herein, including *isolata* Alexander (Luzon), are found in the Oriental and Ethiopian Regions.

Nesopeza Alexander is the dominant subgenus in the Oriental and eastern Palæarctic Regions. The typical group (*gracilis* and allies) has Rs very long and the wings handsomely patterned. Edwards is inclined to restrict the subgeneric name to this latter group, leaving the equally or more abundant species with plain wings and Rs of a shorter length in the typical subgenus.

¹ Contribution from the entomological laboratory, Massachusetts Agricultural College.

Mitopeza Edwards includes five species, of which one is described herewith from Luzon. All the known species are from the Oriental Region. The typical form, having macrotrichia in the distal cells of the wing, with very blunt unchitinized cerci, and with a very remarkable condition of the spermothecal ducts in the female, is very distinct. However, *longicornis* Brunetti lacks the macrotrichia and has the spermothecal ducts reduced in number and size. This reduction is carried still further in *rizalensis* sp. nov. The Bornean *mjöbergi* Edwards has a very distinct and peculiar venation (Plate 1, fig. 4).

Oropeza Needham has about a score of species that are nearly evenly distributed in the eastern Nearctic and eastern Palæarctic Regions.

Trichodolichozepeza Alexander, as known, is entirely Ethiopian, with the majority of the species occurring in South Africa.

Megistomastix Alexander is represented only by two species in the Greater Antilles of the Neotropical Region.

These subgeneric groups may be separated by means of the following key:

1. Apical cells of wings with macrotrichia..... 2.
Apical cells of wing without macrotrichia..... 4.
2. Cell 1st M_2 closed 3.
Cell 1st M_2 open by atrophy of basal section of M_3 .
Trichodolichozepeza Alexander.
3. R_s short, transverse, not exceeding one-half R_{2+3} ; Sc_2 ending opposite origin of R_s ; m-cu connecting with M_{3+4} at or close to fork, always beyond the fork of M..... *Megistomastix* Alexander.
 R_s long, exceeding one-half R_{2+3} , Sc_2 nearly opposite its fork; m-cu connecting with M far before its fork, at the fork in *nigromaculata* Edwards *Mitopeza* Edwards (in part) (*nitidirostris* et al.).
4. Cell 1st M_2 closed 5.
Cell 1st M_2 open by atrophy of basal section of M_3 6.
5. R_s short, Sc_2 ending opposite or just beyond its origin; m-cu beyond fork of M *Oropeza* Needham.
 R_s long, subequal to or nearly as long as R_{2+3} Sc_2 ending nearly opposite its fork; m-cu far before fork of M.
Mitopeza Edwards (in part) (*longicornis*).
6. R_s short, transverse, Sc_2 opposite or close to its origin.
Dolichozepeza Curtis.
 R_s longer, subequal to or longer than R_{2+3} , Sc_2 ending beyond mid-length 7.
7. Branches of medial field regularly pectinate, r-m connecting posteriorly with the basal section of M_{1+2} (Plate 1, fig. 3).... *Nesozepeza* Alexander.
Branches of medial field not pectinate, r-m connecting with M_1 some distance beyond origin (Plate 1, fig. 4).
Mitopeza Edwards (in part) (*mjöbergi*).

Scamboneura Osten Sacken might also be construed as falling within the limits of *Dolichopeza*, but I would believe that it represents a separate branch of the Dolichopezaria.

DOLICHOPEZA (MITOPEZA) RIZALENSIS sp. nov. Plate 1, fig. 1; Plate 2, fig. 23.

General coloration dark brown; legs with the tips of the tibiæ and all tarsi snowy white; wings grayish subhyaline, with a heavy dark brown pattern in the costal and apical portions; sparse macrotrichia in cells of wing at apex.

Male.—Length, about 8 millimeters; wing, 10.5; antenna, about 4.5.

Female.—Length, about 9 millimeters; wing, 10 to 11.

Rostrum brownish yellow; palpi black. Antennæ (male) a little more than one-half the length of body; basal segments testaceous, beyond the first flagellar passing into black; flagellar segments long-cylindrical, with a delicate erect pubescence and a group of three or four relatively short verticils at base on outer face of segments, these much shorter than the segments alone. Head blackish, sparsely pruinose behind on sides, the front yellowish.

Mesonotal præscutum dark brown, with indications of four dark reddish brown stripes; posterior sclerites of mesonotum more uniformly brown. Pleura testaceous brown. Halteres elongate, dark brown, the extreme base of stem pale yellow. Legs with the coxæ and trochanters testaceous yellow; femora dark brown, paler basally; tibiæ brown at base, the tips narrowly snowy white; tarsi snowy white. In the male the tibiæ are chiefly white, the basal third more darkened. Wings (Plate 1, fig. 1) grayish subhyaline, heavily patterned in costal and apical portions with dark brown; cells C and Sc dark, the bases paler; radial field heavily darkened, especially in female, with conspicuous whitish spots before and beyond the stigma; cord and veins beyond it seamed with brown. Sparse macrotrichia in outer ends of cells R_3 to $2d M_2$, inclusive. Venation: Rs subequal to or longer than R_{2+3} ; cell $1st M_2$ relatively small.

Abdominal segments chiefly blackened, especially on posterior portion, the base laterally brightening to obscure yellow; hypopygium dark. Male hypopygium (Plate 2, fig. 23) with the tergite, *9t*, trifold, the pale cushionlike median lobe projecting caudad beyond the level of the laterals, densely clothed with microscopic erect setulæ; lateral lobes with less numerous coarse setæ. Outer dististyle, *od*, profoundly bifid. Inner dististyle, *id*, very irregular in outline.

Ovipositor with blunt fleshy lobes; spermathecal ducts relatively few.

LUZON, Rizal Province, Novaliches, August 8 and 9, 1930 (A. C. Duyag); holotype, male; allotype, female; paratypes, 1 male and 1 female.

Dolichopeza (Mitopeza) rizalensis agrees with the subgenotype, *D. (M.) nitidirostris* (Edwards), and the more recently described *D. (M.) nigromaculata* (Edwards) in the presence of macrotrichia of the apical cells of the wing, differing from both in the snowy-white tarsi and tibial apices. In the latter character, the present species agrees with *D. (M.) longicornis* (Brunetti), which differs in having no macrotrichia in apical cells of wing and with the male antennæ longer than the entire body. The following key will suffice to separate the known species of *Mitopeza*:

1. Cell 1st M₂ open by the atrophy of the basal section of M₃ (Borneo).
mjöbergi (Edwards).
- Cell 1st M₂ closed 2.
2. Apical cells of wing without macrotrichia (Assam).
longicornis (Brunetti).
- Distinct though sparse macrotrichia in apical cells of wing..... 3.
3. Legs black 4.
- Legs with the tarsi and tips of tibiæ extensively whitened (Luzon).
rizalensis sp. nov.
4. Head blackish; præscutum with four velvety-black spots, one pair in humeral region, the other before the wings; m-cu at fork of M (Perak) *nigromaculata* (Edwards).
- Head dark brown; thorax dark brown, the præscutum with indications of three darker stripes; m-cu far before fork of M (Kedah).
nitidirostris (Edwards).

DOLICHOPEZA (NESOPEZA) MELANOSTERNA sp. nov. Plate 1, fig. 2; Plate 2, fig. 24.

Male.—Length, about 8 to 9 millimeters; wing, 9.5 to 11.

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

Generally similar and allied to *D. (N.) angustaxillaris* Alexander (Luzon), differing especially in the larger size, details of venation, as the deeper forks of M, the much darker coloration, including the entirely blackened eighth sternite, and the structure of the male hypopygium, especially the ninth tergite.

Antennæ longer than in *angustaxillaris*, the flagellar segments correspondingly lengthened. Mesonotum dark brown, the pleura pale, the dorsopleural region darkened; ventral sternopleurite, meron, and anepisternum with darkened areas. Legs with the white proximal ends of fore basitarsi narrow, of the mid basitarsi obsolete or with a mere genual brightening. Wings

(Plate 1, fig. 2) strongly tinged with blackish; medial forks deep. Abdominal tergites chiefly blackened, with a narrow transverse yellow annulus on basal half; hypopygium black, including the entire eighth sternite. Male hypopygium (Plate 2, fig. 24) with the tergite, 9t, blackened, the lateral lobes broad, simple, their ventral margins heavily blackened and microscopically toothed; median lobe small, acute. Outer dististyle, *od*, shorter and stouter than in *angustaxillaris*.

LUZON, Laguna Province, Ube, February 3 to 12, 1930 (*F. Rivera*); holotype, male; allotype, female; paratypes, 8 males.

LIMONIINÆ

LIMONIINI

LIMONIA (LIMONIA) BILOBULIFERA *sp. nov.* Plate 1, fig. 5; Plate 2, fig. 25.

General coloration pale ochereous, with a conspicuous black dorsal stripe on pleura; knobs of halteres infuscated; legs chiefly yellow, the femoral tips insensibly darkened; wings whitish subhyaline, the small stigma circular in outline; cell 1st M_2 long; male hypopygium with the outer dististyle a small, hairy, bilobed structure; inner style with the body small, produced into a long ribbonlike portion.

Male.—Length, about 4.2 to 4.4 millimeters; wing, 5 to 5.3.

Rostrum reddish brown; palpi a little darker. Antennæ black, the outer segments paling to brown; relatively elongate for a member of this genus, if bent backward extending nearly to the wing root; flagellar segments passing through oval to cylindrical, the verticils of the outer segments shorter than the segments alone; terminal segment elongate, about one-half longer than the penultimate. Head blackish, sparsely pruinose; eyes (male) contiguous on vertex or nearly so, the ommatidia coarse.

Mesonotum pale ochereous, scarcely variegated with darker, the scutellum and median area of scutum more testaceous. Pleura pale yellow, with a broad blackish dorsolongitudinal stripe. Halteres pale, the knobs infuscated. Legs with the coxæ and trochanters yellow; femora yellow, the tips insensibly darker; tibiæ and tarsi obscure yellow, the terminal tarsal segments infuscated; claws elongate, with a long conspicuous spine at near one-third the length. Wings (Plate 1, fig. 5) whitish subhyaline, the prearcular and costal regions more yellowish; stigma brown, circular; veins dark brown, paler in the flavous areas. Venation: Sc_1 ending about opposite two-thirds the length of the long arcuated R_s , Sc_2 at its tip; free tip of Sc_2 and R_2 in transverse alignment; cell 1st M_2 unusually long, the second

section of M_{1+2} being equal to the third section; basal section of M_3 longer than m , gently arcuated; $m-cu$ at fork of M ; vein $2d$ A at origin converging toward 1st A, the cell relatively long and narrow.

Abdominal segments bicolorous, dark brown, the caudal margins of the individual segments narrowly obscure yellow; hypopygium chiefly yellow, the basistyles conspicuously dark brown. Male hypopygium (Plate 2, fig. 25) with the basistyles, b , covered with short dense setulæ, in addition to scattered major setæ; ventromesal lobe, b , large, flattened, basal in position, weakly bilobed at apex. Two dististyles, the outer, dd , a small, unequally bilobed hairy structure; inner style, vd , with the base a trifle enlarged, thence long-produced into a slender blade, the inner margin before midlength with a small pale spinous point. Gonapophyses, g , with the mesal-apical lobe elongate, slender, transversely ribbed.

LUZON, Laguna Province, Ube, February 3, 1930 (*F. Rivera*); holotype, male; paratype, male.

Limonia (Limonia) bilobulifera is very different from the other regional species in the structure of the male hypopygium.

LIMONIA (LIMONIA) MELANOPLEURA *sp. nov.* Plate 1, fig. 6; Plate 2, fig. 26.

