

NEW OR LITTLE-KNOWN TIPULIDÆ FROM EASTERN ASIA (DIPTERA), XXXII¹

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TWO PLATES

Virtually all of the species of crane flies herein discussed are from Hainan Island where they were collected in 1935 by Mr. J. Linsley Gressitt. A few additional species are from the Khasi Hills, Assam, secured by Mr. S. Sircar and associated entomologists. All the types of novelties described at this time are preserved in my very extensive collection of these flies. I wish to express my very deepest thanks to the above-mentioned entomologists for their friendly coöperation in continuing this study of the Tipulidæ of southeastern Asia.

The rather extensive collections made in Hainan proved to be of exceptional interest, since virtually nothing had been made known of this rich faunal area. I am indebted to Mr. Gressitt for the following notes concerning various collecting stations at which Tipulidæ were secured:

TA HIAN. Altitude 2,000 feet, by stream, near northwestern foot of the Five Finger Mountains, south of the middle of the island; 10 miles south of Fan Heang.

TA HAN. Altitude 2,500 feet; small valley between passes of the Loi Mother Ranges and the Red Mist (Hung Mo) Range; on way from Nodoa to the Five Finger Mountains, about 20 miles north of Ta Hian.

TA HAU. Altitude about 900 feet; a small village near Vo Lau, in Dam-Chui, west and slightly south of Nodoa about 30 miles; flat country.

NODOA (NOTAI). Altitude about 1,000 feet; flat country, in the northwest-central part of the island.

FAN TA. Altitude about 1,250 feet; 22 miles south of Nodoa; beginning of low mountains.

CHUNG KON. Altitude about 1,050 feet; between Nodoa and Loi Mother Mountain, near Deng-ag River.

¹ Contribution from the entomological laboratory, Massachusetts State College.

DWA BI (TAI PIN). Altitude about 1,500 feet, at foot of north end of Loi Mother Range; about 20 miles west and slightly north of Liamui, near the center of the island.

LIAMUI. Altitude about 1,200 feet, near the eastern edge of mountains on a low plateau, with mountains on its east, between it and the great northern plain. From the hills around can be seen the Loi Mother Mountain, Red Mist Mountain, and the Five Fingers, to the west and southwest.

Besides the score of species of Tipulidæ described as new in the present report, Mr. Gressitt secured a number of additional crane flies that are recorded herewith to complete the data.

LIMONIA (RHIPIDIA) PULCHRA (de Meijere).

Ta Hian, June 13, 1935.

LIMONIA (GERANOMYIA) ARGENTIFERA (de Meijere).

Ta Hian, June 14, 1935; Ta Han, June 7, 1935; Liamui, July 31, 1935.

LIMONIA (THRYPTICOMYIA) APICALIS (Wiedemann).

Ta Hian, June 11, 1935; Ta Han, June 22 and 23, 1935.

CONOSIA IRRORATA (Wiedemann).

Ta Hian, June 15 to 18, 1935; Ta Han, June 22 to 24, 1935; Ta Hau, July 3, 1935; Nodoa, June 30, 1935; Chung Kon, July 17, 1935.

TRENTEPOHLIA (MONGOMA) PENNIPES (Osten Sacken).

Chung Kon, July 18, 1935.

TRENTEPOHLIA (TRENTEPOHLIA) PICTIPENNIS Bezzi.

Ta Hian, June 11, 1935; Ta Han, June 21, 1935.

TRENTEPOHLIA (TRENTEPOHLIA) TRENTEPOHLII (Wiedemann).

Ta Hian, June 11, 1935; Nodoa, June 20, 1935; Liamui, July 2, 1935; Ta Hau, July 4, 1935; Chung Kon, July 18, 1935; Dwa Bi, July 21, 1935.

GONOMYIA (LIPOPHLEPS) BICOLORATA Alexander.

Ta Han, June 23, 1935. Known hitherto only from Luzon.

GONOMYIA (LIPOPHLEPS) INCOMPLETA Brunetti.

Ta Hian, June 14, 1935; Ta Hau, July 3, 1935; Chung Kon, July 18, 1935; Dwa Bi, July 20, 1935.

TIPULINÆ

LONGURIO HAINANENSIS sp. nov. Plate 1, fig. 1.

General coloration of mesonotum and abdomen yellow and orange; head variegated with brownish black on lateral por-

tions of posterior vertex; wings narrow, tinged with gray; Rs short and arcuated, much shorter than R_{2+3} ; m-cu a short distance before fork of M_{3+4} .

Female.—Length, about 20 millimeters; wing, 15.

Frontal prolongation of head yellowish white; nasus conspicuous, black; palpi black. Antennæ dark brown throughout, very small, if bent backward scarcely extending beyond the posterior border of head; flagellar segments cylindrical, with long, conspicuous verticils. Head whitish on front and anterior vertex, the central portion of posterior vertex and occiput yellow, the lateral portions of latter, together with the posterior orbits, brownish black.

Pronotum and propleura black. Mesonotum almost uniformly yellow, restrictedly variegated by darker, including the lateral ends of suture, margins of parascutella, and posterior border of mediotergite. Pleura obscure yellow, the posterior border of dorsopleural membrane with a conspicuous velvety black area; posterior portion of pleurotergal tubercle a little darkened. Halteres dirty white, the knobs darkened. Legs with the coxæ yellowish testaceous; trochanters whitened; remainder of legs brownish black. Wings (Plate 1, fig. 1) narrow, subhyaline or with a faint grayish tinge; stigma and cell Sc a little darker; veins brown. Macrotrichia on outer portions of veins R_3 and R_{4+5} ; trichia on outer medial branches lacking or reduced to one or two scattered setæ. Venation: Rs short and arcuated, much shorter than R_{2+3} ; distal end of Sc_1 atrophied; m-cu a short distance before fork of M_{3+4} ; cell 2d A relatively wide.

Abdominal tergites orange-yellow, the incisures restrictedly paler; intermediate tergites with vague medial darkenings, on outer segments more evident and suffusing the caudal borders of the segments; sternites more yellowish, with a more or less distinct brown median stripe; pleural membrane infuscated. Ovipositor with small and inconspicuous, blunt valves.

Habitat.—China (Hainan Island).

Holotype, female, Dwa Bi, altitude about 1,500 feet, July 20, 1935 (*Gressitt*).

Longurio hainanensis is readily told from the four species hitherto described from China and Japan by the narrow, subhyaline wings, with Rs unusually short and arcuated. The most similar of the above-mentioned forms is *L. fulvus* Edwards (China, Formosa). I am not fully convinced that *Sphæxionotus* de Meijere can be maintained as a genus distinct from *Longurio* Loew.

NEPHROTOMA HAINANICA sp. nov. Plate 1, fig. 2.

