

NEW OR LITTLE-KNOWN TIPULIDAE FROM THE PHILIPPINES (DIPTERA), VI

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NEW OR LITTLE-KNOWN TIPULIDÆ FROM THE PHILIPPINES (DIPTERA), VI¹

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THREE PLATES

The interesting series of crane flies discussed at this time was taken at and above Ube, Laguna Province, Luzon, in 1929, by my friend Mr. Richard C. McGregor and his coworkers, Messrs. Celestino, Duyag, and Rivera.² The majority of these specimens were taken between altitudes of 400 and 800 meters. Two species were taken on Tablas Island, Romblon Province, by Messrs. Rivera and Duyag, and one is recorded from Samar. I am vastly indebted to the collectors for the privilege of retaining the types of the novelties described at this time.

TIPULINÆ

NESOPEZA OBERON *sp. nov.*

General coloration pale yellow, the mesonotum and pleura with a conspicuous brownish black pattern; tips of femora and tibiæ blackened; wings narrow, grayish subhyaline, with a heavy dark brown costal pattern; forks of medial field shallow; cell 2d A narrow; male hypopygium with the lateral angles of the sternite produced into dusky lobes.

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

Female.—Length, about 8.5 millimeters; wing, 7.

Rostrum and palpi black. Antennæ with the scape and basal segment of flagellum ochreous, the remainder of the flagellum passing into black. Front yellow, with a median brown triangle.

Pronotum pale yellow, narrowly dark brown medially. Mesonotal præscutum pale yellow with three very conspicuous brownish black stripes; scutum similarly pale, each lobe with two confluent brownish black areas; scutellum black; postnotal me-

¹ Contribution from the Department of Entomology, Massachusetts Agricultural College.

² Ube is the official spelling of the name of the barrio near which most of these crane flies were collected.

diotergite brownish black medially, paling to obscure yellow on sides. Pleura with the ground color yellow, striped and spotted with brownish black, the latter color including the anepisternum, dorsal pleurotergite, and a ventral stripe occupying the ventral sternopleurite and meral region; the pale ground color thus includes the dorsopleural membrane, dorsal sternopleurite, pteropleurite, and a conspicuous area on the ventral pleurotergite. Halteres elongated, pale yellow, the knobs dark brown. Legs with the fore coxæ brownish black, the remaining coxæ and all trochanters pale yellow; femora obscure yellow, the tips narrowly brownish black, preceded by a very narrow, clearer white, subterminal ring; remainder of legs yellowish white, the tips of the tibiæ very narrowly but conspicuously blackened. Wings (fig. 1) relatively narrow, grayish subhyaline, with a dark brown costal pattern, as in the typical subgroup of the genus; a narrow brown seam on the cord and at the end of vein 1st A; dark areas bordered by a narrow more-hyaline line, this not so evident as in *N. geniculata*; veins brownish black. Venation: Medial forks very short; cell 2d A narrow.

Abdominal tergites brownish black, with a series of yellow spots on the dorsomedian region shortly before the caudal margin; sternites less conspicuously but more extensively variegated with yellow on the subterminal segments. Male hypopygium having the caudal margin of the tergite with three rounded lobes, the median one smaller. Lateral angles of the sternite produced into dusky lobes that are tipped with conspicuous yellow setæ.

LUZON, Laguna Province, above Ube, Mount Banahao, altitude 500 meters, May 27, 1929 (*McGregor*); holotype, male; allotype, female.

Nesopeza oberon is allied to *N. costalis* (Brunetti) of South India and *N. geniculata* Alexander of Japan, differing conspicuously in the brownish black thoracic pattern.

Genus SCAMBONEURA Osten Sacken

Scamboneura OSTEN SACKEN. Berlin. Entomol. Zeitschr. 26, Heft 1 (1882) 95.

Including the two new species described at this time there are now eight species of this most interesting genus known from the Philippines. I am taking this opportunity of describing and figuring the male hypopygium of the genotype, *dotata* Osten Sacken, and of *psarophanes* Alexander.

The essential features of the male hypopygium in the genus are as follows: Usually small, in some species more enlarged; tergite distinct from basistyle, the latter in part fused with the sternite, separated therefrom by a ventral suture that is up-curved at its cephalic end. Ninth tergite more or less trilobed. Outer dististyle a broad pale lobe. Inner dististyle blackened, jutting into the notch of the tergite, provided with retrorse setæ to produce a more or less hystriciform appearance. Ninth sternite deeply incised, at the base of the notch bearing a median depressed plate or lobe, this structure offering excellent characters for the separation of the different species.

SCAMBONEURA DOTATA Osten Sacken.

Scamboneura dotata OSTEN SACKEN, Berlin. Entomol. Zeitschr. 26, Heft 1 (1882) 95.

Rather numerous specimens have been taken at and above Ube, March 22 to 28 and May 1 to 4, 1929 (*McGregor and Duyag*).

The male hypopygium (fig. 19) has the ninth tergite (fig. 20) with the caudal margin produced into a lateral blackened ledge, separated from two small slender fingerlike lobes by a rounded incision; mesal margin of the submedian lobes with a few setæ; margin of the blackened ledges microscopically serrulate. Basistyle, *b*, relatively long and narrow. Outer dististyle (fig. 21) flattened, expanded distally, the outer cephalic angle further produced into a dusky fingerlike lobule. Inner dististyle, *id*, short and massive, shaped as in the figure, the mesal surface with long white setæ. Median appendage of ninth sternite (fig. 22) appearing as a subcircular flattened structure bearing very small lateral lobes on either side.

SCAMBONEURA PSAROPHANES Alexander.

Scamboneura psarophanes ALEXANDER, Philip. Journ. Sci. 33 (1927) 294-295.

Ube, March 25 to 28, 1929 (*Duyag*); June 1, 1928, resting on upper side of leaf in light forest (*McGregor*); above Ube, altitude 800 meters, May 18, 1929 (*McGregor*).

Male hypopygium somewhat as in *S. dotata* but differing in all details. Ninth tergite (fig. 23) not or but weakly chitinized, unblackened; lateral lobes pale, much larger than the simple median lobule; caudal margin of tergite and margin of ridges on ventral surface with small blackened points. Outer dististyle (fig. 24) broad, pale, the apex narrowed to a simple obtuse

point. Inner dististyle (fig. 25) relatively slender, blackened, provided with long pale retrorse setæ. Appendage of ninth sternite (fig. 26) a flattened depressed blade bearing small but conspicuous lateral shoulders, the apex evenly rounded and fringed with short setæ; lateral margins of basal portion of plate somewhat more thickened.

SCAMBONEURA UNICOLOR Bezzi.

Scamboneura dotata unicolor BEZZI, Philip. Journ. Sci. § D 12 (1917)
112.

Majayjay, May 3, 1928 (*McGregor*); a female, above Ube, altitude 500 meters, May 20, 1929, resting on *Pandanus* leaf (*McGregor*).

SCAMBONEURA VITTIVERTEX sp. nov.

General coloration yellow, the præscutum with slightly indicated more reddish stripes; antennal flagellum black; head orange, with a capillary black vitta on posterior vertex; pleura pale yellow; male hypopygium with the sternal appendage an elongate flattened plate, widest at near two-thirds its length, the apex weakly notched.

Male.—Length, about 12 millimeters; wing, 11 to 11.5.

Female.—Length, about 16 millimeters; wing, 13.5.

Frontal prolongation of head yellow, the slender nasus black; palpi obscure yellow, the outer segments brownish black. Antennæ with the scape yellow; flagellum black; antennæ (male) elongate, the verticils short. Head deep orange; occipital band brownish pruinose, sending a narrow black median vitta cephalad almost to the summit of the vertical tubercle; genæ slightly pruinose.

Mesonotum obscure yellow, the præscutum with three slightly darker reddish stripes; in cases, the median stripe is again split by a capillary darker vitta; humeral region narrowly darkened; scutal lobes yellow, each with two confluent brown areas; disk of scutellum darkened; center of postnotal mediotergite infuscated. Pleura pale yellow, the dorsopleural membrane more opaque. Halteres dark brown, the extreme base of stem brightened. Legs with the coxæ yellow, the cephalic face of the fore coxæ darkened; trochanters yellow; femora yellowish brown; remainder of legs deepening through dark brown to black. Wings subhyaline, the small stigma and cells Sc and Cu₁ darker; veins black, the macrotrichia long and conspicuous. Venation: Forks of medial cells deep; anterior cord strongly bowed.

Abdominal tergites yellow, trivittate with brownish black, the median stripe broadest, interrupted at the caudal margins of the tergites; subterminal segments more uniformly pale, especially in the female; eighth tergite (male) blackened; hypopygium reddish brown; basal sternites clear yellow, the outer segments more orange. Male hypopygium (fig. 27) relatively small. Ninth tergite (fig. 28) not heavily chitinized on any portion; lateral lobes flattened, their margins obtuse; submedian portion of the caudal lobes with a dense fringe of short black setæ. Outer dististyle (fig. 29) broadly ear-shaped, not produced into a point. Inner dististyle (fig. 30) with the apical blackened beak very slender; disk of the style with conspicuous retrorse setæ. Appendage of the ninth sternite (fig. 31) a conspicuous flattened plate, more chitinized at extreme base, followed by a constriction, beyond which the plate gradually widens, reaching its widest point at near two-thirds the length; apex of plate weakly notched; the broad flaring margins are thinner and more nearly transparent than the median infuscated portion.