General coloration brownish black, including most of the thoracic pleura; halteres and legs brownish black; claws simple; wings with a strong blackish tinge, the circular stigma darker; Sc_1 ending about opposite midlength Rs , Sc_2 at its tip; male hypopygium with the ventromesal lobe of basistyle very large and stout; ventral dististyle small, setiferous, produced into a long slender rostral prolongation, without spines.

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

Female.—Length, about 5 millimeters; wing, 4.8.

Rostrum and palpi black. Antennæ black throughout; flagellar segments (male) oval, the longest verticils slightly exceeding the segments and unilaterally arranged; the female has the segments short-oval. Head black, sparsely pruinose; eyes of both sexes contiguous or nearly so, at most separated by a capillary strip of anterior vertex.

Mesonotum brownish black. Pleura chiefly black, the ventral sternopleurite and dorsopleural region paler, testaceous brown. Halteres brownish black, the extreme base of stem pale. Legs with the coxæ brownish testaceous, the trochanters somewhat paler; remainder of legs brownish black; claws small, without distinct spines. Wings (Plate 1, fig. 6) with a strong

blackish tinge, the circular stigma darker brown; veins dark brown. Venation: Sc_1 ending about opposite midlength of R_s , Sc_2 at its tip; free tip of Sc_2 slightly proximad of R_2 ; m-cu just before the fork of M; vein 2d A long, converging toward 1st A at origin.

Abdomen, including the hypopygium, black. Male hypopygium (Plate 2, fig. 26) with the tergite, 9t, unusually extensive, broad at base, strongly narrowed outwardly, the two low lobes separated by a small emargination; a submarginal series of about six strong setæ on either side. Basistyle, *b*, relatively long and slender, the ventromesal lobe very stout, occupying almost the entire mesal face of the style. Ventral dististyle, *vd*, a small oval lobe with long conspicuous setæ, the rostral prolongation long, slender, only gently curved, with no developed spines.

LUZON, Laguna Province, Ube, April 14, 1930 (*R. C. McGregor*); holotype, male; allotype, female.

Limonia (Limonia) melanopleura is well-distinguished by the small size, very extensive black coloration, and the structure of the male hypopygium. I cannot indicate any closely allied regional species.

LIMONIA (LIMONIA) TREMULA sp. nov. Plate 1, fig. 7.

General coloration of mesonotal præscutum brown, variegated with sublateral and a posterior median yellow stripe; pleura yellow, with a conspicuous longitudinal dark stripe; halteres dusky; legs yellow; wings grayish yellow, with a restricted brown pattern; R_s angulated and weakly spurred at origin; m-cu about one-half its length beyond the fork of M; abdomen brownish black, the segments narrowly ringed caudally with yellow.

Female.—Length, about 5.5 millimeters; wing, 6.3.

Mouth parts small, the rostrum reddish brown; palpi black. Antennæ black throughout; basal flagellar segments subglobular to short-oval, the outer segments more elongate; segments with two conspicuous verticils on outer face, unilaterally arranged. Head fulvous brown, the center of the vertex extensively darkened.

Pronotum brown. Mesonotal præscutum brown, variegated with brownish yellow, the latter including sublateral stripes that meet in front and a median stripe on posterior half of sclerite; the darkened portions include the lateral margins to the anterior region and submedian stripes that become approximated in front, behind crossing the suture onto the scutal lobes; median region

of scutum and scutellum obscure yellow, the latter with each lateral third darkened; postnotal mediotergite testaceous brown, more yellowish laterally and on the dorsal half of the pleurotergite. Pleura obscure yellow, with a conspicuous dorsolongitudinal dark stripe that extends to the abdomen, including the ventral half of the pleurotergite; ventral sternopleurite a little darkened. Halteres dusky, the base of stem restrictedly pale. Legs with the coxæ yellow, the fore coxæ a trifle darkened; trochanters yellow; remainder of legs obscure yellow, the femoral tips rather broadly but insensibly clearer yellow; terminal tarsal segments a trifle darkened; claws relatively slender, with a basal tooth that is further prolonged into a slender seta. Wings (Plate 1, fig. 7) grayish yellow, with a restricted and relatively diffuse brown pattern, including the stigma, cord, and outer end of cell 1st M_2 ; origin of Rs and fork of Sc; basal portion of wing and costal region a little darkened; veins cream-colored, a little darkened in the clouded areas. Macrotrichia of veins relatively long and conspicuous, including Rs except on its basal section. Venation: Sc_1 ending about opposite three-fifths the length of Rs, Sc_2 at its tip; Rs angulated and weakly spurred at origin; free tip of Sc_2 and R_2 in approximate transverse alignment; cell 1st M_2 large, subrectangular, a little longer than vein M_3 beyond it; m-cu about one-half its length beyond the fork of M, subequal to the distal section of Cu_1 ; vein 2d A strongly sinuous, at origin parallel to vein 1st A or nearly so.

Abdomen brownish black, the segments narrowly ringed caudally with yellow; genital segments ochreous. Ovipositor with the tergal valves slender, gently upcurved, reddish horn color; sternal valves large, straight, conspicuously blackened at base.

LUZON, Laguna Province, Ube, February, 1930 (*F. Rivera*); holotype, female.

Limonia (Limonia) tremula is amply distinct from described regional species, agreeing in some respects with *L. (L.) luteivittata* Alexander, but differing in all details of coloration and venation.

LIMONIA (LIBNOTES) UNISTRIOLOATA sp. nov. Plate 1, fig. 8; Plate 2, fig. 27.

General coloration of mesonotal præscutum obscure yellow, with a single complete black stripe, on either side behind bordered by clear golden yellow; rostrum, palpi, antennæ, knobs of halteres and legs black; wings with a faint brown suffusion; Sc_1 long; Rs angulated at origin; cell 1st M_2 small, rectangular, less than one-half the distal section of M_{1+2} ; anal veins gently diver-

gent; male hypopygium with the ventral dististyle large and fleshy, the rostral prolongation with two very unequal spines.

Male.—Length, about 6 millimeters; wing, 6.8.

Female.—Length, about 6.3 millimeters; wing, 7.

Rostrum and palpi black. Antennæ black throughout; flagellar segments subcylindrical, becoming longer outwardly; verticils of basal segments slightly exceeding the segments; terminal segment pointed at apex, about one-half longer than the penultimate. Head black, sparsely pruinose, the anterior vertex more silvery, reduced to a narrow strip.

Pronotum black, the anterior lateral pretergites yellow. Mesonotal præscutum obscure yellow, with a single broad and complete black stripe, on either side on posterior two-thirds clear golden yellow; lateral portions of sclerite weakly infumed; scutal lobes black; median region of scutum paler; scutellum and postnotal mediotergite blackened. Pleura chiefly brown, the posterior dorsopleural region and the ventral sternopleurite obscure yellow. Halteres pale, the knobs dark brown. Legs with the fore coxæ infuscated, the remaining coxæ and all trochanters yellow; remainder of legs dark brown, only the femoral bases restrictedly pale. Wings (Plate 1, fig. 8) with a faint brown suffusion, the circular stigma a trifle darker; veins pale brown. Venation: Sc_1 ending opposite r-m, Sc_2 far from its tip, Sc_2 about opposite midlength of the angulated Rs; free tip of Sc_2 and R_2 in transverse alignment; cell 1st M_2 relatively small, less than half the distal section of vein M_{1+2} ; m and basal section of M_3 subequal, straight, in approximate transverse alignment; m-cu at one-third the length of cell 1st M_2 ; anal veins parallel to gently divergent at origin.

Abdomen dark brown, the sternites obscure yellow; hypopygium dark. Male hypopygium (Plate 2, fig. 27) with the tergite, 9t, extensive, the caudal margin with a deep V-shaped notch, the lateral lobes with coarse setæ. Basistyle, b, relatively small. Ventral dististyle, vd, a large fleshy lobe, the rostral prolongation with two unequal gently curved spines. Dorsal dististyle a strongly curved hook, the tip acute. Gonapophyses, g, with the concave margin of the mesal-apical lobe with minute points.

LUZON, Mountain Province, Ifugao Subprovince, Huangduan, April 5, 1930 (*F. Rivera*); holotype, male; allotype, female.

Allied to species such as *L. (L.) neofamiliaris* Alexander and *L. (L.) subfamiliaris* Alexander, likewise from Luzon, differing conspicuously in the coloration and details of structure of the male hypopygium.

LIMONIA (LIBNOTES) MELANCHOLICA sp. nov. Plate 1, fig. 9; Plate 2, fig. 28.

General coloration polished black; rostrum, palpi, antennæ, knobs of halteres, and legs blackened; wings with a faint dusky tinge, cells C and Sc darker; Sc₁ ending some distance beyond r-m, Sc₂ opposite the fork of Rs; cell 1st M₂ rectangular, less than one-half vein M₁₊₂ beyond it; m and basal section of M₃ in nearly transverse alignment; m-cu at about one-fourth to one-fifth the length of cell 1st M₂; anal veins gently divergent; male hypopygium with the ventral dististyle large and fleshy, the rostral prolongation with two straight spines of unequal diameter.

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

Female.—Length, about 6.5 to 6.8 millimeters; wing, 6.5.

Rostrum, palpi, and antennæ black; flagellar segments oval, becoming more elongate outwardly; longest verticils exceeding the segments in length and unilaterally arranged. Head black, heavily dark gray pruinose; anterior vertex narrow, light gray.

Pronotum black. Mesonotum polished black, the median region of scutum obscure yellow. Pleura chiefly black, the propleura, dorsal pteropleurite, and dorsopleural membrane brownish yellow. Halteres yellow, the knobs dark brown. Legs with the fore and hind coxæ yellow, the mid-coxæ slightly darkened; all trochanters yellow; remainder of legs brownish black, the femoral bases restrictedly pale; claws relatively long and slender, with an acute subbasal tooth, with additional microscopic basal denticles. Wings (Plate 1, fig. 9) with a faint dusky tinge, cells C and Sc more infumed; wing tip and posterior margin to vein Cu slightly clouded; a dark seam along vein Cu; stigma sub-circular in outline, slightly darker than the ground color; veins dark brown. Venation: Sc₁ ending some distance beyond r-m, Sc₂ opposite the fork of Rs, Sc₁ a little longer than m-cu; free tip of Sc₂ and R₂ in approximate transverse alignment; cell 1st M₂ rectangular, less than one-half vein M₁₊₂ beyond it; m and basal section of M₃ in nearly transverse alignment; m-cu at from one-fourth to one-fifth the length of cell 1st M₂; anal veins gently divergent.

Abdomen black, the sternites brown; genitalia of both sexes darkened. Male hypopygium (Plate 2, fig. 28) with the caudal emargination of the tergite, 9t, broadly V-shaped; marginal setæ of lobes strong and powerful; a group of about three small median setæ. Ventral dististyle, *vd*, large and fleshy, the rostral prolongation with two nearly straight spines, of nearly equal length but unequal diameter, the inner slender to setiform; setæ

of apex of prolongation relatively sparse. Dorsal dististyle a chitinized sickle, sinuously to subangularly bent, the long acute tip slightly decurved. Gonapophyses, *g*, with the apex of each slightly blackened, the surface and margin before tip with erect pale points.

LUZON, Tayabas Province, Candelaria, near town, alongside a small stream, June 20 to 25, 1930 (*McGregor and Rivera*); holotype, male; allotype, female; paratypes, 5 of both sexes.

Limonia (*Libnotes*) *melancholica* is allied to *L. (L.) neofamiliaris* Alexander and *L. (L.) subfamiliaris* Alexander, together with the species described herewith as *L. (L.) unistriolata* sp. nov., differing in the almost uniformly black color, in addition to details of the venation and male hypopygium.

LIMONIA (LIBNOTES) PERRARA sp. nov. Plate 1, fig. 10.