General coloration yellow, patterned with black; frontal prolongation of head darkened on sides; head orange, with no occipital brand; mesonotal præscutum with three polished black stripes that are narrowly bordered by velvety black, the central portion of median stripe paler on anterior half; scutellum, postnotum, and pleura yellow; wings with a faint dusky tinge, the stigma and cells Sc and Cu₁ darker; Sc₂ ending a short distance beyond origin of Rs, the latter subequal in length to R₂₊₃; cell M₁ broadly sessile; abdominal tergites weakly infuscated medially, the disk of the seventh tergite intensely blackened.

Female.—Length, about 14 millimeters; wing, 11.

Frontal prolongation of head light yellow above, dark brown on sides; nasus black, conspicuous. Antennæ with the scape brown; pedicel dark brown; flagellum black. Head orange; vertical tubercle very weakly notched; no differentiated occipital brand.

Pronotum and pleura orange-yellow. Mesonotal præscutum yellow with three polished black stripes, all narrowly bordered by velvety black; anterior end of median stripe with its central portion yellow, this pale color continued caudad for nearly one-half the length of the stripe; lateral stripes straight; scutum yellow, each lobe with two confluent polished black areas that are very narrowly bordered by velvety black; lateral ends of transverse suture infumed; scutellum and mediotergite yellow, without darkening, the latter with delicate setulæ on posterior lateral portions. Pleura yellow, variegated by more reddish yellow areas on the propleura, anepisternum, ventral sternopleurite, and meron. Halteres dusky, the base of stem restrictedly pale. Legs with the coxæ and trochanters yellow, the fore coxæ more reddish yellow; femora brownish yellow, somewhat clearer yellow at base, a little more darkened outwardly; tibiæ and tarsi brownish black to black. Wings (Plate 1, fig. 2) with a faint dusky tinge; stigma cell Sc, and the narrow cell Cu₁ infuscated; wing tip very gradually and insensibly darker than the remaining ground color of the membrane; veins dark brown. Stigmal trichia few. Venation: Sc₁ entirely preserved, Sc₂ ending a short distance beyond the origin of Rs, the latter subequal in length to R₂₊₃ cell M₁ broadly sessile; m-cu at point of departure of vein M₄.

Abdominal tergites weakly infuscated medially, somewhat paler sublaterally at bases of segments; disk of seventh tergite intensely blackened, the borders yellow, the lateral margins more broadly

so; sternites more uniformly yellow. Ovipositor with genital shield obscure yellow; cerci nearly straight.

Habitat.—China (Hainan Island).

Holotype, female, Ta Han, altitude 2,500 feet, June 22, 1935 (*Gressitt*).

The thoracic pattern, especially the highly polished præscutal stripes that are narrowly margined with velvety black, is much as in *Nephrotoma siamensis* Edwards, which differs conspicuously in the occipital band, black central præscutal vitta, dull black scutellum and apical third of mediotergite, and numerous other features. The coloration of the median præscutal stripe is approached by the otherwise very different Formosan species, *N. parva* Edwards.

CYLINDROTOMINÆ

PHALACROCERA TARSALBA sp. nov. Plate 1, fig. 3.

Front and anterior vertex silvery white, posterior vertex black; prothorax light yellow; mesonotum almost uniformly black; pleura yellow; legs darkened, the tarsi chiefly snowy white; wings narrow, the prearcular region petiolate; m-cu at fork of M; cell 2d A reduced to a narrow strip; abdominal tergites black, the sternites more greenish brown; ovipositor and genital segment brownish yellow.

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

Rostrum yellow, palpi dark brown. Antennæ relatively short; scape and pedicel yellow, flagellum brownish black; flagellar segments passing into cylindrical, with verticils that much exceed the segments; terminal segment about one-half longer than the penultimate. Front and anterior vertex broad, silvery white; posterior vertex black, the occiput paling to dull yellow.

Prothorax entirely light yellow. Mesonotum almost uniformly black, greatly restricting the obscure yellow ground colors; præscutum with three confluent stripes, the yellow ground reduced to narrow humeral triangles; median regions of scutum and scutellum restrictedly pale; mediotergite narrowly margined with yellow, the disk black. Pleura and pleurotergite, together with the pleural membranes, uniformly pale yellow. Halteres dusky, the knobs infuscated, the base of stem restrictedly yellow. Legs with the coxæ and trochanters yellow; femora greenish basally, the tips gradually passing into brown; tibiæ brown, the tips darker; tarsi snowy white, the proximal ends of basitarsi blackened. (All legs are detached and the degree of blackening differs in the various legs; in some, only

the extreme tip, the distal fifth or sixth, is whitened, while in one pair, which is presumably the posterior one, the white includes the distal three-fifths.) Wings (Plate 1, fig. 3) with a weak brown tinge; stigma small, long-oval, dark brown; veins dark brown, the prearcular veins more yellowish brown. Wings with a long basal petiole. Venation: Sc_1 atrophied; Sc_2 ending just beyond fork of R_s , the free tip evident as a faint trace at near midlength of the stigma, $m-cu$ at fork of M ; cell 2d A reduced to a narrow strip.

Abdominal tergites black; sternites more greenish brown; ovipositor and genital segment brownish yellow.

Habitat.—China (Hainan Island).

Holotype, female, Ta Han, altitude 2,500 feet, June 25, 1935 (*Gressitt*). Paratopotypes, 1 female, 1 (sex?), June 21 and 22, 1935.

Phalacroceras tarsalba is readily told from all other allies in eastern Asia by the unusually narrow, petiolate wings, very narrow cell 2d A, and the snowy white tarsi. It has no close relative so far made known, the most similar form being *P. minuticornis* Alexander (western China). The discovery of a Palearctic element such as the genus *Phalacroceras* at relatively low altitudes in Hainan has provided a surprise in geographic distribution.

LIMONIINÆ

LIMONIINI

Genus LIMONIA Meigen

Limonia MEIGEN, Illiger's Magazin 2 (1803) 262.

Subgenus GRESSITTOMYIA novum

Characters as in typical *Limonia*, differing most evidently in details of wing venation.

Antennæ 15-segmented; flagellar segments oval, the longest verticils unilaterally distributed on outer face, about one-third longer than the segments; terminal segment slender, about two-thirds the length of the penultimate. Anterior vertex narrower than the diameter of the scape. Claws with a single short spine near base. Wings (Plate 1, fig. 4) with Sc moderately long, Sc_1 ending beyond two-thirds the length of R_s , Sc_2 close to its tip; $Sc_2 + R_1$ gradually bent strongly caudad, at its outer end reducing vein R_2 to a short hyaline element, the free tip of Sc_2 correspondingly lengthened but entirely pale; a supernumerary crossvein in cell R_3 at near midlength; vein R_3 beyond the cross-

vein strongly sinuous, slightly constricting cell R_3 at near mid-length; a long fusion of veins R_{4+5} and M_{1+2} , nearly equal in length to Rs , completely obliterating $r-m$; cell 1st M_2 narrowed to a point at outer end, m being very short to nearly obliterated; outer medial veins deflected strongly caudad; $m-cu$ at or close to fork of M , cell M_4 at margin unusually wide; anal veins nearly straight, parallel at origin. Male hypopygium (Plate 2, fig. 25) with the dorsal dististyle, *dd*, well developed, slender. Ventral dististyle, *vd*, small, with a long, slender, rostral prolongation that bears two, long, slender spines on a small tubercle at base; face of style bearing a larger and more conspicuous tubercle that has three, very long, slender setæ, these exceeding in length the rostral prolongation of the style.