LUZON, Laguna Province, above Ube, Mount Banahao; holotype, male, March 30, 1929 (*McGregor*); allotype, female, March 29, 1929 (*McGregor*); paratypes, a broken specimen, tangled in spider's web, March 24, 1929 (*McGregor*); 1 female, March 25, 1929 (*Duyag*); several males and females, March 29 to 31 to June, 1929 (*McGregor and Duyag*); both sexes, above Majayjay, altitude over 500 meters, in light forest, one resting on a leaf, June 1, 1928 (*McGregor*).

Scamboneura vittivertex is readily told from *S. unicolor* Bezzi, which it superficially resembles, by the conspicuous black vitta on the vertex.

SCAMBONEURA HIRTISTERNATA sp. nov.

Mesonotal præscutum yellow with three nearly opaque brown stripes; antennæ (male) with the flagellum black, of the female bicolorous; head orange, the occipital brand gray, sending a narrow black line cephalad to the vertical tubercle; abdominal tergites yellow, broadly margined laterally with brownish black, the posterior ring of each segment with a blue-black area; male hypopygium large, tumid, reddish; eighth sternite with conspicuous brushes of long reddish setæ on either side of a median emargination.

Male.—Length, about 11 millimeters; wing, 9.5.

Female.—Length, about 14 millimeters; wing, 11.3.

Frontal prolongation of head yellow, darker dorsomedially; nasus brownish black; palpi pale brown, the terminal segment passing into black. Antennæ (male) of moderate length; basal segment dark beneath, the remainder yellow; second segment yellow; flagellum entirely black. Antennæ (female) distinctly bicolorous, the basal flagellar segment black at base, the apex yellow; on flagellar segments 1 and 2 the amount of yellow includes about one-third the length of the segment; the amount of yellow gradually lessens on the outer segments, the more distal being entirely black. Head orange, the orbits narrowly silvery; posterior vertex and genæ more pruinose; a conspicuous gray rectangular brand on the occiput and posterior vertex, this sending a narrow velvety black median line cephalad onto the vertical tubercle.

Pronotum pale yellow, more infuscated in front. Mesonotal præscutum yellow, with three nearly opaque brown stripes, the anterolateral ends of the lateral stripes narrowly blackened; humeral region infuscated; scutum yellow, the lobes grayish brown, the mesal edge of each lobe velvety black; scutellum chiefly infuscated, obscure yellow at base; postnotal mediotergite yellow with a broad gray median longitudinal stripe that widens slightly behind, the caudal margin with two approximated dark brown spots. Pleura pale yellow, vaguely marked with grayish brown on the anepisternum and pleurotergite. Halteres obscure yellow, the knobs dark brown. Legs with the coxæ pale, the anterior face of the fore coxæ restrictedly pruinose; trochanters pale yellow; femora yellowish brown, the tips narrowly darkened; tibiæ dark brown; tarsi brownish black. Wings whitish, the small stigma and cells Sc and Cu₁ more infumed; veins black, those in the costal region more brownish. Macrotrichia of veins of male long and conspicuous, black; of female shorter and less conspicuous. Venation: Rs very short, delimiting the proximal end of the stigma; anterior cord greatly bowed, as usual in the genus; petioles of medial cells short, the forks correspondingly deep and narrow; m-cu about one-half its length beyond the fork of M.

Abdominal tergites yellow, broadly margined laterally with brownish black; a conspicuous blue-black area on each tergite, occupying the posterior ring of the segment, this narrowly bordered by brown, most evidently so at caudal end; sternites pale yellow; hypopygium chiefly reddish brown, large and tumid. Male hypopygium (fig. 32) with the ninth tergite (fig. 33) tumid.

the caudal margin feebly notched. Basistyle entire, extending back to the eighth tergite. Outer dististyle pale, flattened, roughly triangular in outline, the apex slightly pointed. Appendage of ninth sternite a conspicuous reddish two-pronged structure. Eighth sternite large, the caudal edge emarginate and membranous, on either side of the notch with a brush of long reddish setæ.

TABLAS, Romblon Province, Badajoz, August 25, 1928 (*Francisco Rivera and A. C. Duyag*), holotype, male; allotype, female, August 26, 1928.

Scamboneura hirtisternata is peculiar in the uniformly blackened flagellum of the male sex and the distinctly bicolored organ of the female. I can see no reason for considering these specimens as being distinct species. By my key to the Philippine members of the genus³ the female sex runs to *S. dotata* Osten Sacken, differing in the coloration of the thorax; the male runs to *S. faceta* Alexander, differing in the coloration of the body and the very different male hypopygium.

TIPULA FUSCOANGUSTATA sp. nov.

General coloration orange; antennal flagellum weakly bicolorous; wings gray, the costal margin narrowly dark brown.

Female.—Length, about 19 millimeters; wing, 15.5.

Frontal prolongation of head yellow, the nasus conspicuous; mouth parts and palpi yellow. Antennæ with the scape yellow; flagellum weakly bicolorous, the bases of the segments broadly dark brown, the narrow tips vaguely paler. Head olive-green, the frons and occiput restrictedly more yellow; no evident vertical tubercle.

Mesonotal præscutum orange brown, with three clearer yellow stripes that are only vaguely evident against the ground color; remainder of mesonotum orange, the scutal lobes with more yellowish areas. Pleura clear yellow, the dorsopleural region more orange. Halteres dark brown, restrictedly yellow at base of stem. Legs with the coxæ and trochanters yellow; femora brownish yellow, the tips infuscated; remainder of legs black; tarsi very long and slender, only a little shorter than the combined femora and tibiæ. Wings (fig. 2) highly iridescent; ground color gray, the costal margin narrowly dark brown, including cells C, Sc, stigma, and a narrow costal seam in the radial field to the wing tip; a conspicuous seam on anterior cord;

³ Philip. Journ. Sci. 33 (1927) 293-294.

less distinct clouds at origin of Rs and marginal at tips of Cu; prearcular region suffused; veins black. Venation: R_{2+3} long, about one-third longer than R_{1+2} ; cell R_2 small; petiole of cell M_1 subequal to m ; cell 2d A narrow.

Basal abdominal tergites yellow, passing through brown to black, the subterminal segments very narrowly margined with yellow; basal sternites bright yellow, the subterminal segments blackened; genital segment yellow; valves of ovipositor dark chestnut, the valves paler at tips.

LUZON, Laguna Province, above Ube, Mount Banahao, March 29, 1929 (*McGregor*).

The diagnostic features outlined above suffice to make the present species readily recognizable. It is apparently a member of the subgenus *Acutipula*, but I cannot be certain of this with only the female sex available.

LIMONIINÆ

LIMONIA (LIBNOTES) ILLECEBROSA sp. nov.

General coloration pale yellow; mesonotal præscutum with a \wedge -shaped dark marking; legs yellow, the tips of the femora narrowly darkened; wings yellow with a restricted dark pattern: R_{1+2} long-produced beyond R_2 ; cells 2d M_2 and M_3 subequal in length.

Male.—Length, about 11 millimeters; wing, 13.6.

Female.—Length, about 9.5 millimeters; wing, 12.

Rostrum nearly as long as the remainder of the head, dark brown; palpi paler brown. Antennal scape dark brown, the second segment paler; flagellum pale brownish yellow, the segments with unilaterally arranged verticils of moderate length. Head light brown, variegated with darker; eyes virtually contiguous above (male) or slightly more separated (female).

Pronotum pale yellow, crossbanded with dark brown. Mesonotal præscutum greenish yellow, with a \wedge -shaped saddle, the lateral ends consisting of the anterior portions of the lateral stripes darker brown, the median point, consisting of the usual median stripe, paler brown; remainder of the notum pale yellow, the lateral ends of the suture, the centers of the scutal lobes, and the posterior-lateral portions of the postnotal mediotergite dark brown. Pleura pale yellow. Halteres pale, the knobs dark brown. Legs with the coxæ and trochanters pale yellow; femora yellow, the tips narrowly dark brown; tibiæ and tarsi yellow, the latter passing into brown at tips. Wings (fig. 3)

iridescent, with a pale yellow ground color, the prearcular and costal regions clearer yellow; a restricted brown pattern, as follows: Extreme base of wing; a postarcular band completely traversing the wing; a narrow band at the cord, completely traversing the wing except on the distal section of Cu_1 ; tip of Sc ; outer end of cell 1st M_2 ; stigmal area and adjoining veins; tips of veins R_3 and R_{4+5} ; veins pale yellow, blackened in the infuscated areas. Venation: $R_{1+2} + Sc_2$ produced beyond the level of R_2 ; R_{1+2} extended as a spur beyond the free tip of Sc_2 ; cells 2d M_2 and M_3 equal in length; cell 2d A small.

Abdomen yellow, the tergites marked laterally before the caudal margins with brownish black triangles, on the third segment forming a narrow complete ring. Male hypopygium (fig. 34) with the ninth tergite, $9t$, relatively large, the caudal margin nearly transverse. Dorsal dististyle slender, sinuous. Ventral dististyle, vd , with the rostral prolongation elongate, with three long spines at base; face of style produced into a pale lobe bearing three additional spinous setæ. Margin of gonapophysis, g , weakly serrulate.