General coloration of præscutum yellow in front, with four brown stripes behind; pleura yellow, with two black longitudinal stripes; halteres yellow; legs yellow, the femora with a broad dark brown subterminal ring; wings yellow, handsomely patterned with brown; Rs only slightly arcuated; m-cu just before midlength of cell 1st M_2 .

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

Female.—Length, about 7.5 millimeters; wing, 9.

Rostrum and palpi ochereous, the latter narrowly darkened at tips. Antennæ with the scape pale, the flagellum somewhat darker; flagellar segments short-oval to subcylindrical, crowded, gradually increasing in size outwardly, the terminal segment long; verticils relatively short and inconspicuous, not or scarcely exceeding the segments in either sex. Eyes of male large, contiguous; of female separated for a long distance only by a capillary strip of vertex; posterior portion of head gray.

Mesonotal præscutum in front chiefly yellow, more saturated anteriorly; four pale brown stripes on posterior half; scutal lobes brown, the median portion, with adjoining parts of præscutum and scutellum, whitish; caudal margin of scutellum narrowly blackened on either side; postnotal mediotergite gray, with a capillary pale median line. Pleura yellow, with two conspicuous blackish longitudinal areas, including a narrow dorsal stripe from the propleura to the abdomen, the second area including almost all of the sternopleurite. Halteres pale yellow. Legs with the coxæ and trochanters pale yellow; femora yellow, with a broad dark brown subterminal ring, the apical yellow

portion very narrow; tibiae yellow; basal segments of tarsi yellow, the terminal three and distal end of the second blackened; claws with a conspicuous spine at near one-third the length, with additional smaller spines nearer the base. Wings (Plate 1, fig. 10) creamy yellow, with a handsome brown pattern, including four areas in cell Sc, the first two not encroaching on cell C, the second sending a triangular cloud along Rs; fourth area including R_2 and tip of Sc_2 ; cord and outer end of cell 1st M_2 seamed with brown; a broad seam on R_{2+3} for almost the entire length; a series of five oval clouds on distal portions of veins R_3 to M_4 , inclusive, placed shortly before the margin; posterior margin of wing almost to tip narrowly clouded with brown; brown clouds at ends of veins Cu_1 and 2d A, the latter extended basad for about one-half the length of the vein; axilla darkened; veins yellow, brown in the clouded areas. Venation: Sc_1 ending just before the proximal end of m, Sc_2 at its tip; free tip of Sc_2 and the spur of R_{1+2} subequal, or the latter greatly reduced so that R_2 and the free tip of Sc_2 are in approximate transverse alignment; R_2 unusually long; Rs gently curved; m nearly twice as long as the basal section of M_3 , gently arcuated; m-cu just before midlength of cell 1st M_2 ; cell 1st A at margin very much wider than cell Cu; anal veins at base almost parallel, thence divergent.

Abdomen dark brown, the caudal margins of the tergites in the male yellow; sternites paler; in female, the abdomen is more uniformly yellow, variegated laterally with blackish areas. Ovipositor dark, the cerci weakly bidentate at tips, there being a small dorsal subterminal denticle, as in the group.

LUZON, Mountain Province, Benguet Subprovince, Pauai, altitude 8,000 feet, April 21 and 22, 1930 (*F. Rivera*); holotype, male; allotype, female.

Limonia (Libnotes) perrara is a member of a group of the subgenus that includes *L. (L.) amatrix* Alexander (Japan), *L. (L.) klossi* Alexander (Federated Malay States), *L. (L.) terræ-reginæ* Alexander (Queensland), and possibly other species, in which the ovipositor has the cerci distinctly toothed on dorsal margin before apex. The nearest relative of the present species appears to be *amatrix*, which differs in venational details, as the very strongly arcuated Rs, the position of m-cu at about one-fourth the length of cell 1st M_2 , and other details, and in the very distinct leg pattern.

LIMONIA (DICRANOMYIA) ORTHIA sp. nov. Plate 1, fig. 11; Plate 2, fig. 29.

General coloration dark brown; rostrum and antennæ black; halteres pale; wings milky white, with a heavy dark pattern that is chiefly marginal in distribution, there being a series of four darker costal areas, with gray clouds at wing tip and at ends of anal veins; Sc_2 far from tip of Sc_1 ; male hypopygium with the spines of the rostral prolongation short, placed close together on the small prolongation.

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

Rostrum, palpi, and antennæ black throughout. Head brownish gray; anterior vertex narrow.

Mesonotum dark brown, the scutellum somewhat paler. Pleura blackish, pruinose. Halteres pale. Legs with the coxæ brownish testaceous, the fore coxæ darker; trochanters testaceous; remainder of legs pale brown; claws with a single long basal spine. Wings (Plate 1, fig. 11) with the ground color milky white, the prearcular and costal regions more yellowish; a heavy brown pattern that is chiefly marginal in distribution, including a series of four areas along the costal margin, the first being at arculus, the second at Sc_2 , the third at end of Sc_1 and origin of R_s , the last stigmal; wing tip in outer end of cell R_3 clouded with gray; large gray clouds at ends of anal veins; cord and outer end of cell 1st M_2 seamed with gray; veins pale, darker in the clouded areas, yellow in the brightened costal portions. Venation: Sc_1 ending opposite origin of R_s , Sc_2 far from its tip, at near midlength of vein R ; m-cu close to fork of M ; cell 2d A moderately wide.

Abdomen dark, the incisures paler; male hypopygium with the basistyles dark, the large ventral dististyles paler. Male hypopygium (Plate 2, fig. 29) with the basistyles, *b*, small, the ventromesal lobe large. Dorsal dististyle a very strongly curved pale sickle, the extreme tip upcurved. Ventral dististyle, *vd*, a large fleshy lobe, the rostral prolongation small, the two spines straight, subequal in length and size, about as long as the prolongation itself. Gonapophyses, *g*, with the mesal-apical lobe gently curved to the acute tip.

LUZON, Mountain Province, Benguet Subprovince, Pauai, altitude 8,000 feet, April 21, 1930 (*F. Rivera*); holotype, male.

Limonia (*Dicranomyia*) *orthia* is allied to the larger Japanese species, *L. (D.) mesosternata* (Alexander) and *L. (D.) mesosternatoides* (Alexander), differing very conspicuously in the structure of the male hypopygium.

LIMONIA (DICRANOMYIA) NEOPUNCTULATA sp. nov. Plate 1, fig. 12; Plate 2, fig. 30.

Male.—Length, about 4.5 millimeters; wing, 4.8.

Generally similar and allied to *L. (D.) punctulata*, differing especially in the details of structure of the male hypopygium. The general coloration, wing pattern, and venation (Plate 1, fig. 12) are quite the same in both species.

Male hypopygium (Plate 2, fig. 30) with the dorsal dististyle, *dd*, subangularly bent beyond midlength. Ventral dististyle, *vd*, relatively small, the rostral prolongation with a single short stout spine from a raised tubercle, the spine about equal in length to the prolongation, evidently formed by the coalescence of two spines, the suture being evident. Gonapophyses, *g*, with the mesal apical lobe simply bifid.

Limonia (D.) punctulata (de Meijere) is well distinguished by the details of the hypopygium (Plate 2, fig. 31), especially the very slightly curved dorsal dististyle, the long, very slender rostral spine, *vd*, that is strongly curved at tip and without a basal tubercle, and the irregularly toothed gonapophyses, *g*.

Limonia (D.) fullowayi (Alexander) has the male hypopygium (Plate 2, fig. 32) with the dorsal dististyle, *dd*, very strongly curved to an acute point; rostral spine, *vd*, single, long, and very slender, without basal tubercle, entirely straight; gonapophyses, *g*, not evidently bifid at tips.

MINDANAO, Davao district, Calian, Lawa, May 3, 1930, at light (*C. F. Clagg*); holotype, male.

It is very evident that several species of *Limonia* center about *punctulata* in the Oriental-Eastern Palæarctic faunal regions. The three species compared above, having a single spine on the rostral prolongation of the ventral dististyle, and with the gonapophyses variously toothed at apices, seem to be well-separated by the genitalic differences as described. *Limonia (D.) subpunctulata* Alexander (Formosa) is distinct in the bispinous rostral prolongation. *Limonia (D.) fascipennis* (Brunetti), described from northern India, is possibly distinct from any of the above. It was described from a single broken female and since the name *fascipennis* has been used in *Limonia (Limnobia)* on two previous occasions, the name should be dropped until the species is rediscovered at or near the type locality.

HELIUS (EURHAMPHIDIA) FUSCOFEMORATUS sp. nov. Plate 1, fig. 13.

Unusually large (wing, female, over 6.5 millimeters); rostrum relatively elongate, about one-half longer than the remainder of head; mesonotum dark brown, restrictedly paler laterally; legs

black, the tips of the tibiæ narrowly snowy white, this including about the distal sixth or less of the segment.

Female.—Length, about 7 to 7.5 millimeters; wing, 6.5 to 7.

Rostrum unusually long for a member of this subgenus, about one-half longer than the remainder of head, black; palpi black. Antennæ with the basal segment obscure yellow beneath, the remainder of the organ black; flagellar segments oval, with verticils that exceed the segments. Head brownish gray.

Pronotum dark brown, restrictedly yellow behind. Mesonotum chiefly dark brown, the lateral portions of præscutum paler. Pleura brownish yellow. Halteres dusky, the base of the stem restrictedly yellow. Legs with the coxæ and trochanters yellow; femora brownish black, with no sign of brightening at genua; tibiæ black, the tips narrowly snowy white, on the posterior legs this including less than the distal sixth; tarsi white, the terminal segments blackened. Wings (Plate 1, fig. 13) with a pale brownish tinge, the oval stigma darker brown; prearcular and costal regions slightly more yellowish; a yellowish seam in cell M adjoining vein Cu; veins brown. Venation: Sc₁ ending opposite r-m, Sc₂ at its tip; basal section of M₁₊₂ subequal to second section, the inner end of cell 1st M₂ being pointed; m-cu before midlength of cell 1st M₂.

Abdominal tergites dark brown, the sternites yellow, the subterminal segments more darkened. Ovipositor with the tergal valves slender, brownish black, their acutely upcurved tips pale.

LUZON, Mountain Province, Benguet Subprovince, Pauai, altitude 8,000 feet, April 26, 1930 (*F. Rivera*); holotype, female; paratype, female.

Helius (Eurhamphidia) fuscofemoratus may be confused only with *H. (E.) nigrofemoratus* (Alexander), which differs conspicuously in the small size, the short rostrum, and the increased amount of white on apices of tibiæ.

HELIUS (EURHAMPHIDIA) INDIVISUS sp. nov. Plate 1, fig. 14; Plate 2, fig. 33.

Male.—Length, about 4.6 millimeters; wing, 5.4.

Similar to *H. (E.) diacanthus* (Alexander) and *H. (E.) abnormalis* (Brunetti) in general appearance, differing especially in the structure of the male hypopygium.

Rostrum pale brown, a little longer than the remainder of head; palpi dark brown. Antennæ black. Head dark gray, the narrow anterior vertex more silvery gray.

Thoracic dorsum reddish brown, the median area of præscutum a little darker. Pleura more testaceous yellow, the dorsal re-

gion a little darker. Halteres pale, the knobs dusky. Legs with the coxæ pale; femora brown, the tips broadly and conspicuously white, tibiæ brown, the bases narrowly white, the amount about one-third that of the femoral tips; tibial tips broadly snowy white; tarsi white, the terminal segments darkened. Wings (Plate 1, fig. 14) whitish subhyaline, the stigmal region darker; veins pale brown. Venation: Sc_1 ending about opposite r-m, Sc_2 at its tip; m short to very short, cell 2d M_2 narrowed at base; cell 1st M_2 short, subquadrangular, m-cu at near midlength.