Type of subgenus.—*Limonia* (*Gressittomyia*) *xenoptera* sp. nov. (Oriental Region: Eastern China, Hainan Island.)

The crane fly discussed under the above name is one of the strangest in appearance that has ever come to my attention. At first sight the venation seems quite irreconcilable with that of members of the genus *Limonia*, the veins beyond the cord being unusually complicated by fusions of elements and the presence of a supernumerary crossvein in cell R_3 . However, there is no doubt that the fly is a member of the great genus *Limonia* and that it is necessary to erect a new subgeneric group for its reception. I take great pleasure in dedicating this subgenus to Mr. J. Linsley Gressitt, who has added materially to our knowledge of the Tipulidæ of eastern Asia.

The most unusual character of the group and the one that separates it from all other subgenera of *Limonia* is the profound fusion of veins R_{4+5} and M_{1+2} , a character suggested by certain other species of the genus, as *Limonia* (*Laosa*) *gloriosa* (Edwards) where the contact of veins R_{4+5} and M_{1+2} is merely punctiform. Elsewhere in the Tipulidæ such a long fusion of veins R_{4+5} and M_{1+2} is rare, being most evident in the tipuline genus *Ptilogyna* Westwood and in the limoniine genus *Trentepohlia* Bigot. In other groups of the Limoniinæ, a fusion of this nature occurs sporadically in genera such as *Helius* St. Fargeau and *Teucholabis* Osten Sacken, but throughout the entire family Tipulidæ its occurrence must be held to be decidedly uncommon. The presence of a supernumerary crossvein in the outer radial field is a character likewise possessed by three other subgenera of *Limonia*; namely, *Laosa* Edwards, *Dapanoptera* Westwood, and *Neolimnobia* Alexander. The group most nearly allied to

Gressittomyia would seem to be *Laosa*. For additional details and comparisons the discussion of the subgenera of *Limonia* as given by the writer in an earlier paper² may be consulted.

LIMONIA (GRESSITTOMYIA) XENOPTERA sp. nov. Plate 1, fig. 4; Plate 2, fig. 25.

General coloration orange; antennæ with scape and pedicel black, the flagellum obscure yellow, its outer segments more darkened; head silvery gray, with a capillary dark line on posterior vertex; halteres yellow, the knobs darkened; legs yellow, the femoral tips rather broadly blackened; wings hyaline, the prearcular and costal fields more yellowish, the outer radial, cubital, and anal fields more buffy; veins beyond cord conspicuously seamed with brownish black; R_{4+5} extensively fused with M_{1+2} ; m very short to virtually lacking; male hypopygium with the rostral spines slender, from a common tubercle at base of prolongation.

Male.—Length, about 7 millimeters; wing, 8.2.

Rostrum and palpi black. Antennæ with scape and pedicel black; flagellum obscure yellow, the outer segments passing into brownish yellow; antennal structure as described under subgenus. Head silvery gray, with narrow black median line on posterior vertex.

Entire thorax orange, immaculate. Halteres yellow, the knobs dark brown. Legs yellow, the femoral tips rather broadly black, the amount subequal on all legs; outer tarsal segments infumed. Wings (Plate 1, fig. 4) hyaline, the prearcular region and cells C, Sc, and R light yellow; outer portion of cell R, cell 1st M_2 , and base of R_5 , with outer ends of cells Cu, 1st A, and 2d A, together with basal portion of Cu more buffy; veins beyond cord narrowly but conspicuously seamed with brownish black; veins black in the outer fields, paler in the cells basad of cord. Venation as described under the subgenus; second section of vein R_{4+5} subequal in length to the second section of M_{1+2} ; Vein Cu_2 lying unusually far distant from vein Cu_1 .

Abdomen, including hypopygium, deep orange, the pleural membrane weakly infumed; ventral dististyle of hypopygium infuscated. Male hypopygium (Plate 2, fig. 25) with the caudal margin of tergite, 9t, transverse or very gently emarginate, the setæ at and near border. Basistyle, b, with ventromesal lobe large. Dorsal dististyle, dd, a slender blackened hook, the acute tip slightly decurved. Ventral dististyle, vd, with the body small, shorter than the dorsal dististyle, its rostral prolongation long

² Philip. Journ. Sci. 40 (1929) 239-248.

and slender. Mesal-apical lobe of gonapophyses very slender. *Ædeagus* broad at base, narrowed to the bilobed apex.

Habitat.—China (Hainan Island).

Holotype, male, Ta Han, altitude 2,500 feet, June 22, 1935 (*Gressitt*).

The species requires no comparison with any other known member of the genus.

LIMONIA (LIMONIA) CALCARIFERA sp. nov. Plate 1, fig. 5.

General coloration obscure yellow, the præscutum darkened medially; flagellar segments gradually lengthened to the outermost; eyes broadly contiguous, ommatidia relatively coarse; pleura obscure yellow, variegated by darkened areas; femora yellow, the tips black; wings cream-colored, the base and costal portion clearer yellow; a restricted dark pattern, including the small stigma and a cloud at origin of Rs; Sc relatively long; Rs angulated and short-spurred at origin; m-cu at fork of M; anal veins convergent basally; abdominal tergites light brown; apices of cerci simple.

Female.—Length, about 7 millimeters; wing, 6.8.

Rostrum brown, palpi a little darker. Antennæ dark brown throughout; basal flagellar segments short-oval, the outer ones passing through oval to subcylindrical, becoming progressively longer outwardly; terminal segment pointed on distal end, about a fifth longer than the penultimate; extreme apex of flagellar segments glabrous and forming a pedicel, but not suddenly narrowed into a neck; verticils of outer segments subequal to or a trifle longer than the segments. Eyes broadly contiguous on anterior vertex; ommatidia relatively large and coarse; posterior vertex brownish gray.

Pronotum brown. Mesonotal præscutum obscure yellow, more infuscated medially; lateral stripes little or scarcely evident; setæ of interspaces erect and unusually long; præscutum with a weak, median impressed line, best developed on posterior half; scutal lobes dark brown, median area broadly obscure yellow; scutellum obscure yellow on basal portion, the posterior margin broadly infuscated, weakly pruinose; mediotergite dark brown, paler on lateral portions. Pleura obscure yellow, the propleura, anepisternum, and dorsal sternopleurite slightly infuscated. Halteres pale basally, the outer end of stem and the knobs infumed. Legs with the coxæ and trochanters testaceous-yellow; femora yellow, the tips rather broadly and conspicuously blackened; tibiæ yellowish brown, the tips narrowly and gradually darkened; tarsi passing into brownish black. Wings (Plate 1,

fig. 5) with the ground color somewhat creamy, the prearcular region and cells C and Sc clearer yellow; stigma subcircular, brown; a very restricted, scarcely evident, dark pattern, appearing as small clouds at origin of Rs and fork of Sc, and as a very narrow and vague apical darkening; cord and outer end of cell 1st M_2 very slightly darkened, most evident as a deepening in the intensity of the veins; veins yellow, darker beyond cord and in the clouded areas. Venation: Sc relatively long, Sc_1 ending about opposite four-fifths the length of Rs, Sc_2 near its tip; Rs weakly angulated and spurred near origin; free tip of Sc_2 and R_2 in transverse alignment; cell 1st M_2 widened outwardly, m about one-half the basal section of M_3 ; m-cu at fork of M; anal veins convergent basally, 2d A very gently sinuous.