LUZON, Laguna Province, Ube, Mount Banahao, March 28, 1929 (A. C. Duyag), holotype, male; March 31, 1929 (McGregor), allotype, female.

By Edwards's key to the species of *Libnotes*, the present species runs to couplet 28, differing markedly from *quadrifurca* (Walker) in the diagnostic features listed above. It should be reaffirmed that the peculiar structure of the ventral dististyle is found not only in a number of diverse-appearing species of *Libnotes* but also in species of the typical subgenus of *Limonia*.

LIMONIA (LIBNOTES) NOTATA (van der Wulp).

Libnotes notata VAN DER WULF, Tijdschr. v. Ent. 21 (1878) 194, pl. 12, fig. 5.

One male, above Ube, Laguna Province, Luzon, March 30, 1929 (McGregor). The venation is shown in Plate 1, fig. 4.

LIMONIA (LIBNOTES) RIVERAI Alexander.

Limonia (Libnotes) riverai ALEXANDER, Philip. Journ. Sci. 40 (1929) 255.

This species was described from the female sex. Three additional males and one female are now available, taken at Ube, March 24, 1929, by McGregor. One of the former is herewith described as allotype.

Characters nearly as in the female. Costal fringe of wings very long and conspicuous. Venation: Sc_1 ending opposite or just before the fork of Rs. Male hypopygium (fig. 35) with the basistyle, *b*, relatively slender, the ventromesal lobe low, occupying almost the whole face of the style. Dorsal dististyle lacking. Ventral dististyle, *d*, an oval lobe that narrows gradually into the rostral beak. Mesal-apical lobe of gonapophysis, *g*, long and straight. \mathcal{A} e-deagus, *a*, long and slender.

Male.—Length, about 6.2 millimeters; wing, 7.

LUZON, Laguna Province, Ube, March 24, 1929 (McGregor), allotype, male.

Limonia riverai is related to *L. bidentata* (Skuse), differing markedly in the long conspicuous costal fringe. Neither Edwards nor Brunetti mentions the costal fringe of *L. nigra* (Brunetti) as being of unusual length and it is presumably short as in *bidentata*, of which Edwards makes *nigra* a synonym.

LIMONIA (LIMONIA) UBENSIS sp. nov.

General coloration polished black; fore femora black, paler basally, remaining femora yellow, the tips narrowly blackened; wings with a brownish tinge; Sc ending about opposite one-third the length of Rs, Sc_2 at its tip; male hypopygium with the dorsal dististyle lacking; ventral dististyle an oval lobe, the long rostral prolongation subapical in position, with a single rostral spine.

Male.—Length, about 4.2 millimeters; wing, 4.8.

Maxillary palpi small, apparently reduced to two segments, obscure brownish yellow, the outer segment blackened. Antennæ black, the scapal segments paler; flagellar segments subglobular, crowded, the outer segments becoming more slender and elongate; verticils of the outer segments long and conspicuous. Head shiny black; anterior vertex wide.

Thorax shiny polished black, the posterior lateral portions of the scutal lobes paler. Pleura black, the sternopleurite and anepisternum paler, brown. Halteres dusky, the knobs conspicuously light yellow. Legs with the coxæ whitish, the trochanters somewhat darker; fore femora brownish black, the bases narrowly obscure yellow; posterior and middle femora yellow, the tips narrowly dark brown; remainder of legs brownish black. Wings (fig. 5) relatively broad, with a brownish tinge, the basal portion clearer; stigma barely indicated; veins brownish black. Venation: Sc_1 ending at near one-third the length of Rs, Sc_2 at

its tip; free tip of Sc_2 and R_2 in transverse alignment; m-cu shortly before the fork of M , longer than the distal section of Cu_1 .

Abdomen, including the hypopygium, black; subterminal segment whitish. Male hypopygium (fig. 36) with the tergite, $9t$, transverse, the caudal margin gently emarginate, each lateral angle with a chiefly transverse linear series of about eight setæ. Basistyle, b , relatively small, the ventromesal lobe very large, occupying the entire face of the style, evenly rounded. Dorsal dististyle lacking. Ventral dististyle, d , an elongate-oval lobe, the rostral prolongation nearly terminal in position, appearing as a slender yellow blade that is gently curved near apex; a single rostral spine that is placed laterally near the base of the prolongation pale, broad-based, narrowed gradually to a long slender point. Gonapophyses, g , broad-based, narrowed to the blunt tips, the lateral margin before apex microscopically roughened. Ædeagus, a , broad.

LUZON, Laguna Province, Ube, Mount Banahao, May 13, 1929 (McGregor), holotype, male.

Limonia ubensis is most closely allied to the Formosan *L. fraudulenta* Alexander, differing especially in the coloration and structure of the male hypopygium.

LIMONIA (LIMONIA) RETRUSA sp. nov.

General coloration of mesonotum shiny black; pleura obscure yellow; head black, variegated with silvery white, halteres black; legs black, the tarsi paling to yellowish brown; wings brown; Sc_1 ending beyond midlength of Rs ; male hypopygium with the mesal apical angles of the gonapophyses appearing as curved black spines.

Male.—Length, about 4.6 millimeters; wing, 5.2.

Rostrum and palpi dark brown. Antennæ with the first scapal segment brown, the second brownish black; flagellum broken. Front and anterior vertex silvery white, the posterior vertex blackened, broadly interrupted by conspicuous silvery areas on the posterior orbits; sides of head more pruinose.

Pronotum black, obscure yellow laterally. Mesonotal præscutum obscure yellow with three confluent shiny black stripes that form a dorsal shield; remainder of mesonotum blackened, the central portion of the scutum obscure yellow. Pleura obscure yellow, the dorsopleural region vaguely darkened. Halteres black, the extreme base of the stem yellow. Legs with the fore coxæ dark brown, the remaining coxæ and trochanters

obscure yellow; femora black, the proximal ends yellow; tibiae black; tarsi paling to yellowish brown. Wings (fig. 6) with a strong brown tinge, the oval stigma a little darker than the ground color; veins dark brown. Venation: Sc_1 ending beyond midlength of R_s , Sc_2 at its tip; free tip of Sc_2 and R_2 in approximate transverse alignment; m-cu at fork of M.

Abdomen dark brown, the hypopygium a trifle brighter. Male hypopygium (fig. 37) with the tergite, 9t, transverse, the caudal margin gently notched, each lobe with a marginal row of about six setae. Basistyle, b, elongate, the ventromesal lobe very low and inconspicuous. Dorsal dististyle a slender straight spine that lies in a furrow on the face of the ventral dististyle, the latter, vd, oval, produced apically into a beak that lacks rostral spines; a blackened chitinized ridge lying above the dorsal dististyle. Gonapophyses, g, with the mesal-apical lobe a curved blackened spine.

LUZON, Laguna Province, Ube, Mount Banahao, May 27, 1929 (McGregor), holotype, male.

Limonia retrusa is most similar, but apparently not closely allied, to such species as *L. fraudulentata* Alexander and *L. ubensis* sp. nov.

LIMONIA (LIMONIA) PACATA sp. nov.

Size very small (wing, female, 3.8 millimeters); general coloration yellowish brown; head dark gray; halteres and legs brown; wings faintly tinged with brown; cell M_2 open by the atrophy of m; caudal margins of abdominal segments narrowly darkened.

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

Rostrum and palpi brown. Antennae brownish black throughout; flagellar segments oval, distinctly separated. Head dark gray; anterior vertex reduced to a narrow strip.

Mesonotum uniformly yellowish brown, unmarked, the scutellum a little darker; præscutum relatively high. Pleura obscure yellow. Halteres brownish black, the base of the stem pale. Legs with the coxæ and trochanters obscure yellow; remainder of legs dark brown. Wings (fig. 7) with a faint brownish tinge, the oval stigma slightly darker brown; veins dark brown. Costal fringe relatively long. Venation: Sc_1 ending about opposite one-third the length of R_s , Sc_2 at its tip; free tip of Sc_2 and R_2 in alignment; cell M_2 open by atrophy of m; cell M_3 about as long as its petiole; m-cu close to the fork of M.

Abdominal tergites dark brown, the caudal margins of the segments narrowly blackened; sternites more brownish yellow,

the caudal margins of the intermediate segments similarly darkened. Ovipositor horn-color; tergal valves small and slender, upcurved; sternal valves stout and straight, their bases conspicuously blackened.

LUZON, Laguna Province, above Ube, altitude about 500 meters, June 10, 1928 (*McGregor*), holotype, female; May 18, 1929 (*Dwyag*), paratype, female.

Limonia pacata can be distinguished from similar small species of the subgenus by the venation.

LIMONIA (LIMONIA) SUBALBITARSIS sp. nov.

General coloration polished black; halteres and legs black, the tarsi extensively snowy white; wings tinged with blackish; m-cu beyond the fork of M; male hypopygium with a single rostral spine on the ventral dististyle; basistyle with the ventromesal lobe still further produced into a slender cylindrical lobule.

Male.—Length, about 6.8 to 7 millimeters; wing, 7.5 to 8.

Female.—Length, about 6.3 to 6.4 millimeters; wing, 6.5 to 7.

Rostrum and palpi dark brown. Antennæ brownish black throughout. Head polished black, the front and anterior vertex more opaque, sparsely silvery; anterior vertex broad in both sexes.