Abdominal tergites light brown, the sternites pale yellow. Male hypopygium (Plate 2, fig. 33) with the lateral spines of the tergite, 9*t*, simple, not bearing basal spinules or lobes, as in *diacanthus* and *abnormalis*. Outer dististyle, *od*, with delicate but distinct erect setæ for almost the whole length; in *diacanthus* and *abnormalis* the style is glabrous. Inner dististyle, *id*, narrow, terminating in two larger setæ, the margin at base almost smooth, not expanded and provided with conspicuous tubercles, as in *diacanthus*.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,800 feet, July 3, 1930 (*C. F. Clagg*); holotype, male.

ERIOPTERINI

TRENTEPOHLIA (MONGOMA) DISTALIS sp. nov. Plate 1, fig. 15.

General coloration dark brown to brownish black; antennæ black throughout; halteres dusky; legs black, the terminal tarsal segments paling to brownish yellow; wings with a dusky tinge, the costal region more blackened; R_3 not conspicuously arcuated; cell 1st M_2 small, m-cu beyond the fork of M; abdominal tergites black.

Male.—Length, about 7 millimeters; wing, 7.2.

Female.—Length, about 7 millimeters; wing, 7.2.

Rostrum and palpi dark, the tips of the labial palpi pale yellow. Antennæ black; flagellar segments long-oval to subcylindrical, with elongated verticils. Head black, the anterior vertex reduced to a linear strip.

Mesonotum dark brown to brownish black, the median region of scutum and lateral portions of scutellum somewhat paler. Pleura dark yellowish brown, the propleura and dorsopleural membrane dark brown. Halteres dusky. Legs with the fore coxæ dark brown, the remaining coxæ and all trochanters more testaceous brown; remainder of legs black, the terminal tarsal segments paling to brownish yellow; legs without specially devel-

oped armature of any kind. Wings (Plate 1, fig. 15) with a dusky tinge, cells C and Sc more blackish; the small ill-delimited stigma and an apical suffusion paler brown; veins brownish black. Venation: Sc_1 ending just beyond proximal end of R_2 ; R_s shorter than R_{2+3+4} ; R_2 at or close to the fork of R_{3+4} ; R_3 gently sinuous but not conspicuously arcuated at origin; cell 1st M_2 small, the fusion of R_{4+5} and M_{1+2} subequal to or one-half longer than the second section of M_{1+2} , the proximal end of cell R_5 lying proximad of any other beyond the cell; m-cu from two-thirds to nearly its own length beyond the fork of M, at beyond one-third the length of cell 1st M_2 ; apical fusion of Cu_1 and 1st A slight.

Abdominal tergites and hypopygium black; basal sternites yellow, blackened laterally, beyond the second segment passing into black. In the female, the sternites more uniformly brown, with narrow glabrous apical margins. Ovipositor with the cerci relatively long and slender.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 2 and 3, 1930 (*C. F. Clagg*); holotype, male; allotype, female. "Among ferns and on mossy trees."—Clagg.

By my most recent key to the Philippine species of *Trentepohlia*² the present species runs to couplet 8, disagreeing with both included species in the position of m-cu, and in other characters. It may be noted that there is a slight typographical error in this couplet, the last symbol, M_3 , of the second alternative (*riverai*) correctly being M_{1+2} to agree with the first alternative (*brevifusa*).

GONOMYIA (PROGONOMYIA) TEREBRELLA sp. nov. Plate 1, fig. 16.

General coloration of mesonotum reddish brown; antennæ black throughout; halteres dusky; wings with a strong brown suffusion; Sc long, Sc_1 ending opposite the fork of R_s ; vein R_3 at margin close to R_{1+2} , cell R_2 being very narrow; ovipositor with the tergal valves long and chitinized, the sternal valves reduced to tiny blackened hairy lobes.

Female.—Length, about 5 millimeters; wing, 4.8.

Rostrum and palpi black. Antennæ black throughout, relatively elongate for this sex; flagellar segments oval, the verticils exceeding the segments. Head brown, sparsely pruinose.

Pronotum whitish. Mesonotal præscutum reddish brown, the median area blackened; scutum reddish brown, the centers of the

² Philip. Journ. Sci. 43 (1930) 297-298.

lobes conspicuously blackened; scutellum dark medially at base, the apex broadly testaceous; postnotal mediotergite black, sparsely pruinose. Pleura dark brown, variegated with light and dark areas, the obscure yellow including the dorsopleural membrane and areas dorsad of the mid- and hind-coxæ; the blackened areas occur as spots on the dorsal anepisternum and dorsal pteropleurite. Halteres dusky. Legs with the coxæ infuscated; trochanters obscure yellow; remainder of legs black, the femoral bases broadly obscure yellow. Wings (Plate 1, fig. 16) with a strong brown tinge, the stigmal region vaguely and diffusely darker; veins brownish black. Macrotrichia of costa and veins relatively long and conspicuous. Venation: Sc long, Sc₁ ending opposite the fork of Rs, Sc₂ some distance from its tip, Sc₁ being equal to R₂₊₃₊₄; R₃ and R₄ strongly divergent, R₃ at margin closely approaching R₁₊₂, cell R₃ being very narrow at margin; cell 2d M₂ deep; m-cu a short distance beyond the fork of M, in alignment with the other elements of the cord.

Abdomen black, the subterminal sternites paler; genital sheaths blackened. Tergal valves of ovipositor elongate, straight, reddish horn color; sternal valves reduced to tiny blackened hairy lobes, directed ventrad.

MINDANAO, Davao district, Calian, June 13, 1930, trap lantern set at edge of forest (*C. F. Clagg*); holotype, female.

Gonomyia (Progonomyia) terebrella is closest to *G. (P.) tenebrosa* Edwards (Siam) in the general coloration and structure of the ovipositor, differing in the details of venation, especially the unusually long Sc, which ends opposite the fork of Rs. The fly differs more widely from *G. (P.) brunnescens* Edwards (Borneo) in coloration and venation.

Genus ERIOPTERA Meigen

Subgenus TELENEURA subgen. nov.

Characters as in the typical subgenus, differing especially in the wing venation. Mesonotal præscutum with longitudinal rows of long erect setæ on interspaces. Veins and cells beyond the cord very elongate, the cord lying at or before midlength of the wing (Plate 1, fig. 17). Rs very short, subequal to or only a little longer than R₂₊₃₊₄; cell 1st M₂ open by atrophy of m; m-cu at fork of M; veins M₄ and Cu₁ deflected only slightly, cephalad at their tips; vein 2d A only gently sinuous.

In typical *Erioptera*, Rs is three or more times as long as R₂₊₃₊₄, the slightly oblique cord lying at or beyond three-fifths the length of the wing; vein 2d A very strongly sinuous, the distal third or fourth paralleling the anal margin of wing.

Type of subgenus, *Erioptera fusca* de Meijere (Oriental Region).

Other species pertaining to *Teleneura* are *Erioptera argentifrons* Edwards, *E. melanotænia* sp. nov., *E. nigribasis* Edwards, *E. parallela* Brunetti, *E. punctipennis* Brunetti, and *E. subfusca* Edwards, all Oriental. These species may be separated by means of the following key:

1. Wings variegated with dark areas, either on the membrane itself or as conspicuous darkened hair patches on the veins..... 2.
Wings uniform in color 3.
2. Femora yellow, the tips imperceptibly darkened (British India: Himalayas) *punctipennis* Brunetti.
Femora yellow, with about the basal half blackened (Malay Peninsula and Borneo) *nigribasis* Edwards.
3. General coloration brownish ochreous, without conspicuous markings (British India: Himalayas; Malay Peninsula)..... *parallela* Brunetti.
General coloration dark brown to black; if pale, variegated with black longitudinal markings 4.
4. Halteres with at least the knobs yellow..... 5.
Halteres with the knobs blackened..... 6.
5. Halteres yellow; general coloration of thorax dark brown; male hypopygium without conspicuous modified setæ at apex of basistyle; gonapophyses simple, crook-shaped (Sumatra and Borneo).
subfusca Edwards.
Halteres with the stem black, the knobs yellow; general coloration of thorax black; male hypopygium with a group of about five powerful setæ at apex of basistyle; gonapophyses bispinous, tonglike (Federated Malay States) *argentifrons* Edwards.
6. Thorax brown, the lateral margins of præscutum pale; dorsal thoracic pleura with a narrow blackened longitudinal stripe (Luzon and Mindanao) *melanotænia* sp. nov.
General coloration of thorax uniform dark brown or black (Federated Malay States and Mindanao) *fusca* de Meijere.

ERIOPTERA (TELENEURA) FUSCA de Meijere.

Erioptera fusca DE MEIJERE, Tijdsch. v. Entom. 56 (1913) 351.

La Lun Mountains, Calian, Davao district, Mindanao, altitude 5,800 feet, July 3, 1930 (*C. F. Clagg*). The specimens are almost black, instead of dark brown, but there seems to be no doubt as to the identity.

ERIOPTERA (TELENEURA) MELANOTÆNIA sp. nov. Plate 1, fig. 17; Plate 2, fig. 34.

Mesonotal præscutum light brown, margined with obscure yellow; pleura pale, with a black dorsolongitudinal stripe; knobs of halteres brownish black; wings with a brown tinge.

Male.—Length, about 2.5 millimeters; wing, 3.

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

Rostrum and palpi black. Antennæ black. Head light ochreous, dark brown in center of vertex and on occiput.

Mesonotal præscutum and scutum brown to dark brown, the lateral margins paling to obscure yellow. Pleura obscure yellow, including the dorsopleural region and dorsal pleurotergite lying above, and the dorsal meron and sternopleurite lying below, a broad black dorsal stripe that extends from the propleura to the abdomen; ventral sternopleurite and meron again darkened. Halteres obscure yellow, the knobs brownish black. Legs with the fore coxæ dark, the remaining coxæ and trochanters obscure yellow; femora obscure yellow, this coloration obscured by dark setæ. Wings (Plate 1, fig. 17) with a brownish tinge, the base and costal region somewhat more yellowish brown; veins pale brown, the macrotrichia dark. Venation: As in the subgenus; vein 2d A ending opposite m-cu.

Abdomen brownish black, the hypopygium paler. Male hypopygium (Plate 2, fig. 34) with the tergal plate (9t, one-half figured) margined with conspicuous spines. Apex of basistyle, *b*, without specially modified setæ. Outer dististyle, *od*, pale, at apex expanded into a blackened setiferous head; inner dististyle, *id*, a pale flattened blade, the distal third more narrowed. Longest gonapophysis, *g*, more or less crook-shaped, its apex cultriform, the two together appearing somewhat lyri-form; shorter gonapophysis, *g*, more foot-shaped, the surface with abundant delicate setæ, including a tuft of longer setæ at the region of the "heel."

LUZON, Laguna Province, Ube, February, 1930 (*F. Rivera*); holotype, male; allotype, female; numerous paratypes of both sexes. MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 feet, July 2 to 5, 1930 (*C. F. Clagg*); paratypes, 5 males and females.

ERIOPTERA (EMPEDA) LUNENSIS sp. nov. Plate 1, fig. 18; Plate 3, fig. 35.

General coloration of præscutum brown medially, the lateral portions gray; antennæ black, the first flagellar segment pale yellow; head blue-gray; halteres pale yellow; legs light brown, appearing darker by a covering of scales and setæ; Sc_1 ending opposite origin of Rs; cell R_3 very deep.

Male.—Length, about 2.5 millimeters; wing, 2.8 to 3.

Female.—Length, about 3.5 millimeters; wing, 3.3.

Rostrum and palpi black. Antennæ with the scape and flagellum black, the first flagellar segment abruptly pale yellow. Head light blue-gray.