Abdominal tergites light brown, scarcely variegated with darker; sternites more yellowish. Ovipositor with valves reddish horn-color, the bases of the hypovalvæ blackened; cerci up-curved and acute at tips.

Habitat.—China (Hainan Island).

Holotype, female, Dwa Bi, altitude about 1,500 feet, July 22, 1935 (*Gressitt*).

The general appearance of the present fly indicates that it is a member of the *pendleburyi* group. It differs from the typical form of this group, *Limonia* (*Limonia*) *pendleburyi* Edwards, of the Federated Malay States, and allied species, in the coloration of the body, legs, and wings and in the details of venation. The angulated and spurred Rs is a peculiar feature in the present group of flies.

LIMONIA (LIBNOTES) QUINQUE-COSTATA sp. nov. Plate 1, fig. 6.

General coloration brownish yellow, the præscutum with four darker brown stripes; antennæ black throughout; thoracic pleura brownish yellow, variegated by blackened areas; knobs of halteres dark brown; femora brownish black, the tips narrowly and abruptly yellow; tibiæ and tarsi black; wings cream-yellow, with a restricted dark pattern, including five small areas along costal border; free tip of Sc_2 and R_2 in approximate transverse alignment; anal veins strongly convergent; cerci bidentate at tips.

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

Rostrum obscure brownish yellow; palpi black. Antennæ black throughout; basal flagellar segments globular, passing through short-oval to elongate; terminal segment about one-half longer than the penultimate; longest verticils exceeding

the segments. Front and anterior vertex buffy, the posterior portion of head more fulvous; anterior vertex reduced to a narrow strip that is only a little wider than the diameter of a single ommatidium.

Pronotum dark brown above, brownish yellow on sides. Mesonotal præscutum brownish yellow, the humeral region clear yellow; four darker brown præscutal stripes, the intermediate pair entirely confluent on anterior third of sclerite; a narrow blackish area borders internally the yellowish humeral portion of sclerite; scutal lobes dark brown, the median region more grayish; scutellum pale; mediotergite light gray, a trifle paler medially, more darkened on sides. Pleura brownish yellow, variegated by blackened areas on ventral propleura, dorsopleural membrane, ventral anepisternum, and dorsal sternopleurite. Halteres relatively long, the stem yellow, the knob dark brown. Legs slender; fore coxæ dark brown, the middle and hind coxæ yellow; femora obscure yellow basally, gradually deepening to brownish black, the tips narrowly but conspicuously yellow, the amount subequal on all legs; tibiæ and tarsi black. Wings (Plate 1, fig. 6) with the ground color cream-yellow, with a restricted brown pattern that is confined to the vicinity of the veins, including a series of five costal areas, distributed as follows: Arculus; cell Sc at near one-third the distance to Rs; origin of Rs; fork of Sc; and the small circular stigmal area on vein R_{1+2} , only slightly invading R_2 ; additional dark seams to many of the veins, including the cord, outer end of cell 1st M_2 , more than the basal half of vein R_{2+3} , and outer end of vein 2d A; veins yellow, darkened in the clouded areas. Venation: Sc_1 ending beyond level of m-cu, Sc_2 at its tip; Rs very gently arcuated about four times the basal section of R_{4+5} ; free tip of Sc_2 lying shortly proximad of R_2 ; cell 1st M_2 of moderate length; m and basal section of M_3 subequal; m-cu at near one-third the length of cell 1st M_2 ; outer radial and medial veins nearly straight or only gently curved; anal veins strongly convergent.

Abdominal tergites chiefly dark brown, the caudal portions of the segments a little more reddish brown; sternites brighter. Cerci stout, bidentate at tips.

Habitat.—China (Hainan Island).

Holotype, female, Ta Haan, altitude 2,500 feet, June 21, 1935 (Gressitt).

By Edward's key to the species of *Libnotes*,³ the present fly runs to couplet 33, differing markedly from all species in the wing pattern and leg coloration. It runs more or less directly to *Limonia (Libnotes) longinervis* (Brunetti), an entirely different species.

ANTOCHA (ANTOCHA) FLAVIDULA sp. nov. Plate 1, fig. 7; Plate 2, fig. 26.

Size small (wing, male, 3.5 millimeters); head light gray; antennæ short, flagellum black; thorax and abdomen light yellow; halteres pale yellow; femora yellow, the tips narrowly and gradually infuscated; wings cream-colored, with a restricted, pale brown clouded pattern; m-cu more than one-fourth its length before the fork of M; male hypopygium with the outer dististyle suddenly narrowed at apex into an acute black spine.

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

Rostrum obscure yellow; palpi a trifle darker. Antennæ short; scape and pedicel yellowish brown, flagellum black; flagellar segments small, subglobular to short-oval, the outer ones becoming more elongate. Head light gray.

Entire thorax light yellow. Halteres pale yellow. Legs with the coxæ and trochanters yellow; femora yellow, the tips narrowly and gradually infuscated; tibiæ pale brown, the tips slightly darker; tarsi infuscated. Wings (Plate 1, fig. 7) cream-colored, with a vague but evident pale brown pattern, distributed as clouds at origin of Rs, stigma, along cord and outer end of cell 1st M₂, and at the outer ends of veins R₃ and 1st A; veins yellow, pale brown in the clouded areas. Veins behind R₁ entirely glabrous. Venation: Sc relatively long, Sc₁ ending some distance beyond the fork of Rs; R₂ in virtual transverse alignment with r-m; cell 1st M₂ about as long as vein M₃ beyond it; basal section of M₃ longer than m; m-cu more than one-fourth its length before the fork of M.

Abdomen, including hypopygium, yellow. Male hypopygium (Plate 2, fig. 26) with the tergite narrowly transverse, the caudal margin approximately straight across or with the median portion a little projecting. Outer dististyle, *od*, relatively long and slender, at apex suddenly narrowed into an acute darkened spine. Inner dististyle broader, the apex obtuse. Phallosome, *p*, subtended on either side by a flattened, very pale plate, the apex of which is obtusely rounded. Outer gonapophysis, *g*, a simple slender rod, gradually narrowed to an acute point.

Habitat.—China (Hainan Island).

³ Journ. Fed. Malay St. Mus. 14 (1928) 74–80.

Holotype, male, Dwa Bi, altitude about 1,500 feet, July 21, 1935 (*Gressitt*).