Mesonotum chiefly polished black, the humeral and lateral portions of the præscutum, median region of scutum, and lateral portions of postnotum paling to obscure yellowish brown. Pleura obscure brownish yellow. Halteres black, the extreme base of the stem yellow. Legs with the coxæ and trochanters obscure yellow; femora and tibiæ brownish black; tarsi chiefly snowy white, the proximal ends of the basitarsi of fore and middle legs extensively blackened, of the posterior legs entirely snowy white. Wings (fig. 8) strongly tinged with blackish, the apex somewhat darker; veins black. Venation: Sc long, Sc₁ ending beyond three-fourths the length of the long arcuated Rs, Sc₂ some distance from the tip of Sc₁; R₁₊₂ subequal to R₂; m-cu in almost all cases more than one-half its length beyond the fork of M and only a little shorter than the distal section of Cu₁.

Abdominal tergites black, each with a broad obscure yellow ring shortly before the caudal margin which is narrowly blackened; sternites more extensively yellow, the incisures narrowly blackened; subterminal segments blackened to form a narrow ring; eighth segment pale; hypopygium brown. Male hypopygium (fig. 38) with the tergite, 9t, unusually narrow, transverse,

its caudal margin straight. Basistyle, *b*, long and slender; ventromesal lobe low, further produced into a cylindrical darkened lobule that is set with six to eight small spines. Dorsal dististyle a small straight darkened rod. Ventral dististyle, *vd*, fleshy, the rostral prolongation yellow, near apex with a single long powerful spine. Gonapophyses with the mesal-apical lobe long and straight. Ovipositor with the tergal valves small, slender, much smaller than the sternal valves, the latter straight, conspicuously blackened at base.

LUZON, Laguna Province, Ube, Mount Banahao, May 20, 1929 (*McGregor*), holotype, male; allotype, female; paratypes, four males and females, May 19 and 20, 1929 (*McGregor*); males, June 2, 1929 (*Duyag*). "This fly was resting on a spider web, not hanging from it."—MCGREGOR.

Limonia subalbitarsis is most closely allied to *L. albitarsis* (Alexander) of Java, differing especially in the coloration and details of venation. The details of structure of the male hypopygium of *albitarsis* have not been described.

LIMONIA (LIMONIA) TRIGONOIDES SUBTRIGONOIDES subsp. nov.

Closely similar to the typical form, *Limonia trigonoides* Alexander (Federated Malay States and Sumatra, east to Buru), differing chiefly in slight details of structure of the male hypopygium.

Male.—Length, about 7 millimeters; wing, 8.8.

Antennæ with the terminal segment shorter than the preceding two segments taken together. Frons and anterior vertex blackened, not silvery. Median dark vitta of præscutum scarcely indicated. Pleura with the major portion of the sternopleurite pale. Knobs of halteres blackened. Wings (fig. 9) with R_2 more transverse or bent slightly backward; R_s shorter than in the typical form. Male hypopygium (fig. 39) with the dorsal dististyle, *dd*, a shorter curved hook, not sinuous as in the typical form. Rostral prolongation of ventral dististyle, *vd*, and the spine at its base shorter.

LUZON, Laguna Province, Ube, Mount Banahao, swept from low ferns, May 12, 1929 (*McGregor*).

LIMONIA (GONIODINEURA) NIGRICEPS (van der Wulp).

Goniodineura nigriceps VAN DER WULP, Tijds. voor Ent. 38 (1895) 37-38, pl. 2, fig. 3.

Majayjay, Laguna Province, Luzon, on grass and shrubs, June 3, 1928 (*McGregor*). Badajoz, Tablas, Romblon Province,

August 29, 1928 (*Rivera and Duyag*). Santa Ines, Rizal Province, Luzon, December, 1926 (*Rivera and Duyag*).

LIMONIA (RHIPIDIA) PULCHRA (de Meijere).

Rhipidia pulchra DE MELJERE, Bijd. tot de Dierkunde 18 (1904) 92, pl. 8, fig. 7.

One female, Ube, Laguna Province, Luzon, March 31, 1929 (*McGregor*).

LIMONIA (GERANOMYIA) ARGENTIFERA (de Meijere).

Geranomyia argentifera DE MELJERE, Tijd. voor Ent. 56 (1911) 29, pl. 2, figs. 18, 19.

Ube, Laguna Province, Luzon, March, 1928 (*Duyag*).

LIMONIA (THRYPTICOMYIA) APICALIS (Wiedemann).

Limnobia apicalis WIEDEMANN, Aussereur. zweifl. Ins. 1 (1828) 551.

Majayjay, Laguna Province, Luzon, February 22, 1929 (*McGregor*). "Abundant in shade of coffee and other shrubs, hanging by forelegs from spider lines, one or two up to six or eight on a line."

LIMONIA (THRYPTICOMYIA) MICROSTIGMA (Alexander).

Dicranomyia microstigma ALEXANDER, Ann. & Mag. Nat. Hist. IX 8 (1921) 546-547.

Described from North Queensland. One male, Loquilocon, Samar, in cool forest near stream, June 15, 1924 (*McGregor*).

ORIMARGA RELICTA sp. nov.

General coloration blue-gray; legs black; wings brownish gray, with narrow vague darkenings on certain of the veins; R_1 and R_2 in approximate alignment; R_{1+2} evident as a distinct spur.

Female.—Length, about 5.5 millimeters; wing, 4.6.

Rostrum black, nearly as long as the remainder of the head; palpi black. Antennæ black throughout, relatively elongate, if bent backward extending about to the wing root; flagellar segments long-oval. Head gray, the genæ more dusky, the anterior vertex more silvery gray.

Mesonotum and pleura blue-gray, without distinct markings. Halteres obscure yellow, the knobs dusky. Legs with the coxæ blue-gray; trochanters dusky; remainder of legs black. Wings (fig. 10) with a brownish gray suffusion; a very narrow and vague dusky seam along the outer costa to the wing tip, more evident in the radial field; narrow dark seams at origin of R_s , end of R_1 and on R_2 , and on m-cu, most evident as a darkening of the veins; veins light brown, the incrossated costa more yellow.

lowish brown. Macrotrichia on all the longitudinal veins beyond the cord between and including R_3 and M_1 . Venation: Sc_1 ending opposite midlength of R_s , Sc_2 at its extreme tip; free tip of Sc_2 usually preserved; R_1 in approximate alignment with R_2 ; R_{1+2} evident as a short spur; m-cu beyond midlength of R_s and about opposite Sc_2 ; vein 2d A elongate.

Abdominal tergites black, the basal sternites more yellowish; genital segment obscure yellow, the small valves of the ovipositor brown.

LUZON, Laguna Province, Ube, Mount Banahao, March 29, 1929 (*McGregor*).

Orimarga relicta is a very interesting species that shows well the manner of loss of veins in the radial field in this group of crane flies. The venation separates it from all regional species although this is generally similar to that of *O. punctipennis* Alexander, of British Guiana.

EURHAMPHIDIA NIGROFEMORATA sp. nov.

General coloration brown; legs dark brown, the genua not brightened; tips of tibiae and all tarsi snowy white; wings subhyaline, the stigma grayish brown; veins R_3 and R_{4+5} relatively short and widely divergent.

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

Rostrum dark brown, a little brightened at base; palpi dark. Antennæ with the basal segment pale brown; second segment blackened; flagellum broken. Head dark brownish gray, clearer silvery gray in front.

Mesonotum uniformly dark brown, the lateral margins of the præscutum restrictedly pale; scutellum somewhat darker brown, margined posteriorly with pale. Pleura testaceous yellow, the sternopleurite a little darkened and vaguely pruinose; posterior sclerites clearer yellow. Halteres infuscated, the base of the stem narrowly pale yellow. Legs with the coxæ and trochanters pale yellow, the fore coxæ a trifle more infuscated; femora brownish black, the bases very narrowly and vaguely paler, the tips not at all brightened; tibiae black, the tips broadly snowy white, the amount narrowest on the forelegs where it includes between one-fourth and one-fifth the segment, more extensive on the midtibia where it includes the distal two-fifths; posterior legs broken beyond the femora; tarsi snowy white, the terminal segments more darkened. Wings (fig. 11) hyaline, the long-oval stigma grayish brown; veins brown. Venation: Sc long, Sc_1 ending only shortly before the fork of R_s , Sc_2 at

its tip; veins R_3 and R_{4+5} relatively short and widely divergent; m-cu about two-thirds its length beyond the fork of M; vein 2d A relatively short.

Abdominal tergites uniformly dark brown, the sternites obscure yellow. Ovipositor yellowish, the valves darker, especially the slender tergal valves which are blackened, paling to yellow at tips.

LUZON, Laguna Province, above Ube, Mount Banahao, altitude about 800 meters, in cool damp forest, swept from low ferns and other herbage, May 18, 1929 (*McGregor*), holotype, female.

Eurhamphidia nigrofemorata is readily told from allied species by the leg pattern. It is apparently most nearly related to *E. inelegans* Alexander (Formosa), differing especially in the smaller size and entire absence of pale color on the genua.

EPIPHRAGMA BAKERI Alexander.

Epiphragma bakeri ALEXANDER, Philip. Journ. Sci. 21 (1922) 373-374.