Pronotum and anterior lateral pretergites whitish. Mesonotal præscutum dark brown medially, the sides light gray to blue-gray; posterior sclerites of mesonotum chiefly darkened, the posterior margin of scutellum more brightened, the postnotal mediotergite light gray pruinose. Pleura dark, sparsely pruinose, the dorsopleural membrane restrictedly pale. Halteres pale yellow. Legs with the coxæ reddish brown, the fore coxæ darker; trochanters reddish brown; remainder of legs light brown, the terminal tarsal segments passing into black; legs with flattened scales, in addition to the usual setæ. Wings (Plate 1, fig. 18) grayish, the base and costal region more yellowish; veins brown. Costal fringe relatively long and conspicuous. Venation: Sc_1 ending opposite origin of R_s , Sc_2 faint, at tip of Sc_1 ; R_2 slightly oblique in position, shorter than R_{2+3+4} and about one-third R ; cell R_3 unusually deep, approaching the condition in typical *Erioptera*, vein R_3 subequal to or only a little shorter than R_s ; cell M_2 open; m-cu at or just before the fork of M .

Abdominal tergites brown, the sternites paler; hypopygium obscure yellow. Male hypopygium (Plate 3, fig. 36) with the outer dististyle, *od*, profoundly bifid, entirely glabrous, both arms flattened and obtuse at tips. Inner dististyle, *id*, a pale flattened blade, the distal half with microscopic sensory setæ.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 to 5,800 feet, July 3 and 4, 1930 (*C. F. Clagg*); holotype, male; allotype, female; paratypes, 12 of both sexes. "Swept from among ferns and undergrowth on margins of small brook; others at trap lantern hung among ferns in dense mossy forest."—Clagg.

Erioptera (Empeda) lunensis is most closely allied to *E. (E.) gracilis* (de Meijere), differing in the coloration and in details of venation, as the shorter Sc and deeper fork of cell R_3 . Both species have conspicuous flattened and striated scales on the legs, interspersed with the usual setæ.

MOLOPHILUS BANAHAOENSIS sp. nov. Plate 1, fig. 19; Plate 3, fig. 36.

Belongs to the *gracilis* group; allied to *M. kempi*; antennæ (male) elongate; general coloration of body, antennæ, halteres, and legs blackish; wings tinged with blackish; vein 2d A relatively short; male hypopygium with the dorsal lobe of basistyle expanded at apex into a glabrous spatulate head; ventral lobe of basistyle with long coarse retrorse setæ.

Male.—Length, about 2.8 millimeters; wing, 3.5; antenna, about 2.5.

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

Rostrum and palpi black. Antennæ with the scapal segments obscure yellow; flagellum black; antennæ (male) nearly as long as entire body; flagellar segments fusiform, the apical necks longer and slenderer than the narrow basal portion. Head black, sparsely pruinose.

Mesonotum black, the humeral region restrictedly paler; pseudosutural foveæ black; anterior lateral pretergites restrictedly obscure yellow. Pleura black, the ventral sternopleurite and meron a little paler. Halteres blackened, the base of the stem obscure yellow. Legs with the coxæ and trochanters obscure yellow; remainder of legs blackened. Wings (Plate 1, fig. 19) with a strong blackish tinge, the veins more seamed with darker, the extreme wing tip pale; veins and macrotrichia dark brown to black. Venation: R_2 and r-m in transverse alignment; vein 2d A relatively short, ending some distance before the proximal end of m-cu.

Abdomen, including hypopygium, black. Male hypopygium (Plate 3, fig. 36) with the basistyle, *b*, produced at apex into four distinct lobes, the outermost a small glabrous spine on outer dorsal margin; immediately laterad of this, on dorsal margin a long hairy fingerlike lobe, the apex, *db*, expanded into an obtuse glabrous spatula; mesal lobe flattened, narrowed outwardly and here provided with several long coarse setæ; ventral lobe, *vb*, longer than the mesal, more or less clavate, at apex with a group of very long, coarse, retrorse setæ (only the bases of which are shown in the figure), the longest about two-fifths the entire lobe. Outer dististyle, *od*, a glabrous blackened spine, the tip acute. Inner dististyle, *id*, subequal in length, yellow, dilated on basal half, the inner margin on basal fifth with a few setæ; apex narrowed into a spine, with a few microscopic spinulæ on outer margin before apex.

LUZON, Laguna Province, Ube (*R. C. McGregor*); holotype, male, February 12, 1930; allotype, female, April 14, 1930.

Molophilus banahaoensis is closely allied to *M. kempfi* Alexander (British India: Eastern Himalayas), differing especially in the structure of the male hypopygium.

MOLOPHILUS PROCERICORNIS sp. nov. Plate 1, fig. 20; Plate 3, fig. 37.

Belongs to the *gracilis* group; general coloration of mesonotum dark brown; antennæ (male) elongate; pleura reddish yellow, variegated with brown; knobs of halteres weakly infus-

cated; male hypopygium large and conspicuous, the dorsal lobe of the basistyle terminating in a flattened glabrous blade; two dististyles, one an acutely pointed black spine.

Male.—Length, about 3.5 millimeters; wing, 4; antenna, about 2.8.

Rostrum reddish brown; palpi black. Antennæ (male) elongate, if bent backward extending to beyond midlength of the body; scapal segments obscure yellow; flagellum black; flagellar segments elongate-fusiform, with long outspreading black verticils at thickest part. Head light gray, the anterior vertex paler.

Anterior lateral pretergites pale yellow. Mesonotal præscutum with the humeral and lateral portions pale yellow, the remainder of disk chiefly covered by three dark brown stripes that are confluent or nearly so; median vitta slightly divided behind; scutal lobes dark brown; scutellum pale; postnotal mediotergite reddish brown. Pleura reddish yellow, variegated with dark brown or dorsopleural membrane and anepisternum; ventral sternopleurite and meron darkened. Halteres pale, the knobs weakly infuscated. Legs with the coxæ and trochanters yellow; remainder of legs obscure yellow, the vestiture chiefly dark; tarsal segments passing into brown. Wings (Plate 1, fig. 20) grayish yellow, the prearcular and costal regions brighter yellow; veins brownish yellow, the macrotrichia a little darker. Venation: R_2 lying distad of the level of r-m; vein 2d A relatively short, ending before the caudal end of m-cu.

Abdominal tergites brownish black, the sternites paler, the large hypopygium obscure yellow, with blackened dististyles. Male hypopygium (Plate 3, fig. 37) with the basistyles, *b*, relatively short and stout; dorsal lobe, *db*, long and relatively slender, setiferous for almost the entire length, the apex a short, sinuous, glabrous blade; ventral lobe, *vb*, short and broad, with abundant long retrorse setæ; an additional ventral lobe (not figured), small and very slender, pale, fleshy, with from six to eight setæ at and near apex, the total length being somewhat less than the main ventral lobe. Two dististyles, the outer, *od*, blackened, from a dilated flask-shaped base, the remainder a sinuous black spine. Inner dististyle, *id*, a little longer, the basal two-thirds or slightly more pale yellow, the gently curved apex blackened. Ædeagus elongate, with a conspicuous lateral flange.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 to 5,800 feet, July 2 to 4, 1930 (*C. F. Clagg*); holotype, male; paratypes, 5 males.

Molophilus procericornis is quite distinct from other members of the *gracilis* group, the chief characters being antennal and hypopygial. Females in the same collection do not seem to be conspecific and are not further discussed.

MOLOPHILUS MENDICUS sp. nov. Plate 3, fig. 38.

Belongs to the *gracilis* group; general coloration of mesonotum brownish gray; antennæ short in both sexes; halteres dusky; wings pale grayish, the veins pale; vein 2d A relatively short; male hypopygium with all lobes of basistyle fleshy and setiferous to their obtuse tips, the outer lobe bearing a blackened spinous point.

Male.—Length, about 2.8 millimeters; wing, 3.4.

Female.—Length, about 3.5 millimeters; wing, 3.5.

Rostrum and palpi dark brown. Antennæ short in both sexes, brown throughout, in the female somewhat paler. Head grayish brown.

Mesonotum brownish gray, the lateral margin and humeral region somewhat brighter, inclosing the relatively small reddish brown pseudosutural foveæ; scutellum obscure yellow, darkened medially; postnotal mediotergite plumbeous brown. Pleura plumbeous. Halteres dusky. Legs pale brown, the color chiefly produced by the vestiture; tips of tibiæ and outer tarsal segments darker. Wings with a pale grayish tinge, the veins very pale; macrotrichia dark brown. Venation: R_2 lying some distance before the level of r-m, R_{2+3+4} thus shortened, about two-thirds the basal section of R_5 ; vein 2d A short, ending before the level of the caudal end of m-cu.

Abdomen dark brown, the genitalia in both sexes more yellowish. Male hypopygium (Plate 3, fig. 38) with the three lobes of the basistyle, *b*, all fleshy, obtuse, provided with setæ to their tips; on margin of outer lobe, on inner face, a curved blackened hook; mesal lobe small and slenderer. Two dististyles, *d*; these entirely pale and generally similar in outline, one a little more expanded on basal half, the distal half slender, with small subappressed spines before apex, at tip with two or three setiferous punctures; second style a straight flattened blade, slightly constricted at near midlength, at apex with a very few weak spinous points. Phallosomic structure a pale cushion that is densely set with microscopic setulæ. *Ædeagus* very long and slender, the base more dilated.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,800 feet, July 3, 1930 (*C. F. Clagg*); holotype, male; allo-

type, female. "Among ferns and undergrowth along margins of small brook."—Clagg.

Molophilus mendicus is a small, insignificant species that is best characterized by the details of structure of the male hypopygium.

MOLOPHILUS TAWAGENSIS sp. nov. Plate 3, fig. 39.

Belongs to the *gracilis* group; general coloration of mesonotum light grayish brown; antennæ (male) short; pronotum and anterior lateral pretergites white; pleura liver brown; halteres with infuscated knobs; wings pale grayish, the costal region clear light yellow, the posterior prearcular region infumed; male hypopygium with only two lobes on the elongate basistyle, both obtuse and with setæ to their tips; a blunt setiferous lobe on mesal face of basistyle near origin; two dististyles.

Male.—Length, about 3.5 millimeters; wing, 4.5.

Rostrum and palpi black. Antennæ (male) short, the basal segments pale, the outer segments darkening to brown. Head pale gray.

Pronotum and anterior lateral pretergites white. Mesonotal præscutum light grayish brown, paling to clearer gray on sides; humeral and lateral portions pale yellow; pseudosutural foveæ relatively large, reddish brown; median region of scutum grayish; scutellum pale testaceous brown; postnotal mediotergite gray. Pleura relatively dark liver brown. Halteres obscure golden yellow, the knobs infuscated. Legs with the coxæ brownish yellow; trochanters obscure yellow; remainder of legs chiefly brown, the terminal tarsal segments more blackened. Wings pale grayish, the costal region clear light yellow; posterior prearcular region darkened; veins pale, the macrotrichia darker. Venation: R_2 faint, lying opposite the basal section of R_5 ; vein 2d A ending just before the caudal end of m-cu.

Abdomen brown, the hypopygium yellow. Male hypopygium (Plate 3, fig. 39) with the basistyles, *b*, relatively elongate, with a very deep incision down the face, separating the lateral and mesal lobes. Lateral lobes slender, much shorter than either dististyle, with setæ to the obtuse tip; mesal lobe flattened; on mesal face of basistyle, closer to base, a broad lobe set with coarse setæ. Outer dististyle, *vd*, more slender, terminating in a long acute spinous point, the surface at near midlength a trifle roughened. Inner dististyle, *id*, broader, with a conspicuous flange on basal half, the terminal bladlike portion with microscopic scattered setæ. Surface of phallosomic structure with delicate microscopic setulæ.

LUZON, Mountain Province, Ifugao Subprovince, Tawag, April 6, 1930 (*F. Rivera*); holotype, male.

Molophilus tawagensis belongs to the *costalis* subgroup, including many species in the fauna of eastern Asia. The details of the male hypopygium furnish the best characters for the separation of the various forms.