The present species is most closely allied to *Antocha* (*Antocha*) *flavella* Edwards and *A. (A.) nebulosa* Edwards, both from the Malay Peninsula, differing in the gray coloration of the head, color of the antennæ, uniformly yellow thorax and abdomen, darkened femoral tips, and details of pattern of the wings. In the last-mentioned regard, the fly is more like *nebulosa*, which in all other respects is very distinct.

ANTOCHA (ANTOCHA) KHASIENSIS sp. nov. Plate 1, fig. 8; Plate 2, fig. 27.

General coloration pale yellow, the transverse suture of mesonotum narrowly darkened; antennæ yellow; legs yellow, the tips of femora rather narrowly but conspicuously blackened; wings milky white, patterned with brownish black, including the prearcular field and subcostal cell as far distad as the level of origin of Rs; cord and outer end of cell 1st M_2 narrowly seamed with dark; m-cu more than its own length before the fork of M; male hypopygium with the outer dististyle obtuse at apex; inner gonapophysis acutely pointed, with a pale lateral flange.

Male.—Length, about 3.5 to 3.7 millimeters; wing, 4 to 4.4.

Female.—Length, about 3.5 millimeters; wing, 4.

Rostrum yellow; palpi scarcely darkened. Antennæ short, yellow, the outer flagellar segments a trifle darker; flagellar segments oval. Head yellow.

Mesonotum pale yellow, the suture narrowly dark brown, the pattern a little more expanded at lateral ends. Pleura pale yellow. Halteres pale yellow throughout. Legs yellow, the tips of the femora narrowly but conspicuously blackened, the amount subequal on all legs; in the allotype the femora are somewhat less extensively darkened; tibiæ more narrowly darkened at tips; tarsi yellow, the outer segments darker. Wings (Plate 1, fig. 8) milky white, patterned with brownish black, in the costal field the latter color alternating with brighter yellow areas, most evident on the costal vein before and beyond the dark stigma; prearcular field and cell Sc as far distad as the origin of Rs blackened; cord and outer end of cell 1st M_2 seamed with blackish; veins pale, darker in the clouded areas, including the outer medial veins. Venation: R_{2+3} only a little longer than R_2 , the latter lying far before the level of r-m; m-cu more than its own length before the fork of M.

Abdomen, including hypopygium, yellow. Male hypopygium (Plate 2, fig. 27) with the outer dististyle, *od*, short, and unusual-

ly obtuse at apex. Inner gonapophysis, *g*, terminating in an acute spinous point, the outer margin back from the point expanded into a pale flange that is wider towards the base.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 feet, August, 1935 (Sircar). Allotopotype, female. Paratopotypes, 2 males.

Antocha (*Antocha*) *khasiensis* is most nearly related to *A.* (*A.*) *nigribasis* Alexander (western China), differing most conspicuously in the small size and structure of the male hypopygium. It is readily told from all other previously described species of the Himalayan and Indo-Malayan regions by the extreme basal position of *m-cu* and the coloration of the body, legs, and wings.

I am greatly indebted to Mr. S. Sircar for the following data on the conditions under which the present series of Tipulidæ were collected. "The specimens were collected by me personally at light (400 C. P. Petromax). It was showering very mildly and from my experience I can say that this is the best time for collecting Tipulidæ at light. Hundreds of these flies came to the light, but I could not save all of them as my net got wet and I had to catch them by hand as they rested on a cloth hung up by the side of the light."—S. SIRCAR.

HEXATOMINI

PSEUDOLIMNOPHILA CONCUSSA sp. nov. Plate 1, fig. 9; Plate 2, fig. 28.

General coloration brownish gray; antennæ black; wings relatively narrow, almost uniformly tinged with brownish yellow; costal fringe short; *Rs* long, subequal to vein *R*₃; *R*₂ at or close to fork of *R*₃₊₄; cell *M*₁ present; cell 1st *M*₂ long and narrow, subequal to vein *M*₄ beyond it; *m-cu* at or close to fork of *M*.

Male.—Length, about 7 millimeters; wing, 6.8.

Female.—Length, about 8 millimeters; wing, 7.5.

Rostrum dark; palpi black. Antennæ brownish black to black throughout, or (male) with the basal half of first flagellar segment paler; flagellar segments subcylindrical to cylindrical, with long conspicuous verticils. Head brownish gray; anterior vertex and orbits clearer gray.

Pronotum dark brownish gray. Mesonotum brownish gray, the præscutum with a slightly darker median stripe, somewhat more intense on cephalic portion; pseudosutural foveæ black. Pleura gray, variegated by more blackish gray on ventral anepisternum, sternopleurite, and meron. Halteres pale, the knobs infuscated. Legs with the fore coxæ blackened, heavily pruinose; middle and hind coxæ much paler; trochanters testaceous-

yellow; remainder of legs brownish yellow or, in cases, the femora more yellowish brown. Wings (Plate 1, fig. 9) relatively narrow, as compared to *inconcussa*, almost uniformly tinged with brownish yellow; stigma very faintly darker; veins darker brown. Costal fringe short in both sexes; Venation: Sc_1 ending opposite or just before fork of Rs, Sc_2 at its tip; Rs long, nearly straight to very gently arcuated at origin; R_{2+3+4} elongate, only a little shorter than vein R_3 ; R_2 at or very close to fork of R_{3+4} ; R_{1+2} from one and one-half to twice the length of R_2 ; cell M_1 present, about as long as its petiole; cell 1st M_2 relatively long and narrow, its inner end arcuated, the lower face of the cell subequal to or even longer than vein M_4 ; m-cu at or just beyond fork of M; anterior arculus present.

Abdomen dark brown, sparsely pruinose, the hypopygium a trifle brighter. Male hypopygium (Plate 2, fig. 28) with the outer dististyle, *od*, a little longer than the inner style, *id*, straight, its apex decurved into a slender spine; inner margin before apex with a few denticles. Interbasal rods slender, each with a low obtuse flange at near midlength.

Habitat.—China (Hainan Island).

Holotype, male, Ta Hian, altitude 2,000 feet, June 14, 1935 (*Gressitt*). Allotype, female, Dwa Bi, altitude about 1,500 feet, July 21, 1935 (*Gressitt*).

Pseudolimnophila concussa is very closely allied to *P. inconcussa* (Alexander), of Japan and China, and may prove to be only a more southern race of the latter. The unusually narrow wings, with narrow cell 1st M_2 serve to separate the fly from the usually larger and more vigorous *inconcussa*.

PSEUDOLIMNOPHILA SETICOSTATA sp. nov. Plate 1, fig. 10.

General coloration of mesonotum uniformly dark brown, the pleura a little paler; antennæ black throughout; flagellar verticils very long; legs brownish black; wings a faint brown tinge; costal fringe (male) unusually long and dense; R_2 at or before fork of R_{3+4} ; cell M_1 lacking; m-cu a short distance beyond fork of M; abdominal tergites dark brown, the sternites more brownish yellow.