The type, a male, was from Pauai, Benguet, Luzon. A small series of what are considered as being different subspecies of *bakeri* were taken above Ube, Mount Banahao, Luzon, altitude about 800 meters, swept from low ferns and other vegetation in cool damp forest, May 18, 1929 (*McGregor*).

These varietal or subspecific forms are very puzzling and their exact value must remain in doubt. They may be separated by the following key:

1. Tibiæ dark brown..... *E. bakeri* Alexander.
Tibiæ light yellow..... 2.
2. Mesonotum uniformly ochereous, without distinct marks; pleura dark, only the ventral sternopleurite brightened; supernumerary crossveins and spurs in cell C few (5 or 6)..... *E. b. ochrinota* subsp. nov.
Mesonotum variegated with darker; pleura variegated with dark brown and yellow; supernumerary crossveins and spurs in cell C more numerous (exceeding 8)..... 3.
3. Sternopleurite conspicuously dark brown; petiole of cell M₁ short, subequal to m..... *E. b. fuscosternata* subsp. nov.
Sternopleurite conspicuously light yellow; petiole of cell M₁ long, more than three times m..... *E. b. flavosternata* subsp. nov.

EPIPHRAGMA BAKERI OCHRINOTA subsp. nov.

Female.—Length, about 10 millimeters, wing, 8.5.

Antennæ with the basal three segments of flagellum yellow. Posterior vertex dull reddish brown, the central portion darker. Mesonotum uniformly pale ochereous, the caudal margin of the postnotal mediotergite narrowly dark brown. Pleura conspicuously dark brown, only the ventral sternopleurite obscure

yellow. Femora yellow, with a narrow brown subterminal ring; tibiæ yellow. Wings with the ground color brownish yellow, the prearcular and costal regions clearer yellow; dark pattern restricted, appearing as a postarcular area; a broken band at level of origin of Rs; a continuous band at cord; outer end of cell 1st M_2 ; and as marginal brown spots at ends of longitudinal veins; a slightly paler brown wash in the radial and medial fields distad of cord. No darkening of axilla. Venation: Only four or five crossveins and spurs in cell C; inner end of cell 1st M_2 only gently arcuated; petiole of cell M_1 short, subequal to m. Abdomen almost uniformly brown, only vaguely marked with obscure yellow. Holotype, female.

EPIPHRAGMA BAKERI FUSCOSTERNATA subsp. nov.

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

Mesonotal præscutum and scutal lobes extensively dark brown. Pleura chiefly pale yellow, variegated with dark brown, this color including a ventral longitudinal stripe that extends from the base of the halteres, passing above the midcoxæ and darkening the ventral sternopleurite; dorsopleural region darkened. Femora obscure brownish yellow, with a broad brown subterminal ring, the apex yellow; tibiæ yellow. Wings with a heavy secondary grayish brown pattern between the darker brown areas, restricting the yellow ground color to conspicuous borders to all dark areas; axillary region darkened. Venation: Costal crossveins and spurs numerous; inner end of cell 1st M_2 not arcuated, in alignment with the other elements of the cord; petiole of cell M_1 short, subequal to m. Holotype, female.

EPIPHRAGMA BAKERI FLAVOSTERNATA subsp. nov.

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

Mesonotal præscutum chiefly pale, the median area behind more darkened; scutal lobes yellow, the median area dark brown. Pleura chiefly brown, the sternopleurite conspicuously light yellow. Femora dark brown, the tips narrowly yellow; tibiæ light yellow. Wings with a light secondary grayish brown pattern between the heavy brown areas; axillary region darkened; a series of marginal dark spots on all longitudinal veins. Venation: Costal crossveins and spurs numerous; petiole of cell M_1 elongate, more than three times m; inner end of cell 1st M_2 not arcuated, in alignment with the other elements of the anterior cord. Holotype, male.

ERIOCERA LATIVENTRIS Bezzi.

Eriocera lativentris BEZZI, Philip. Journ. Sci. 12 § D (1917) 113.

One male, Majayjay, February 24, 1929 (*McGregor*). "Resting on upper surface of a large leaf, it suggested a hymenopteron or a slender hemipteron."

ERIOCERA VERTICALIS (Wiedemann).

Megistocera verticalis WIEDEMANN, Aussereur, zweifl. Ins. 1 (1828) 56.

Male, Lucban, Tayabas, Luzon, May 20, 1926 (*McGregor*). "In shade, by side of small stream."

ELEPHANTOMYIA (ELEPHANTOMYODES) SAMARENSIS Alexander.

Elephantomyia samarensis ALEXANDER, Philip. Journ. Sci. 28 (1925) 372-373.

The interesting observations by Mr. *McGregor* add this genus to the ever-increasing list of white-footed crane flies that are associated with spider webs.

Majayjay, Luzon, June 1 to 3, 1928, flying in light forest (*McGregor*). Ube, Luzon, May 13, 1929, two males, hanging from a horizontal spider line, much as in *Thrypticomyia* and *Euglochina* in the same locality (*McGregor*). Majayjay, June 2, 1928, hanging by forefeet from spider line (*McGregor*).

GNOPHOMYIA FILIFORMIS sp. nov.

Mesonotal præscutum reddish brown with three dark brown stripes; antennæ (male) elongate; pleura brownish yellow, the anepisternum and pleurotergite each with a velvety black area; Sc long, extending to beyond the oblique R_2 ; cell 1st M_2 relatively small; male hypopygium with the ædeagus and gonapophyses very elongate, filiform.

Male.—Length, about 5.5 millimeters; wing, 5.8; antenna, about 3.2.

Female.—Length, about 4.8 millimeters; wing, 5; antenna, about 2.4.

Rostrum yellow; palpi black. Antennæ (male) elongate, as shown by the measurements; dark brown; flagellar segments elongate-cylindrical, clothed with a dense erect white pubescence, each segment with a single relatively short verticil at about one-third the length of the segment. Head blackened, the orbits and anterior vertex narrowly light gray.

Mesonotal præscutum reddish brown, with three dark brown stripes; humeral region obscure yellow, much constricted; surface of præscutum behind with parallel transverse impressed

lines; scutal lobes extensively brownish black, the posterior lateral portions obscure yellow; scutellum brownish testaceous; postnotum blackened, sparsely pruinose. Pleura chiefly pale brownish yellow; a large circular velvety black area on the anepisternum and a second similar area occupying most of the pleurotergite, the two areas interrupted by the uniformly pale pteropleurite; ventral sternopleurite weakly infumed. Halteres black, the base of the stem restrictedly pale yellow, the knobs obscure yellow. Legs with the coxæ pale brown, the fore coxæ a little darker; trochanters brownish yellow; femora light yellowish brown, the bases somewhat clearer; tibiæ a little darker; tarsi passing into brown. Wings (fig. 12) grayish, weakly tinged with brown on proximal half; stigmal region pale brown, ill-delimited; veins brownish black. Venation: Sc_1 extending to shortly beyond the oblique R_2 ; cell 1st M_2 relatively small; m arcuated to weakly angulated, nearly twice as long as the basal section of M_2 ; $m-cu$ approximately its own length beyond the fork of M .

Abdomen brown, the hypopygium darker brown. Male hypopygium (fig. 40) with the tergal region only weakly chitinized, appearing as a flattened pale plate, the lateral portions only slightly more chitinized. Dististyles inserted in a notch on the mesal face of the basistyle; outer dististyle, *od*, a yellow boomerang-shaped glabrous structure; inner dististyle blackened and provided with numerous long delicate setæ. *Æ*deagus, *a*, and subtending apophyses, *g*, extending back into the abdomen as far as segment six. Ovipositor (fig. 41) with the tergal valves compressed, deep, gently upcurved to the subobtuse tips, the surface with a few setæ, including a more powerful one close to apex.

LUZON, Laguna Province, above Ube, Mount Banahao, altitude about 800 meters, in cool damp forest, swept from low ferns and other herbage, May 18, 1929 (*McGregor*), holotype, male; allotype, female, in copula with the type.

Gnophomyia filiformis is very distinct from all similar species in the Oriental fauna. The antennæ of the male of this and the next species are unusually elongate.

GNOPHOMYIA MACROCERA sp. nov.

General coloration black, pruinose; antennæ (male) elongate; halteres brownish black; wings with a dusky suffusion; male hypopygium with the inner dististyle blackened, the innermost arm broad, with a curved blackened spine on its disk.

Male.—Length, about 4 millimeters; wing, 4.5; antenna, about 3.3.

Rostrum and palpi black. Antennæ black, elongate in the male, exceeding three-fourths the length of the body; flagellar segments elongate-cylindrical, with an erect pubescence and a whorl of about three verticils at near one-third the length, the longest of these verticils about two-thirds the length of the segment; terminal segment a little shorter than the penultimate. Head black, pruinose.

Mesonotum black, the surface pruinose. Pleura gray, the anepisternum and pleurotergite more velvety black. Halteres brownish black, the extreme base of the stem obscure yellow. Legs with the coxæ black, pruinose; trochanters dark brown; remainder of legs black, the femoral bases restrictedly obscure yellow. Wings (fig. 13) with a dusky suffusion, the elongate stigma more infuscated; veins black. Venation: Sc_1 ending nearly opposite the slightly oblique R_2 ; cell 1st M_2 relatively large, m and the basal section of M_3 subequal, nearly straight; $m-cu$ a little more than its length beyond the fork of M .