Genus STYRINGOMYIA Loew

Styringomyia LOEW, Dipt. Beitr. 1 (1845) 6.

Idiophlebia GRUNBERG, Zoöl. Anzeiger 26 (1903) 524-528.

Pycnocrepis ENDERLEIN, Zoöl. Jahrbucher 32 (1912) 65.

Mesomyites COCKERELL, Proc. U. S. Nat. Mus. 52 (1917) 377.

The now rather numerous Philippine species of *Styringomyia* may be separated in the male sex by means of the following key:

1. Wings with a strong blackish tinge, the basal fourth more yellowish; legs black, the femora with a narrow yellow subterminal ring.
fumipennis Edwards.
Wings yellow or yellowish, immaculate, or spotted and washed with darker 2.
2. General coloration of mesonotum gray; legs uniformly brown; wings unmarked with darker; male hypopygium without specially enlarged setæ on apical lobe of basistyle..... *mcgregori* Alexander.
General coloration of mesonotum yellow, variegated with black; legs yellow, the femora and tibiæ ringed or spotted with brown; wings yellow, patterned with brown, at least with a small darkened spot at arculus; male hypopygium with the basistyle terminating in one or two enlarged spinous setæ..... 3.
3. Wings unmarked, except for a tiny darkened spot at arculus..... 4.
Wings spotted or washed on disk with darker..... 5.
4. Mesonotum pale yellow, the præscutum without distinct markings; halteres pale yellow; abdominal tergites with two small brown spots on caudal margin; male hypopygium with the phallosome including a flattened plate, its margin microscopically serrulate.
luteipennis sp. nov.
Mesonotum with the præscutum yellow, with two black lines before the suture; halteres dusky; abdominal tergites with the marginal spots confluent to form bands; male hypopygium not as above, the phallosome an elongate hook..... *montina* sp. nov.
5. Male hypopygium with basistyle at apex terminating in two spinous setæ 6.
Male hypopygium with basistyle at apex terminating in a single setæ 7.
6. Wings relatively long and narrow, the anterior branch of Rs subtransverse; male hypopygium with the intermediate and inner arms of dististyle small and inconspicuous..... *armata* Edwards.
Wings of normal shape, the anterior branch of Rs oblique, as usual in the genus; male hypopygium with the inner arm of dististyle expanded into an oval blade..... *claggi* sp. nov.

7. Male hypopygium with the outer arm of the dististyle a long slender rod that terminates in a very long seta..... 8.
 Male hypopygium with outer arm of the dististyle variously formed, not bearing an apical seta..... 10.
8. Wings with the veins and cells behind the anterior margin strongly washed with brown, the broad costal border yellow.
flavocostalis Alexander.
 Wings yellow, with the usual four restricted dark clouds, located on the anterior cord, outer end of cell 1st M₂, m-cu, and distal end of vein 2d A..... 9.
9. Wings with vein 2d A curved at end; male hypopygium with the ninth sternite at apex very broad, heavily blackened, clothed with delicate erect setæ, the two enlarged apical bristles widely separated.
nigrosternata sp. nov.
 Wings with vein 2d A short-spurred at end; male hypopygium with the ninth sternite entirely pale, narrowed to a point outwardly, the two apical bristles thus appearing approximated to actually contiguous *ceylonica* Edwards.
10. Male hypopygium with the outer arm of the dististyle a simple blackened spine, the tip acute..... *tablasensis* Alexander.
 Male hypopygium with the outer arm of the dististyle a powerful structure, at apex produced mesad at a right angle into a spikelike point.
neocolona sp. nov.

STYRINGOMYIA FUMIPENNIS Edwards.

Styringomyia fumipennis EDWARDS, Notulæ Entomologicæ 6 (1926) 37.

Type locality: Mount Banahao, Luzon. One male, Mount Tabuan, Cagayan, Luzon, May, 1929 (*F. Rivera*).

STYRINGOMYIA MCGREGORI Alexander.

Styringomyia mcgregori ALEXANDER, Philip. Journ. Sci. 28 (1925) 373-374.

Type locality: Manila, October, 1924 (*R. C. McGregor*). Several additional specimens, Manila, October, 1929 and 1930, at light (*McGregor*). Mr. Edwards informs me that he has seen it from Borneo and the Andaman Islands.

STYRINGOMYIA LUTEIPENNIS sp. nov. Plate 3, fig. 40.

General coloration pale yellow, the mesonotal præscutum without distinct markings; wings pale yellow, unmarked except for a dusky spot at arculus; halteres yellow; abdominal tergites with two separate brown spots on caudal margin of each; male hypopygium with a single lateral enlarged seta on basistyle; dististyle expanded into a broadly flattened blade.

Male.—Length, about 5.5 millimeters; wing, 3.5 to 3.7.

Rostrum and palpi yellow. Antennal scape brownish yellow, especially on lower face; flagellum entirely pale yellow. Head pale yellow.

Mesonotum pale yellow, the præscutum without distinct markings; postnotal mediotergite with narrow brown lateral lines. Pleura yellow. Halteres pale yellow. Legs yellow, the femora with two restricted brown areas on outer face only; tibiæ with an incomplete brown ring before midlength, the tips infuscated; tarsi yellow, the last segment dark brown. Wings pale yellow, unmarked except for a small dusky area at arculus; veins deeper yellow but still very indistinct. Venation: Anterior branch of Rs oblique; cell 2d M₂ short-sessile to more broadly sessile, in rare cases with a very short petiole; m-cu about its own length beyond the fork of M; vein 2d A curved gently to margin.

Abdomen yellow, each tergite with two brown spots on caudal margin; hypopygium yellow. Male hypopygium (Plate 3, fig. 40) small, the ninth tergite, 9t, terminating in a cordate setiferous lobe, the apex narrowed but obtuse. Ninth sternite, 9s, broad, pale, with two widely separated spinous setæ, the intervening space very gently concave. Basistyle, b, with a single developed apical spinous seta, its basal lobe small; a reduced set beside the major spine. Dististyle, d, with the outer arm pale, terminating in the usual very long seta, at base with a group of about fifteen spines and a marginal comb of ten to twelve close-set spines; main blade of dististyle broadly flattened, with abundant long black spinous setæ; two pale arms at base of dististyle, the shorter with marginal setæ, the outermost a stout black spine; longer cephalic arm slenderer, terminating in a group of six or seven stout spines. Phallosome, p, with a group of spinous setæ on either side; a flattened dark plate, its apex truncate, the margins microscopically serrulate.

LUZON, Laguna Province, Mount Maquiling, January 29, 1930 (A. C. Duyag); holotype, male; paratypes, 8 males; above Ube, foot of Mount Banahao, February 3 to 6, 1930 (F. Rivera); paratypes, 2 males.

Styringomyia luteipennis much resembles *S. flava* Brunetti and *S. taiwanensis* Alexander in the yellow wings, but belongs to a different section of the genus, having but a single spinous seta at apex of basistyle of male hypopygium. The small brown spot at arculus and the structure of the male hypopygium furnish distinctive features.

STYRINGOMYIA MONTINA sp. nov. Plate 3, fig. 41.

Generally similar and closely related to *S. luteipennis* sp. nov., differing in slight details of coloration and structure of the male hypopygium. Size larger and form stouter. First scapal

segment beneath and entire second segment blackened. Mesonotal præscutum with two blackish lines before the suture. Halteres dusky. Wings somewhat deeper yellow, especially in the radial field, the veins correspondingly more distinct. Abdominal tergites with the margins on caudal margin large, confluent, to form apical bands. Male hypopygium (Plate 3, fig. 41) generally as in *luteipennis*, but the phallosome, *p*, entirely different, terminating in an elongate hook, on outer margin with numerous erect spinous setæ and true spines.

LUZON, Mountain Province, Ifugao Subprovince, Pakawan, April 7, 1930 (*F. Rivera*); holotype, male; paratypes, 2 males; Banaue, April 4, 1930 (*F. Rivera*); allotype, female.

STYRINGOMYIA ARMATA Edwards. Plate 3, fig. 42.

Styringomyia armata EDWARDS, Ann. & Mag. Nat. Hist. IX 13 (1924) 274; Treubia 9 (1927) 355, fig. b.

Type locality: Mindanao. Lawa, Calian, Davao district, Mindanao, April 28, 1930 (*C. F. Clagg*); Calian, July 14, 1930 (*C. F. Clagg*), at light of house. The latter specimen is accompanied by the following note: "This walked across table with a sort of dancing motion, raising its body up and down, at regular intervals of about one-half second."

I believe the identification to be correct, despite certain details lacking in the original description. The present fly has the wing unusually long and narrow for a member of the genus, with the anterior branch of Rs subtransverse, as shown (Plate 1, fig. 21). The male hypopygium (Plate 3, fig. 42) is again illustrated, the chief characters being the bispinous basistyle, *b*, and the great reduction in size of the intermediate and posterior branches of the dististyle, *d*.

STYRINGOMYIA CLAGGI sp. nov. Plate 1, fig. 22; Plate 3, fig. 43.

General coloration yellow, heavily variegated with black; palpi and antennal scape black, the flagellum yellow; head and thorax without flattened setæ; legs with complete rings on femora and tibiæ; male hypopygium with two apical spinous setæ on basistyle, these arising from elongate tubercles; main arm of dististyle a broadly flattened blade.

Male.—Length, about 6 to 6.3 millimeters; wing, 4.5 to 5.

Female.—Length, about 5 to 5.5 millimeters; wing, 4 to 4.5.

Rostrum and palpi brownish black. Antennæ with the scape black, the flagellum abruptly pale yellow, the outer segments a trifle more darkened. Head blackish, without flattened setæ.

Pronotum obscure yellow medially, more blackened laterally. Mesonotal præscutum with the disk obscure yellow, the margin and two intermediate vittæ before the suture more blackened; scutum with the median area and centers of the lobes obscure yellow, the latter margined with blackish; scutellum blackened, the median region restrictedly obscure yellow; postnotal medio-tergite black, with a capillary yellow median vitta. Pleura obscure yellow, the dorsal sclerites darker. Halteres obscure yellow; knobs dark brown. Legs with the coxæ and trochanters pale yellow; femora yellow, with two broad complete brownish black rings, in addition to the narrowly darkened tips; the more basal yellow annulus a little wider than the inclosing dark rings; outer yellow annulus narrow; tibiæ yellow, the tips and a sub-equal ring on basal half black; tarsi yellow, the outer segment blackened, the narrow tips of the other segments infuscated. Wings (Plate 1, fig. 22) yellow, with ill-delimited brown washes, including the anterior cord, vein Cu and vein 2d A; veins pale brown, C, Sc, and R more yellowish. Venation: Anterior branch of Rs normally oblique; cell 2d M₂ sessile; vein 2d A curved gently to the margin.

Abdominal tergites light brown, the caudal margins darker brown, the sternites and hypopygium yellow. Male hypopygium (Plate 3, fig. 43) with the apical lobe of the ninth tergite, 9t, low and obtuse, densely hairy. Ninth sternite 9s, narrowed apically, the terminal setæ not widely separated. Basistyle, *b*, with two relatively short apical spinous setæ from long basal tubercles. Outer arm of dististyle, *d*, a long pale structure with the usual very elongate terminal seta; main arm of dististyle a broadly flattened blade, with long setoid spines that are chiefly marginal in distribution, there being a row along outer edge and a dense patch on mesal margin at near midlength.

MINDANAO, Davao district, Calian, La Lun Mountains, altitude 5,500 to 5,800 feet, July 3 and 4, 1930, by sweeping vegetation (C. F. Clagg); holotype, male; allotype, female; paratypes, 1 male, 1 female; Mount Apo, 7,000 to 8,000 feet, September 21, 1930 (Clagg); paratypes, 1 male and 1 female.