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

Rostrum obscure yellow to yellowish brown; palpi black. Antennæ black throughout; flagellar segments subcylindrical, with long verticils that greatly exceed the segments. Head brownish black above, the anterior vertex and orbits a very little paler; anterior vertex relatively wide, exceeding twice the diameter of scape.

Pronotum and mesonotum almost uniformly dark brown, the pleura a little paler. Halteres dusky, the base of stem very narrowly paler. Legs with the coxæ brown; trochanters yellowish brown; remainder of legs brownish black. Wings (Plate 1, fig. 10) with a faint brownish tinge; stigma oval, slightly darker brown; veins medium brown, much darker than the ground. Costal fringe (male) unusually long and dense, the setæ longer than the width of cell Sc_1 . Venation: Sc_1 ending shortly before level of fork of R_s , Sc_2 near its tip; R_2 variable in position, in the paratype being some distance before the fork of R_{3+4} , veins R_{1+2} , R_2 , and R_{3+4} in this case being subequal in length; in the holotype R_2 is at or very close to the fork of R_{3+4} , eliminating or greatly reducing the latter element; veins R_3 and R_4 diverging rather conspicuously, cell R_3 at margin being considerably more extensive than cell R_2 ; cell M_1 lacking; m-cu a short distance beyond fork of M ; anterior arcus present.

Abdominal tergites dark brown, the sternites and hypopygium more brownish yellow.

Habitat.—China (Hainan Island).

Holotype, male, Ta Han, altitude 2,500 feet, June 21, 1935 (*Gressitt*). Paratype, male, Dwa Bi, altitude about 1,500 feet, July 22, 1935 (*Gressitt*).

The long dense costal fringe of the male (though possibly not of the still unknown female) is much like that of the otherwise very distinct *P. costofimbriata* Alexander, of southern India, the latter species having cell M_1 present and very deep. *Pseudolimnophila descripta* Alexander, of the mountains of Formosa, has cell M_1 lacking, but differs from the present fly in other venational details. The female sex of the latter species has the costal fringe short, but the male is still unknown.

Genus HEXATOMA Latreille

Hexatoma LATREILLE, Gen. Crust. et Ins. 4 (1809) 260.

Subgenus EUHEXATOMA novum

Characters as in the subgenus *Eriocera* Macquart, having four branches of radius and four of media reaching the wing margin; cell 1st M_2 closed. Supernumerary crossveins in each of cells R_3 , R_4 , and R_5 in approximate alignment (Plate 1, fig. 11).

Type of subgenus.—*Hexatoma* (*Euhexatoma*) *triphragma* sp. nov. (Oriental Region: Eastern China, Hainan Island).

The new subgenus is based on the presence of three strong supernumerary crossveins in the outer radial field of the wing, a character paralleled by other subgeneric groups in the allied

hexatomine genera *Adelphomyia* Bergroth and *Limnophila* Macquart. The present fly is of very strange appearance, the outer radial field giving one a definite impression of resemblance to the wing of a scorpion fly (Mecoptera).

HEXATOMA (EUHEXATOMA) TRIPHGRAMA sp. nov. Plate 1, fig. 11.

General coloration of thorax brownish yellow, the præscutum with three confluent darker brown stripes; antennal flagellum yellow; femora yellow, the tips narrowly blackened; wings dark brown, the veins narrowly but conspicuously bordered by yellow; wing tip more broadly yellowish; small paired hyaline droplets near outer ends of cells R_4 and R_5 , respectively; supernumerary crossveins in cells R_3 , R_4 , and R_5 ; cell M_1 present; m-cu at near two-thirds the length of cell 1st M_2 ; abdominal tergites reddish brown, the hypopygium brownish yellow.

Male.—Length, about 20 millimeters; wing, 16.

Rostrum dark brown; palpi short, brown. Antennæ 7-segmented; scape and pedicel yellowish brown; flagellum yellow, the outer segments a little darkened; flagellar segments cylindrical, gradually decreasing in length outwardly. Head brown; vertical tubercle entire, its margin rounded.

Pronotum brown. Mesonotal præscutum brownish yellow, with three darker brown stripes that are confluent behind; posterior sclerites of notum chiefly brownish black. Pleura obscure yellow, variegated by dark brown on the ventral anepisternum, ventral sternopleurite, meron, and pleurotergite. Halteres brownish yellow. Legs with the coxæ light brown, trochanters more reddish brown; femora yellow, the tips narrowly blackened, the amount subequal on all legs and including about the distal sixth or seventh of the segment; tibiæ brown, the tips narrowly blackened; tarsi black. Wings (Plate 1, fig. 11) with the ground color dark brown, the veins narrowly but conspicuously bordered by yellow; wing tip more extensively of the same color; two small paired hyaline droplets near outer ends of cells R_4 and R_5 , beyond the supernumerary crossveins of these cells; cell 1st A more grayish, cell 2d A yellow, margined outwardly with gray; vague linear pale streaks in central portions of cells R_1 , M, and M_4 ; veins yellow to brownish yellow, contrasting with the dark ground. Scattered macrotrichia on all outer radial branches. Venation: Sc_1 ending about opposite R_2 ; R_{2+3+4} a little shorter than the basal section of R_5 ; R_{1+2} longer than R_{2+3+4} ; the supernumerary crossveins in the radial field slightly variable in position, those in cells R_3 and R_4 more oblique

than the one in cell R_5 ; in the left wing of type, the vein in cell R_3 lies more than its own length beyond the one in cell R_5 , whereas in the right wing the elements are nearly interstitial, as illustrated; cell M_1 present; m-cu much longer than the distal section of Cu_1 , placed at near two-thirds the length of cell 1st M_2 .

Abdominal tergites deep reddish brown, without differentiated basal coloring on the individual segments; basal and subterminal segments somewhat darker; sternites clearer reddish brown; hypopygium brownish yellow.

Habitat.—China (Hainan Island).

Holotype, male, Liamui, altitude about 1,200 feet, July 31, 1935 (Gressitt).

This rather remarkable crane fly requires no comparison with any previously described member of the genus, the subgeneric character of three supernumerary crossveins in the outer radial field being quite unique within the group.

HEXATOMA (ERIOCERA) TUBERCULATA sp. nov. Plate 1, fig. 12.

Belongs to the *perennis* group; general coloration of thorax dull gray, the præscutum with four scarcely differentiated plumbeous-gray stripes that are narrowly bordered by blackish; setæ of thoracic dorsum short and inconspicuous; a median series of from three to five small tubercles at cephalic portion of præscutum; halteres and legs black; wings dark brown, with an oval yellow discal area before cord; costal vein in both sexes with abundant short setæ; cell M_1 present; abdominal tergites purplish blue, with about the outer third of the segments dull black; hypopygium and shield of ovipositor orange.

Male.—Length, about 19 to 24 millimeters, wing, 15 to 19.

Female.—Length, about 24 to 25 millimeters; wing, 16 to 17.