Abdomen, including the hypopygium, black. Male hypopygium (fig. 42) with the basistyle, *b*, short and stout, the dististyles terminal in position; outer dististyle, *od*, a glabrous arcuate rod; inner dististyle, *id*, large and conspicuous, blackened, the outer arm slender, setiferous; inner arm broad, the tip obtuse, before apex on disk with a curved blackened spine. \AA eideagus short.

LUZON, Laguna Province, Ube, Mount Banahao, May 20, 1929 (*McGregor*), holotype, male; paratypes, males and females, March 29 and May 27, 1929 (*McGregor*); May 10 and 26 and June 3, 1929 (*Duyag*).

GONOMYIA (LIPOPHLEPS) LONGIRADIALIS sp. nov.

General coloration of mesonotum dark brown; antennæ brownish black throughout; pleura yellow, with a blue-gray longitudinal stripe; legs black; wings tinged with brown; Sc long, Sc_1 extending to about opposite one-third the length of the long Rs ; cell 1st M_2 closed; $m-cu$ at fork of M ; male hypopygium with the single dististyle fleshy.

Male.—Length, about 2.8 millimeters; wing, 3.3.

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

Rostrum yellowish brown; palpi dark brown. Antennæ brownish black throughout. Head chiefly dark, sparsely pruinose.

Pronotum and anterior lateral pretergites yellowish white. Mesonotum dark brown; scutellum brown basally, paling to yellow at apex; postnotal mediotergite dark brown, sparsely pruinose, the cephalic lateral portions more yellowish. Pleura yellow, with a blue-gray longitudinal stripe extending from the propleura to the base of the abdomen. Halteres dusky, the knobs dirty yellow. Legs with the coxæ yellow, the outer faces weakly infuscated; trochanters obscure yellow; remainder of legs black, the femoral bases scarcely brightened. Wings (fig. 14) tinged with brown, the stigma scarcely darker; veins dark brown. Venation: Sc_1 ending about opposite one-third the length of the very long Rs , Sc_2 at its tip; Rs only a trifle shorter than the anterior branch of Rs ; $m-cu$ at fork of M .

Abdominal tergites dark brown, the sternites and hypopygium brighter. Male hypopygium (fig. 43) with the apex of each basistyle, *b*, produced into a small fleshy lobe. Dististyle, *d*, single, entirely fleshy, of approximately similar shape and size as the apical lobe of the basistyle. Phallosome, *p*, very complicated, terminating in five distinct arms that are shaped about as in the figure.

LUZON, Laguna Province, Ube, Mount Banahao, March 31, 1929 (McGregor), holotype, male; allotype, female, May 27, 1929 (McGregor).

Gonomyia longiradialis is entirely distinct from the numerous regional species of the subgenus *Lipophleps* in the elongate Rs , with Sc_1 ending about opposite one-third its length. The venational characters given as definitive for *Lipophleps* by Edwards⁴ will thus require a slight modification.

TRENTEPOHLIA (PARAMONGOMA) BANAHAOENSIS sp. nov.

General coloration pale brown, the mesonotal præscutum yellow; femora brown, the tips narrowly whitened; terminal tarsal segments paling to yellow; wings grayish, the narrow stigma a little darker; abdominal tergites brown.

Female.—Length, about 4 millimeters; wing, 4.2.

Rostrum reduced, yellow; palpi small. Antennæ with the basal segment yellow; second segment brown; flagellum black; segments gradually decreasing in size outwardly. Head yellowish brown; eyes virtually contiguous dorsally.

Mesonotal præscutum yellow, with a capillary, more or less impressed, median brown vitta; posterior sclerites of mesonotum

⁴Journ. Fed. Malay States Mus. 14 (1928) 103.

more brownish testaceous, the centers of the scutal lobes more infumed. Pleura pale testaceous yellow, the dorsal portions weakly darkened. Halteres pale, the knobs slightly infumed. Legs with the coxæ pale yellow; trochanters testaceous yellow; femora brown, the tips very narrowly whitened; remainder of legs brown, the terminal tarsal segments paling to yellow, the color including the tips of the basitarsi and the succeeding segments with the exception of the darkened terminal segment. Wings (fig. 15) grayish; stigma a little darker, restricted to a narrow clouding on R_2 and R_{1+2} ; veins brown, the prearcular, costal, subcostal, and cubital veins a little paler. Venation: Sc_1 ending just beyond the level of the fork of R_s ; Sc_2 about opposite two-fifths the length of R_s ; cell Cu widely open, the distance on the margin exceeding the distal section of Cu_1 .

Abdominal tergites brown, the sternites somewhat more brownish yellow; genital segment yellow; valves of ovipositor brownish horn-color.

LUZON, Laguna Province, Ube, Mount Banahao, May 20, 1929 (McGregor), holotype, female.

Trentepohlia banahaoensis is the first species of the subgenus *Paramongoma* Brunetti to be recorded from the Philippines. It is most closely allied to *T. (P.) pusilla* Edwards (Sebesi), from which it differs in slight details of coloration and venation of the radial field.

TRENTEPOHLIA (MONGOMA) RICARDI sp. nov.

General coloration shiny yellow; head gray; posterior portion of mesonotal præscutum, the scutal lobes, two areas on scutellum, and the postnotal mediotergite darkened; legs yellow, the femoral tips, tibial bases, and tips and proximal ends of the basitarsi narrowly blackened; wings grayish white, the costal region clear luteous, the apex very narrowly darkened.

Male.—Length, 6.5 to 7.3 millimeters; wing, 6.5 to 7.3.

Female.—Length, 8.5 to 11 millimeters; wing, 7 to 8.

Rostrum and palpi pale. Antennæ (male) elongate for a member of this genus, if bent backward extending to beyond the base of abdomen; scape blackened; flagellum whitish, the outer segments vaguely darkened; flagellar segments cylindrical, with a short dense pubescence. In the female the antennæ are shorter, extending about to the base of the halteres, the scape paler. Head of male blackish, more or less pruinose, of female somewhat paler, the narrow anterior vertex more silvery.

Mesonotum shiny yellow, the posterior portion of the præscutum, scutal lobes, two areas on scutellum, and the center of the postnotal mediotergite darkened. Pleura yellow. Halteres yellow, the base of the knobs a little darkened. Legs with the coxæ and trochanters pale yellow; femora yellow, the tips narrowly but conspicuously blackened; a more whitish ring immediately before the blackened portion, the genua again restrictedly pale; tibiæ pale yellow, the bases narrowly, the tips more broadly blackened; tarsi yellow, the extreme proximal end of the basitarsus blackened. Basal armature of femora consisting of erect setæ only. Wings (fig. 16) grayish white, the costal margin clear luteous; some of the veins, especially in the radial field, along cord, and in the anal field narrowly darkened; wing apex narrowly darkened; veins black, the prearcular veins, C, Sc, and R conspicuously pale yellow. Venation: Rs approximately one-half R_{2+3+4} ; R_2 close to fork of R_{3+4} ; cell 1st M_2 relatively small; m-cu about one-half to fully its own length beyond the fork of M; fusion of Cu_1 and 1st A slight.

Abdominal tergites brownish yellow, darkest medially; sternites and hypopygium clearer yellow.

LUZON, Laguna Province, Ube, Mount Banahao, March 30, 1929 (*McGregor*), holotype, male; allotype, female; paratypes, several of both sexes, March 27 to May 26, 1929 (*McGregor and Duyag*). One paratype was found resting on leaves of a *Pandanus*.

I take great pleasure in dedicating this species to Mr. McGregor, as a slight appreciation of my indebtedness to him in making known the interesting tipulid fauna of the Philippines. The species is most closely allied to *T. (M.) kempfi* (Brunetti) of Assam, differing in the details of coloration of the body, legs, and wings. It may be observed that no fewer than ten species of *Trentepohlia* have now been taken at and above Ube.

TRENTEPOHLIA (MONGOMA) POLIOCEPHALA Alexander.

Trentepohlia (Mongoma) poliocephala ALEXANDER, Philip. Journ. Sci. 40 (1929) 266.

A few additional specimens, Ube, March 30, 1929 (*McGregor*). I have recently seen a specimen of this same species from Palm Island, North Queensland, taken May 1, 1929, by J. E. Claffey, contained in the collections of the Australian Institute of Tropical Medicine.

The accession of this additional material further demonstrates that the type male has the venation abnormal. In normal specimens, R_s is from one-half longer to nearly twice the length of the basal section of R_2 , R_2 is subequal to R_{2+3} , and cell 1st M_2 is larger and more as in other species of the subgenus.

TOXORHINA ANGUSTILINEA sp. nov.

General coloration of head and mesonotum yellow; thoracic pleura yellow with a conspicuous black dorsal stripe; knobs of halteres brownish black; wings with a weak brown tinge; cell M_2 open by the atrophy of m ; intermediate abdominal tergites brownish black, variegated with yellow.

Female.—Length, excluding rostrum, about 7.5 millimeters; wing, 5.8; rostrum, about 7.8.

Rostrum approximately as long as the body, black throughout. Antennæ with the scapal segments brownish black, the second a little paler; flagellum broken. Head yellow.