This interesting *Styringomyia* is dedicated to my friend Mr. Charles F. Clagg, who has collected very numerous new and rare Tipulidæ in the highest mountains of Colorado and Mindanao. The species is allied to *S. ensifera* Edwards, *S. armata* Edwards, and *S. acuta* Edwards, in the bispinous basistyle of the male hypopygium, differing in the unmodified setæ of the

head and thorax, and the details of the hypopygium, notably the greatly expanded inner arm of the dististyle.

STYRINGOMYIA FLAVOCOSTALIS Alexander.

Styringomyia flavocostalis ALEXANDER, Philip. Journ. Sci. 27 (1925) 76-77.

Type locality: Mount Maquiling, Luzon. Additional specimens, Ube, Laguna Province, Luzon, altitude 300 to 400 meters, January 26, 1930 (*R. C. McGregor*).

STYRINGOMYIA NIGROSTERNATA sp. nov. Plate 3, fig. 44.

General coloration chiefly pale; rostrum, palpi, and antennal scape blackened; mesonotal præscutum with a broad medial darkening; pleura yellow; wings pale yellow, with the usual dark spots; male hypopygium with the basistyle unispinous, this spinous seta arising from a very long basal tubercle; ninth sternite heavily blackened at apex, clothed with delicate erect black setæ.

Male.—Length, about 6 millimeters; wing, 4.6.

Rostrum and palpi brownish black. Antennæ with the scapal segments black, the flagellar segments brownish yellow. Head brownish gray, the usual setæ stout but not flattened.

Pronotum gray medially, brownish black laterally. Mesonotal præscutum chiefly ochreous, with a sparse gray bloom, the median region on anterior half with a broad brownish black stripe; a small blackish spot on either side at the suture, this area extended across the suture and partially encircling the scutal lobes on outer side; scutellum pale, with a dark spot on either side; postnotal mediotergite chiefly dark brown. Pleura light yellow. Halteres yellow, the knobs slightly more orange. Legs with the coxæ and trochanters pale yellow; femora yellow, with two narrow, incomplete brown rings; tibiæ yellow, the tips and an incomplete ring before midlength brown; tarsi yellow, the tips of the individual segments weakly darkened. Wings pale yellow, with the usual four or five brown clouds, these being on anterior cord, union of M_2 and M_3 , fork of M_{3+4} , m-cu, and the distal third of vein 2d A; veins yellow, dark brown in the infuscated areas. Venation: Anterior branch of Rs normally oblique; cell 2d M_2 short-petiolate; vein 2d A curved strongly into the margin, not angulated.

Abdominal tergites yellow, the caudal margins of the segments with two small brown triangles, these becoming larger and confluent on the outer segments; in addition to the above, a median

brown clouding on basal half of tergites, on outer segments heavier and more clearly delimited; sternites and hypopygium yellow. Male hypopygium (Plate 3, fig. 44) with the apical lobe of the tergite, 9*t*, long-triangular, the tip obtuse. Ninth sternite, 9*s*, broad, the apex extensively and conspicuously blackened, the two apical spines unusually short, arising from small elevated tubercles, the surface of the lobe with short erect black setæ. Basistyle, *b*, with a single terminal spinous seta, this unusually short, less than one-half the long basal tubercle. Dististyle, *d*, with the outer arm terminating in a long seta, without spines at base; intermediate arm produced laterad into a long acute spine at near midlength, the base of this spine and the arm beyond with a row of black spines; inner arm a curved chitinized rod, the tip obliquely acute and slightly blackened; outer margin of arm at midlength with a linear group or crest of about ten to twelve spines; mesal face of arm at base with a group of long spinous setæ.

MINDANAO, Davao district, Lawa, at trap lantern, April 24, 1930 (*C. F. Clagg*); holotype, male.

Styringomyia nigrosternata is very different from other regional species in the structure of the male hypopygium, especially the dististyle and ninth sternite.

STYRINGOMYIA CEYLONICA Edwards.

Styringomyia ceylonica EDWARDS, Ann. & Mag. Nat. Hist. VIII 8 (1911) 62-63.

Type locality: Weligama, Ceylon. The following authentic Philippine records are available: Badajoz, Tablas, August 28, 1928 (*F. Rivera and A. C. Duyag*); Lawa, Davao district, Mindanao, at light, April 24, 1930 (*C. F. Clagg*).

Bezzi³ recorded this species from Los Baños and Mount Maquiling, but this record is almost certainly erroneous, as previously indicated by Edwards.⁴

STYRINGOMYIA TABLASENSIS Alexander.

Styringomyia tablasensis ALEXANDER, Philip. Journ. Sci. 40 (1929) 344-345.

Type locality: Badajoz, Tablas, August 27, 1928 (*F. Rivera and A. C. Duyag*). Other Philippine records: Lawa, Davao district, Mindanao, at light, April 24, 1930 (*C. F. Clagg*); Calian, Mindanao, July 12, 1930, at light (*C. F. Clagg*).

³ Philip. Journ. Sci. § D 12 (1917) 115.

⁴ Notulae Entomologicae 6 (1926) 34.

STYRINGOMYIA NEOCOLONA sp. nov. Plate 3, fig. 45.

Closely allied to *colona*; general coloration yellow, the præscutum with black lines behind; blackened areas on femora and tibiæ restricted in area; male hypopygium with the apical lobe of the tergite truncate; ninth sternite expanded at apex and deeply emarginate.

Male.—Length, about 6 millimeters; wing, 4.3.

Rostrum brown; palpi brownish yellow, the outer segment paling to yellow. Antennæ with the basal segment black above, the remainder of organ pale yellow. Head light brown.

Pronotum restrictedly pale medially, blackened laterally. Mesonotal præscutum obscure brownish yellow; marked with black behind, including two submedian black lines that converge in front, inclosing an oval ochereous median area before the suture; scutal lobes similarly ochereous, bordered externally by black; scutellum obscure yellow, margined caudally by black; postnotal mediotergite black. Pleura yellow. Halteres yellow. Legs with the coxæ and trochanters pale yellow; femur yellow, with two small black spots on upper surface only; tibiæ yellow, the tips blackened, with an additional restricted black cloud on upper surface before midlength; tarsi yellow, the terminal segment blackened. Wings pale yellow, with four blackish areas, as usual in the genus, these on anterior cord, m and adjoining veins, m-cu, and on the distal two-fifths of vein 2d A; veins yellow, blackened in the dark areas. Venation: Anterior branch of Rs normally oblique; m short but present, cell 2d M₂ being short-sessile; vein 2d A curved into the anal margin, the cell relatively wide.

Abdominal tergites yellow, the segments with two small brown spots on caudal margin, those of the second segment large, of segments three to five small, on the outer segments again becoming larger and confluent; sternites and hypopygium yellow. Male hypopygium (Plate 3, fig. 45) with the apical lobe of the tergite, 9*t*, elongate, gradually narrowed outwardly, the apex truncate. Ninth sternite, 9*s*, very slender, expanded outwardly, the apex deeply bilobed by a U-shaped notch, the slender lobes with two long setæ, one apical, the second placed more laterally at base. Basistyle, *b*, with the apical spinous seta a little shorter than its long basal tubercle. Dististyle, *d*, complex, the outer arm at apex produced mesad at a right angle into a long blackened spike, with a smaller curved black spine at bend of outer margin; intermediate arm smaller but of somewhat similar shape

to the outer arm; inner arm long, armed with groups of spines as illustrated.

In *colona* (Plate 3, fig. 46) the apical lobe of the tergite, 9*t*, is slightly longer, with the end gently emarginate. Ninth sternite, 9*s*, with the lateral margins straight, the apex more gently emarginate. Outer arm of dististyle, *d*, without a curved black spine at angle; inner arm of very different conformation, as shown.

MINDANAO, Davao district, Calian, July 16, 1930 (C. F. Clagg); holotype, male.

The distinctions between the present species and *Styringomyia colona* Edwards (Krakatau) are best shown in the structure of the male hypopygium.

ILLUSTRATIONS

[Legend: *a*, aedeagus; *b*, basistyle; *d*, dististyles; *db*, dorsal lobe of basistyle; *dd*, dorsal dististyle; *g*, gonapophysis; *id*, inner dististyle; *od*, outer dististyle; *p*, phallosome; *s*, 9th sternite; *t*, 9th tergite; *vb*, ventral lobe of basistyle; *vd*, ventral dististyle.]

PLATE 1

- FIG. 1. *Dolichopeza* (*Mitopeza*) *rizalensis* sp. nov., wing.
2. *Dolichopeza* (*Nesopeza*) *melanosterna* sp. nov., wing.
3. *Dolichopeza* (*Nesopeza*) *tarsalis* Alexander, wing, medial field.
4. *Dolichopeza* (*Mitopeza*) *mjöbergi* Edwards, wing, medial field.
5. *Limonia* (*Limonia*) *bilobulifera* sp. nov., wing.
6. *Limonia* (*Limonia*) *melanopleura* sp. nov., wing.
7. *Limonia* (*Limonia*) *tremula* sp. nov., wing.
8. *Limonia* (*Libnotes*) *unistriolata* sp. nov., wing.
9. *Limonia* (*Libnotes*) *melancholica* sp. nov., wing.
10. *Limonia* (*Libnotes*) *perrara* sp. nov., wing.
11. *Limonia* (*Dicranomyia*) *orthia* sp. nov., wing.
12. *Limonia* (*Dicranomyia*) *neopunctulata* sp. nov., wing.
13. *Helius* (*Eurhamphidia*) *fuscofemoratus* sp. nov., wing.
14. *Helius* (*Eurhamphidia*) *indivisus* sp. nov., wing.
15. *Trentepohlia* (*Mongoma*) *distalis* sp. nov., wing.
16. *Gonomyia* (*Progonomyia*) *terebrella* sp. nov., wing.
17. *Erioptera* (*Teleneura*) *melanotænia* sp. nov., wing.
18. *Erioptera* (*Empeda*) *lunensis* sp. nov., wing.
19. *Molophilus* *banahaoensis* sp. nov., wing.
20. *Molophilus* *procericornis* sp. nov., wing.
21. *Styringomyia* *armata* Edwards, wing.
22. *Styringomyia* *claggi* sp. nov., wing.

PLATE 2

- FIG. 23. *Dolichopeza* (*Mitopeza*) *rizalensis* sp. nov., male hypopygium.
24. *Dolichopeza* (*Nesopeza*) *melanosterna* sp. nov., male hypopygium.
25. *Limonia* (*Limonia*) *bilobulifera* sp. nov., male hypopygium.
26. *Limonia* (*Limonia*) *melanopleura* sp. nov., male hypopygium.
27. *Limonia* (*Libnotes*) *unistriolata* sp. nov., male hypopygium.
28. *Limonia* (*Libnotes*) *melancholica* sp. nov., male hypopygium.
29. *Limonia* (*Dicranomyia*) *orthia* sp. nov., male hypopygium.
30. *Limonia* (*Dicranomyia*) *neopunctulata* sp. nov., male hypopygium.
31. *Limonia* (*Dicranomyia*) *punctulata* de Meijere, male hypopygium.
32. *Limonia* (*Dicranomyia*) *fullowayi* Alexander, male hypopygium.
33. *Helius* (*Eurhamphidia*) *indivisus* sp. nov., male hypopygium.
34. *Erioptera* (*Teleneura*) *melanotænia* sp. nov., male hypopygium.

PLATE 3

- FIG. 35. *Erioptera (Empeda) lunensis* sp. nov., male hypopygium.
36. *Molophilus banahaoensis* sp. nov., male hypopygium.
37. *Molophilus procericornis* sp. nov., male hypopygium.
38. *Molophilus mendicus* sp. nov., male hypopygium.
39. *Molophilus tawagensis* sp. nov., male hypopygium.
40. *Styringomyia luteipennis* sp. nov., male hypopygium.
41. *Styringomyia montina* sp. nov., male hypopygium.
42. *Styringomyia armata* Edwards, male hypopygium.
43. *Styringomyia claggi* sp. nov., male hypopygium.
44. *Styringomyia nigrosternata* sp. nov., male hypopygium.
45. *Styringomyia neocolona* sp. nov., male hypopygium.
46. *Styringomyia colona* Edwards, male hypopygium.