Rostrum dark gray; palpi black. Antennæ short in both sexes, in male 7-segmented, in female 11-segmented; scape and pedicel black, sparsely pruinose; flagellum obscure yellow to yellowish brown. Head dull black, a little more grayish on front and on posterior orbits; vertical tubercle entire, unusually slender, especially in male. Vestiture of head of moderate length.

Pronotum dull dark gray, the lateral angles of the scutum produced into tuberculate lobes; scutellum with a deep median incision on anterior border. Mesonotal præscutum dull gray, with four scarcely differentiated plumbeous-gray stripes that are narrowly bordered by blackish; anteromedian portion of præscutum elevated into from three to five small tubercles arranged in a longitudinal row; posterior sclerites of notum dull plumbeous-gray. Vestiture of thoracic dorsum unusually short and sparse.

Pleura entirely blackened, very sparsely pruinose. Halteres short, black throughout. Legs entirely black. Wings (Plate 1, fig. 12) dark brown, the anal cells a little paler; an oval yellow discal area before the cord, occupying the outer end of cell R and adjoining parts of cells R_1 and M, with a slight invasion of the extreme base of cell 1st M_2 ; veins dark reddish brown, brighter in the yellow area; some of the veins adjoining the discal brightening very narrowly and insensibly bordered by yellow. Costa with abundant small setæ in both sexes; outer branches of R with trichia, more sparse and scattered on R_5 ; a few scattered trichia on vein M_1 and, in cases, on M_2 . Venation: Sc_1 ending shortly beyond R_2 ; Rs angulated to spurred very close to origin; R_{1+2} much longer than R_{2+3+4} , the latter subequal to basal section of R_5 ; cell M_1 present; m-cu at near two-thirds to three-fourths the length of cell 1st M_2 .

Abdominal tergites two to seven, inclusive, brilliant purplish blue, the caudal margins of the segments dull black, involving about the outer third of the sclerite; sternites more uniformly blackened, the basal rings less brilliantly blue; male hypopygium and shield of ovipositor orange.

Habitat.—China (Hainan Island).

Holotype, male, Fan Ta, altitude about 1,250 feet, June 3, 1935 (*Gressitt*). Allotype, female, Ta Hian, altitude 2,000 feet, June 11, 1935 (*Gressitt*). Paratypes, 2 males, with the allotype, June 12 and 13, 1935; 1 male, 1 female, Liamui, altitude about 1,200 feet, August 1 and 2, 1935 (*Gressitt*).

By Edwards's key to the Old World species of *Eriocera*,⁴ the present fly runs to couplet 87, disagreeing with species beyond this point by the lack of yellow or orange areas on the intermediate abdominal segments, as well as in several other features. The fly is quite distinct from all other species known to me.

HEXATOMA (ERIOCERA) HIRTITHORAX sp. nov. Plate 1, fig. 13.

General coloration deep velvety black; head and thorax with long, coarse, erect setæ; halteres and legs black; wings strongly blackened, with a narrow white discal area before the cord; numerous macrotrichia on veins beyond cord; cell M_1 lacking; m-cu beyond outer end of cell 1st M_2 on vein M_4 ; abdomen velvety black, segments two, four, and five with leaden-colored basal bands; genital shield black; valves of ovipositor orange.

Female.—Length, about 16 millimeters; wing, 12.5.

⁴ Ann. & Mag. Nat. Hist. IX 8 (1921) 70-78.

Rostrum black, sparsely pruinose; palpi black. Antennæ (female) 11-segmented; scape and pedicel black; flagellum brownish black, the incisures of the more proximal segments narrowly paler; flagellar segments with long coarse verticils; segments gradually decreasing in length outwardly, the terminal a little longer than the penultimate. Head dark gray, with very long, coarse, black setæ.

Thorax uniformly velvety black, with long coarse setæ, especially conspicuous on the dorsum. Halteres and legs black throughout. Wings (Plate 1, fig. 13) strongly blackened, the anal cells much paler, grayish; a narrow white discal area before cord, including cells R_1 to Cu, inclusive, the last area narrowly separated from the remainder of the band by a narrow dark seam adjoining vein Cu in cell M; the gray anal cells variegated by more infuscated area at near midlength and by more brightened areas near outer end of cell 1st A and basal portion of cell 2d A; veins dark, paler in the discal brightening. Costal fringe short but abundant, longer and more conspicuous basad of h; macrotrichia of veins beyond cord abundant, including all veins from R_{1+2} to Cu_1 , inclusive, more sparse and restricted in the medial and cubital fields. Venation: Sc_1 ending nearly opposite R_2 ; R_{1+2} much longer than either R_{2+3+4} or R_{2+3} ; medial veins very faint and difficult to trace; cell M_1 lacking; m-cu erect, placed beyond the outer end of cell 1st M_2 on vein M_4 .

Abdomen velvety black, segments two, four, and five with leaden-colored or plumbeous basal bands, segments three, six, and seven uniformly blackened; sternites black; genital shield black; valves of ovipositor orange.

Habitat.—China (Hainan Island).

Holotype, female, Liamui, altitude about 1,200 feet, July 31, 1935 (*Gressitt*).

Hexatoma (*Eriocera*) *hirtithorax* is one of rather numerous species discovered in recent years that runs to *H. (E.) hilpa* (Walker) by means of existing keys to the subgenus. It is distinguished from allies in this particular group of forms by the coloration of the wings and abdomen, the venation, as the deep fork of cell R_3 and direction and position of m-cu, and by the unusually long erect pubescence of the head and thorax. In the latter feature the species agrees well with *H. (E.) villosa* Edwards (Perak), which has an apical pale crescent on the wings, additional to the pale discal area.

ELEPHANTOMYIA (ELEPHANTOMYODES) ANGUSTICELLULA sp. nov. Plate 1, fig. 14.

General coloration of mesonotum brownish yellow, the pleura a trifle more infuscated; rostrum approximately one-half as long as remainder of body; basitarsus with proximal two-thirds black, the distal third snowy white; wings subhyaline; cell Sc, stigma and outer end of cell R_2 uniformly and continuously infuscated; basal section of R_5 almost in longitudinal alignment with Rs; cell 2d A very short and narrow; abdominal tergites inconspicuously bicolorous, obscure yellow, the caudal portions of the segments blackened, the outer three segments uniformly blackened.

Male.—Length, excluding rostrum, about 10 millimeters; wing, 6.5; rostrum alone, 5.

Rostrum black throughout, approximately one-half as long as remainder of body. Antennæ black; flagellar verticils long and conspicuous. Head brown, the orbits narrowly light gray; anterior vertex relatively wide, a little greater than the diameter of scape.