Cervical region black, unusually short, concealed beneath the unusually protruding præscutum, which thus nearly reaches the head. Mesonotal præscutum chiefly yellow, with vague indications of a capillary median vitta and broader sublateral brown stripes; scutellum dusky, margined with obscure yellow; postnotal mediotergite yellow, marked medially with dark brown. Pleura light yellow with a narrow black dorsal stripe extending from the cervical region to the base of the abdomen. Halteres obscure yellow, the knobs brownish black. Legs with the coxæ and trochanters yellow; remainder of legs dark brown. Wings (fig. 17) with a weak brown tinge, the centers of the cells somewhat paler; veins brown. Venation: Sc_1 ending just beyond the origin of R_s ; R_1 ending about opposite two-thirds the length of R_s ; cell M_2 open by the atrophy of m ; petiole of cell M_3 one-half longer than M_4 ; $m-cu$ before the fork of m .

Abdominal tergites brownish black, the subcaudal portions of tergites four to eight with a conspicuous yellow area, the narrow caudal margins somewhat paler than the blackened basal rings; sternites obscure yellow, the incisures and lateral portions more infuscated; genital segment yellow. Ovipositor with the valves long and straight.

LUZON, Laguna Province, above Ube, Mount Banahao, altitude about 800 meters, in cool damp forest, swept from low ferns and other herbage, May 18, 1929 (*McGregor*), holotype, female.

Toxorhina angustilinea is generally similar to *T. trichorhyncha* Edwards (Borneo), differing in the smaller size, strongly produced præscutum, and short neck. It differs from *T. producta* Edwards (Perak) in the short neck and pale coloration of the mesonotum.

TOXORHINA DUYAGI sp. nov.

General coloration gray; second antennal segment conspicuously yellow; thoracic pleura with the dorsal half gray, the ventral half abruptly ochereous; halteres dark brown; abdominal tergites uniformly dark brown.

Female.—Length, excluding rostrum, about 5 millimeters; wing, 5.2; rostrum, about 5.

Rostrum approximately as long as the body, black. Antennæ black, the second segment conspicuously yellow. Head light gray, the center of the vertex weakly darkened, the front more yellowish gray; no corniculus.

Mesonotal præscutum light gray, with three confluent brown stripes; scutum and scutellum brownish gray, the postnotum clearer blue-gray. Pleura dimidiate, the dorsal half, including the dorsopleural region and pleurotergite gray, the ventral half, including the sternopleurite and meron abruptly ochereous. Halteres dark brown, the base of the stem narrowly yellow. Legs with the coxæ and trochanters ochereous; femora dark brown, their bases brighter; tibiæ and tarsi passing into black. Wings (fig. 18) with a faint dusky tinge; veins black. Venation: Sc_1 ending opposite the origin of Rs , Sc_2 some distance from its tip; cell M_2 open by the atrophy of m ; $m-cu$ close to the fork of M .

Abdominal tergites uniformly dark brown, the sternites more obscure yellow, vaguely lined with dusky; hypopygium brownish yellow, relatively large. Male hypopygium (fig. 44) with the median lobe of the tergite, $9t$, transverse, darkened, the caudal margin truncate. Outer dististyle, od , a slender twisted spine. Inner dististyle, id , more or less hatchet-shaped. Arms of the ædeagus, a , short.

LUZON, Laguna Province, Ube, Mount Banahao, March 22, 1929 (*A. C. Duyag*), holotype, male; paratype, male.

I take pleasure in naming this distinct *Toxorhina* in honor of the collector, who has secured many interesting Tipulidæ near Ube. The species is closest to *T. fasciata* Edwards (Borneo), differing in the coloration of the antennæ, halteres, and abdomen.

ILLUSTRATIONS

[Legend: a, aedeagus; b, basistyle; d, dististyle; dd, dorsal dististyle; g, gonapophysis; id, inner dististyle; od, outer dististyle; p, phallosome; s, sternite; t, tergite; vd, ventral dististyle.]

PLATE 1

- FIG. 1. *Nesopeza oberon* sp. nov., wing.
2. *Tipula fuscoangustata* sp. nov., wing.
3. *Limonia (Libnotes) illecebrosa* sp. nov., wing.
4. *Limonia (Libnotes) notata* (van der Wulp), wing.
5. *Limonia (Limonia) ubensis* sp. nov., wing.
6. *Limonia (Limonia) retrusa* sp. nov., wing.
7. *Limonia (Limonia) pacata* sp. nov., wing.
8. *Limonia (Limonia) subalbitarsis* sp. nov., wing.
9. *Limonia (Limonia) trigonoides subtrigonoides* subsp. nov., wing.
10. *Orimarga relictata* sp. nov., wing.
11. *Eurhamphidia nigrofemorata* sp. nov., wing.
12. *Gnophomyia filiformis* sp. nov., wing.
13. *Gnophomyia macrocera* sp. nov., wing.
14. *Gonomyia (Lipophleps) longiradialis* sp. nov., wing.
15. *Trentepohlia (Paramongoma) banahaensis* sp. nov., wing.
16. *Trentepohlia (Mongoma) ricardi* sp. nov., wing.
17. *Toxorhina angustilinea* sp. nov., wing.
18. *Toxorhina duyagi* sp. nov., wing.

PLATE 2

- FIG. 19. *Scamboneura dotata* Osten Sacken, male hypopygium, lateral.
20. *Scamboneura dotata* Osten Sacken, male hypopygium, ninth tergite.
21. *Scamboneura dotata* Osten Sacken, male hypopygium, outer dististyle.
22. *Scamboneura dotata* Osten Sacken, male hypopygium, appendage of ninth sternite.
23. *Scamboneura psarophanes* Alexander, male hypopygium, ninth tergite.
24. *Scamboneura psarophanes* Alexander, male hypopygium, outer dististyle.
25. *Scamboneura psarophanes* Alexander, male hypopygium, inner dististyle.
26. *Scamboneura psarophanes* Alexander, male hypopygium, appendage of ninth sternite.
27. *Scamboneura vittivertex* sp. nov., male hypopygium, lateral.
28. *Scamboneura vittivertex* sp. nov., male hypopygium, ninth tergite.
29. *Scamboneura vittivertex* sp. nov., male hypopygium, outer dististyle.

- FIG. 30. *Scamboneura vittivertex* sp. nov., male hypopygium, inner dististyle.
31. *Scamboneura vittivertex* sp. nov., male hypopygium, appendage of ninth sternite.
32. *Scamboneura hirtisternata* sp. nov., male hypopygium, lateral.
33. *Scamboneura hirtisternata* sp. nov., male hypopygium, ninth tergite.

PLATE 3

- FIG. 34. *Limonia (Libnotes) illecebrosa* sp. nov., male hypopygium.
35. *Limonia (Libnotes) riverai* Alexander, male hypopygium.
36. *Limonia (Limonia) ubensis* sp. nov., male hypopygium.
37. *Limonia (Limonia) retrusa* sp. nov., male hypopygium.
38. *Limonia (Limonia) subalbitarsis* sp. nov., male hypopygium.
39. *Limonia (Limonia) trigonoides subtrigonoides* subsp. nov., male hypopygium.
40. *Gnophomyia filiformis* sp. nov., male hypopygium.
41. *Gnophomyia filiformis* sp. nov., ovipositor.
42. *Gnophomyia macrocera* sp. nov., male hypopygium.
43. *Gonomyia (Lipophleps) longiradialis* sp. nov., male hypopygium.
44. *Toxorhina duyagi* sp. nov., male hypopygium.