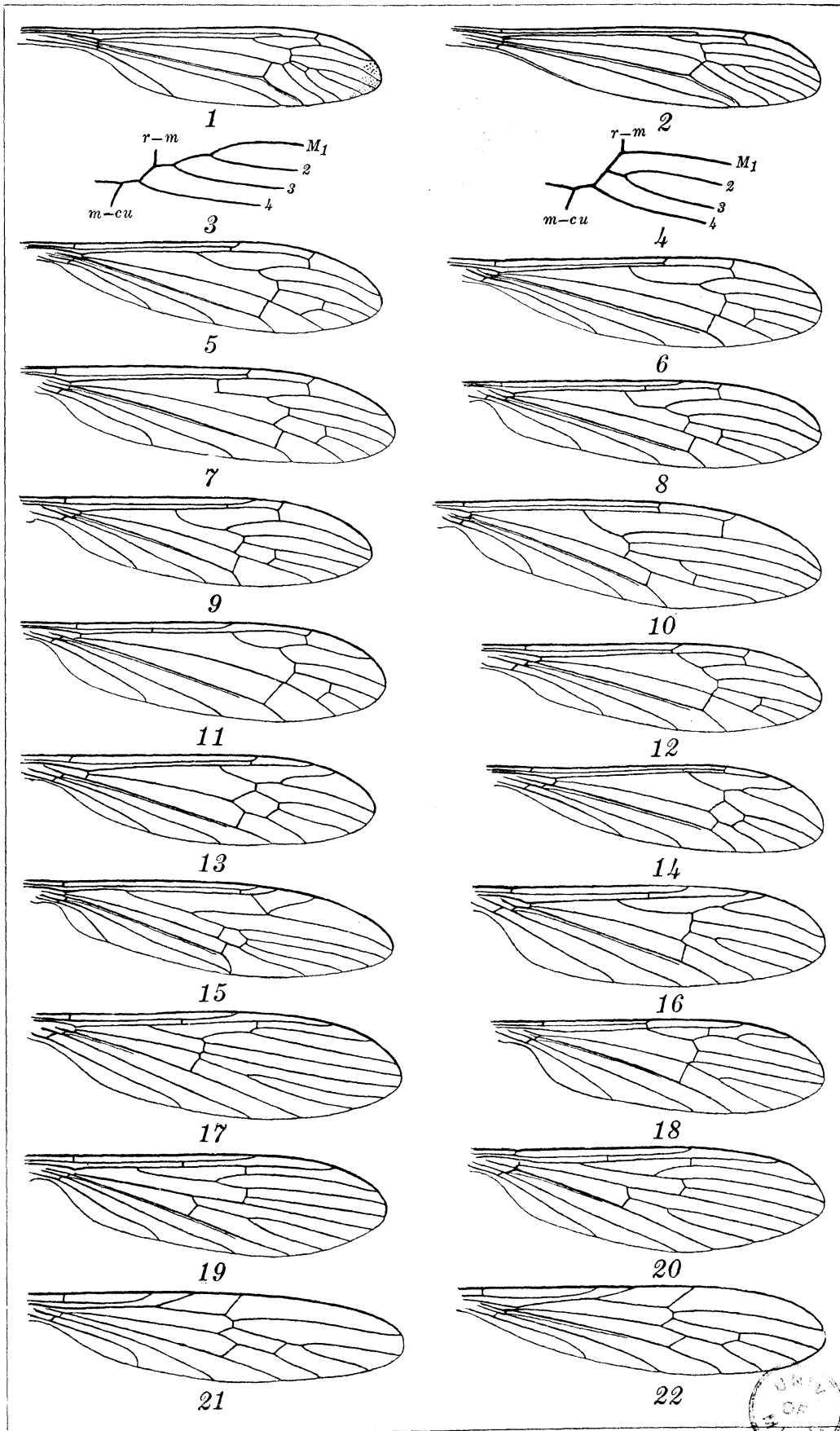


PLATE 1.

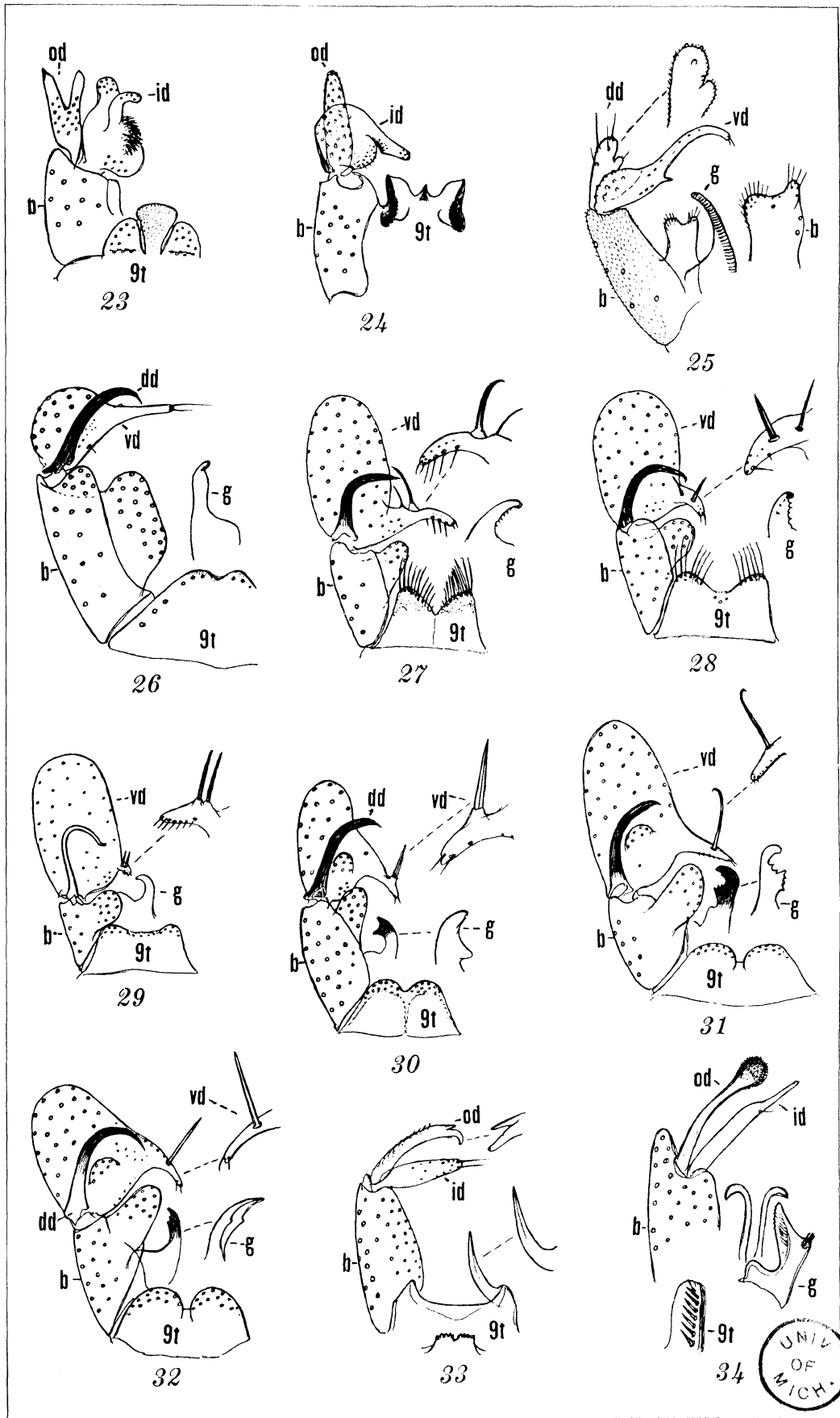


PLATE 2.

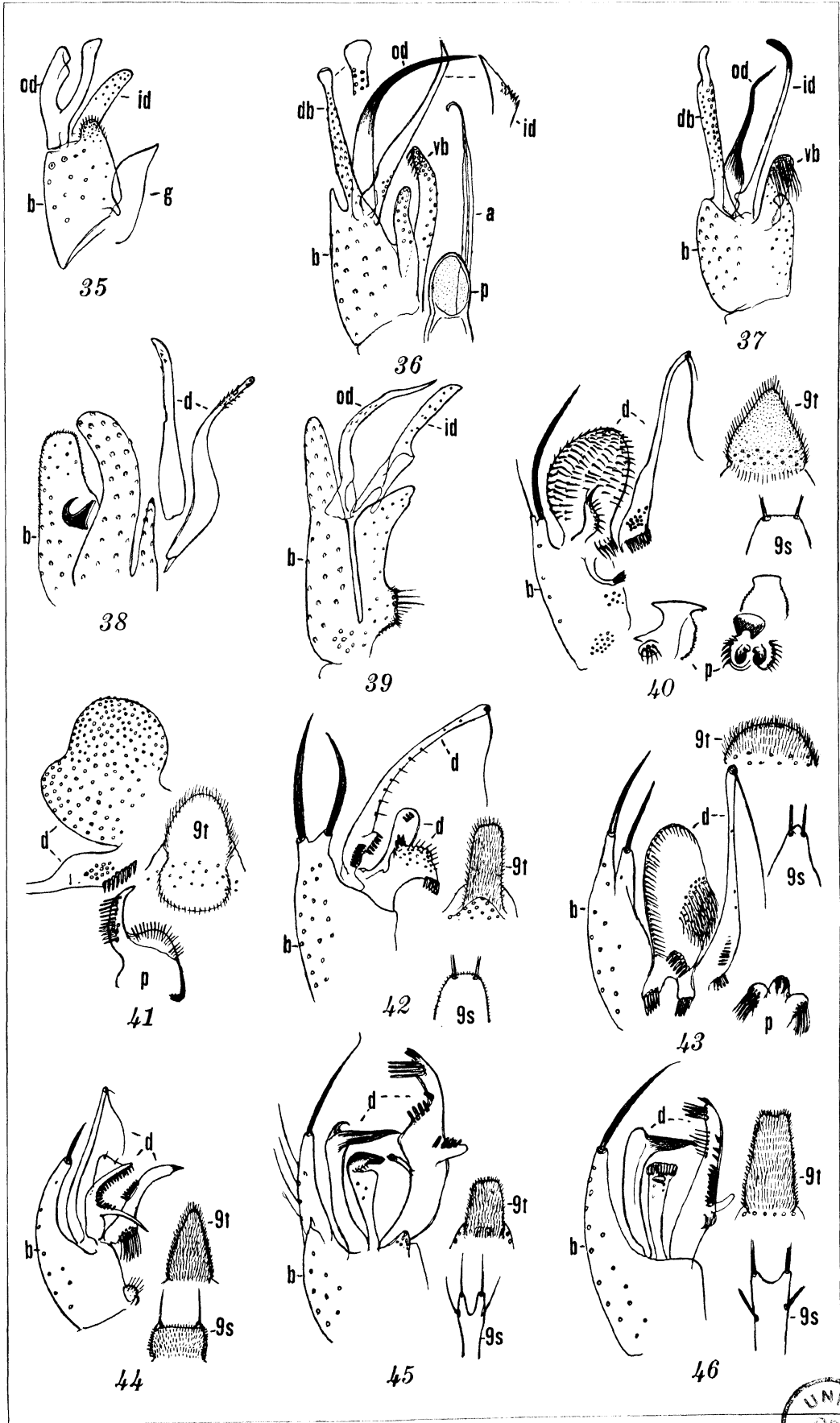


PLATE 3.