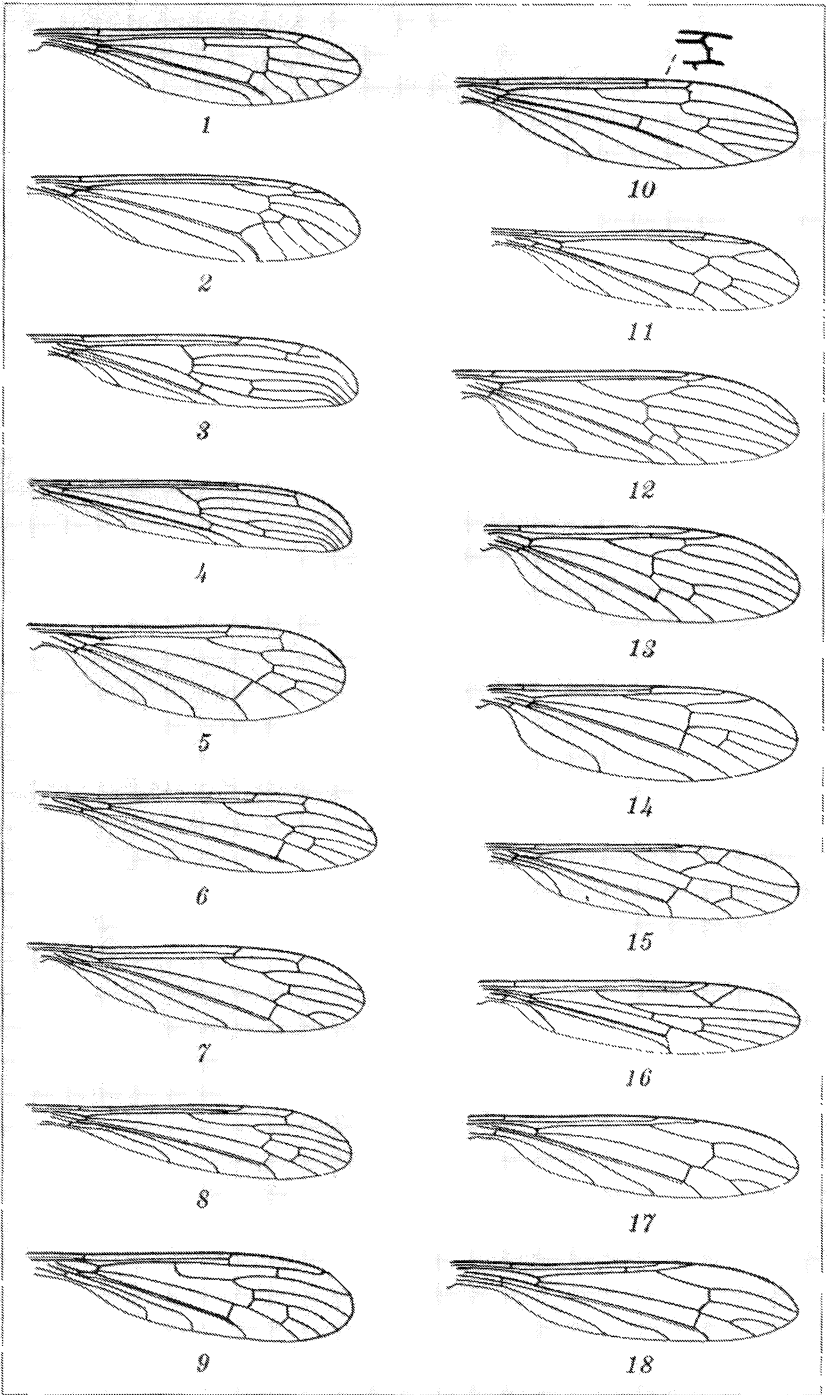


PLATE 1.

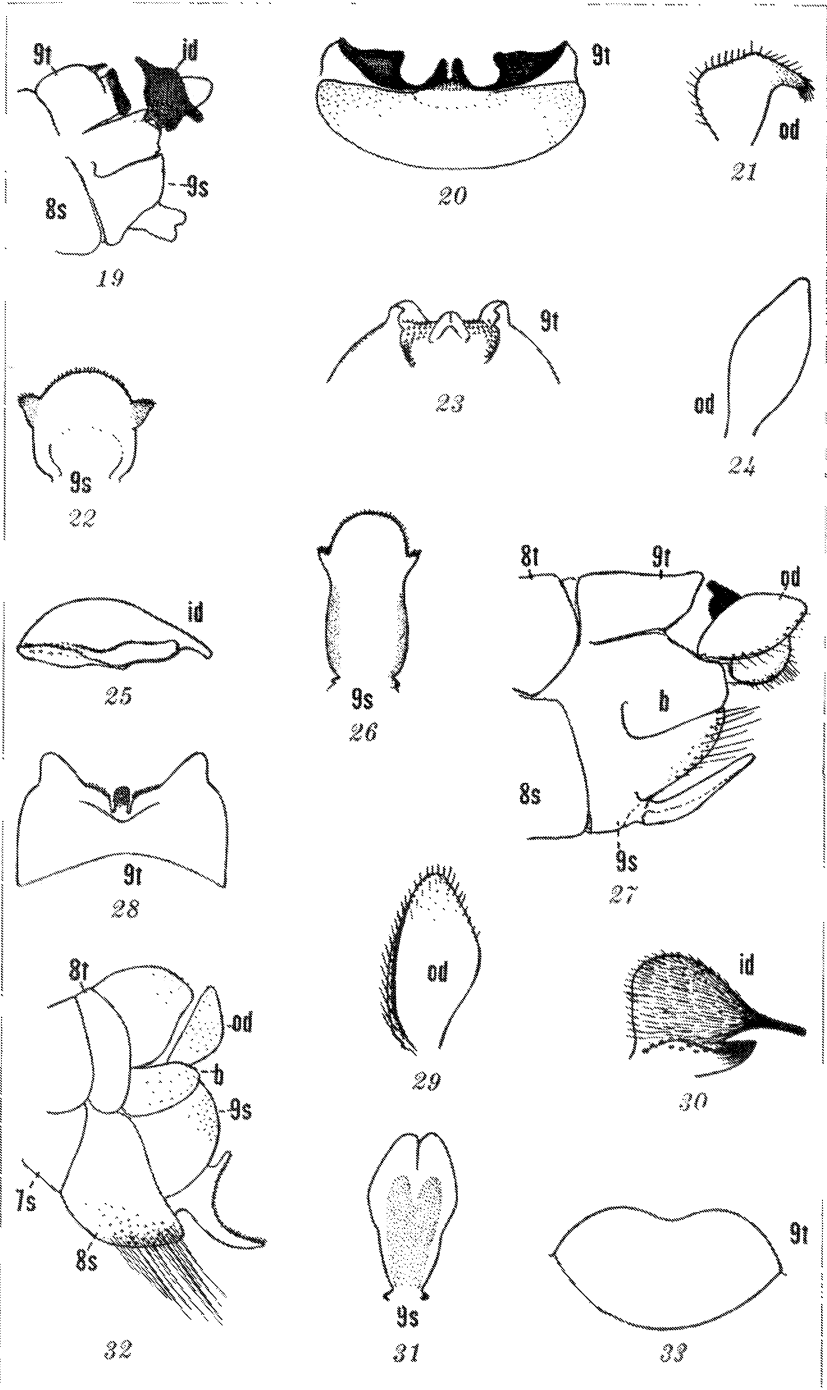


PLATE 2

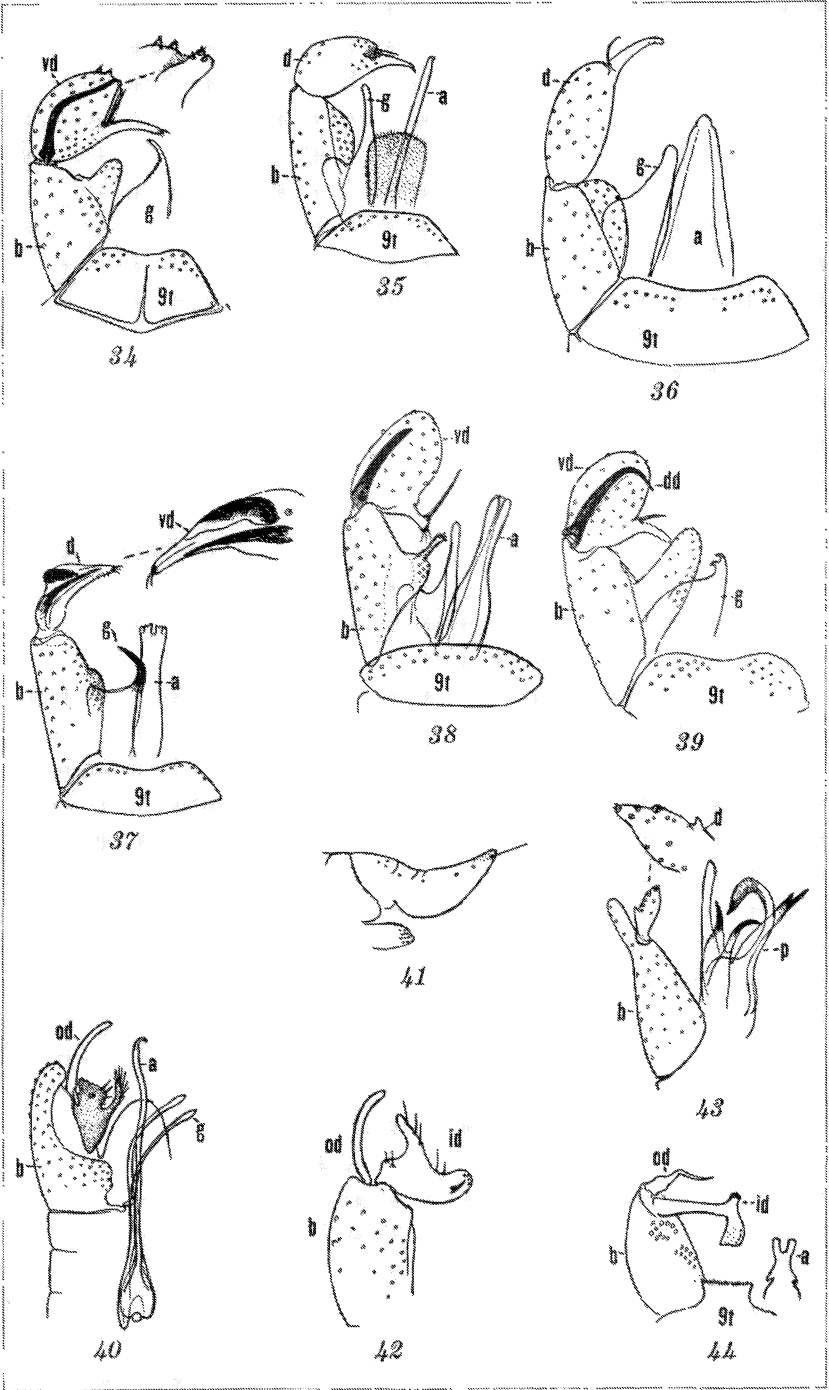


PLATE 3.