Mesonotum uniformly dull brownish yellow, the pleura a trifle more infuscated. Halteres obscure, the knobs a trifle more dusky. Legs with the coxæ weakly infuscated; trochanters brownish yellow; femora brownish black, a little brightened basally, deepening to black at tips; tibiæ black; basitarsi black, the distal third snowy white; remainder of tarsi snowy white, the terminal segment infumed. Wings (Plate 1, fig. 14) subhyaline, cell Sc, stigma and adjoining narrowed outer portion of cell R_2 uniformly and continuously infuscated; veins black. Venation: Rs strongly arcuated; anterior branch of Rs at origin arcuated in almost the same degree as Rs, its distal portion gently sinuous and running close to R_1 ; basal section of vein R_5 almost in longitudinal alignment with the end of Rs, a little shorter than r-m; cell 1st M_2 longer than vein M_4 beyond it; m-cu about one-half its length beyond the fork of M; cell Cu gradually widened to margin; vein 2d A short, the cell unusually short and narrow.

Abdominal tergites obscure yellow, blackened medially and caudally, the outer three segments uniformly blackened; sternites more uniformly obscure yellow, the caudal portions of the segments more infuscated.

Habitat.—China (Hainan Island).

Holotype, male, Ta Han, altitude 2,000 feet, June 7, 1935 (Gressitt).

Elephantomyia (*Elephantomyodes*) *angusticellula* is generally similar to several other species of the subgenus in the Oriental and eastern Palearctic faunal regions, such as *E. (E.) aurantia* (Brunetti), *E. (E.) fuscomarginata* Enderlein, and *E. (E.) uniformis* Alexander, differing from all in the body coloration and the details of venation, especially the very short and narrow cell 2d A. In the last-mentioned regard, the nearest approach to the present fly is found in *uniformis*.

ERIOPTERINI

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

Thorax entirely orange-yellow, immaculate; antennæ black throughout; femora obscure yellow basally, passing into brown; tibiæ dark brown; tarsi paling to yellowish brown; wings whitish subhyaline, the prearcular and costal regions clear light yellow; a restricted dark pattern, including the wing tip and a seam along vein Cu_1 ; R_2 at or beyond the fork of R_{2+3+4} ; abdomen black, the bases of the intermediate segments vaguely brightened.

Male.—Length, about 9 millimeters; wing, 7.2.

Female.—Length, about 11 millimeters; wing, 8.5.

Rostrum brown; palpi black. Antennæ black throughout; flagellar segments cylindrical, the verticils shorter than the segments. Head brownish yellow; anterior vertex reduced to a narrow strip, carinate, the ridge extending caudad onto the posterior vertex.

Pronotum yellow. Mesonotum and pleura entirely deep orange-yellow, immaculate. Halteres with basal third of stem obscure yellow, the outer portion and knob blackened. Legs with the coxæ and trochanters yellow; femora obscure yellow basally, passing into brown, the tips gradually deepening to dark brown; tibiæ dark brown; tarsi paling to yellowish brown; bases of femora with a series of from eight to ten small black spines; posterior tibiæ near apex with about four powerful black setæ, the outermost shorter. Wings (Plate 1, fig. 15) whitish subhyaline, the prearcular and costal regions clear light yellow; stigma dark brown; paler brown washes include the extensive wing tip, vague seams along cord, a broad, conspicuous seam in cell M adjoining vein Cu , and the axillary region; veins brownish black, luteous in the yellow basal and costal portions. Venation: R_2 at or beyond fork of R_{2+3+4} ; m-cu at or before (male) fork of M; apical fusion of veins Cu_1 and 1st A slight; cell 2d A wide.

Abdomen black, the bases of the intermediate tergites very vaguely brightened by brownish yellow; genitalia of both sexes obscure yellow.

Habitat.—China (Hainan Island).

Holotype, male, Ta Han, altitude 2,500 feet, June 22, 1935 (Gressitt). Allotopotype, female, June 23, 1935 (Gressitt).

Trentepohlia (*Mongoma*) *hainanica* is allied to *T. (M.) auricosta* Alexander and *T. (M.) flavicollis* Edwards, of Java, especially to the former. The differently patterned thorax, legs, and wings, and the uniformly darkened halteres, readily separate the present fly from these somewhat similar species. By my latest key to the Philippine species of *Trentepohlia*,⁵ the fly runs to *T. (M.) carbonipes* Alexander, of Mindanao, a very different fly.

GONOMYIA (PTILOSTENA) HAINANENSIS sp. nov. Plate 1, fig. 16.

General coloration of mesonotum dark brown, more reddish brown on sides; knobs of halteres darkened; femora yellow, with a narrow but conspicuous brownish black ring just before apex; wings yellow, sparsely patterned with dark brown; stigma oval, extending distad to vein R_3 ; vein R_4 gently arcuated; abdominal tergites black, the caudal margins narrowly yellow.

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

Rostrum and palpi dark. Antennæ with scape brownish yellow; pedicel yellow; flagellum broken. Head brownish gray.

Pronotum obscure yellow above, darker on sides. Lateral pretergites light yellow. Mesonotal præscutum dark brown medially, more reddish brown on sides, the humeral region with a very restricted area of light yellow; pseudosutural foveæ brownish black; scutum dark brown; scutellum testaceous-brown; mediotergite dark, with a pruinose gray triangle on cephalic portion, the point directed backward. Pleura reddish brown, the dorsal sclerites somewhat darker. Halteres pale, the knobs darkened. Legs with the coxæ testaceous-brown; trochanters testaceous-yellow; femora yellow, with a narrow but conspicuous brownish black ring just before apex; tibiæ obscure yellow, the tips narrowly blackened; tarsi brownish yellow, darker outwardly. Wings (Plate 1, fig. 16) with the ground color yellow, sparsely patterned with dark brown, the areas including a small arcular darkening, origin of R_s , cord and m-cu, stigma, and a

⁵ Philip. Journ. Sci. 53 (1934) 442-444.

paler brown submarginal wash in outer ends of cells R_3 and R_4 ; no darkening at outer end of vein 2d A; wing tip deeper yellow than the remainder of ground; stigmal area oval, extending distad to vein R_3 or virtually so; veins yellow, darker in the infuscated areas. Costal fringe relatively long and conspicuous; numerous macrotrichia on all veins beyond level of m-cu and on veins M and 1st A nearer the wing base. Venation: Sc_1 ending about opposite one-fourth the length of the strongly angulated to weakly spurred Rs ; R_{1+2} and R_3 close together at wing margin; vein R_4 gently arcuated, not strongly recurved as in *teranishii* and allies; medial fork about one-third longer than its petiole; m-cu less than twice its length before fork of M.

Abdominal tergites black, the caudal margins of the segments narrowly but conspicuously yellow; sternites more brownish yellow, the yellow apices not so clearly defined.

Habitat.—China (Hainan Island).

Holotype, female, Ta Han, altitude 2,500 feet, June 21, 1935 (*Gressitt*).

The nearest described allies are *Gonomyia* (*Ptilostena*) *longipennis* Alexander (Loochoo Islands) and *G. (P.) teranishii* Alexander (Japan, eastern and southern China), which differ in the coloration of the body, the uniformly pale femora, and the details of wing pattern and venation, notably the more strongly arcuated vein R_4 .

GONOMYIA (LIPOPHLEPS) CONQUISITA sp. nov. Plate 1, fig. 17.

Belongs to the *sulphurella* group; allied to *nubeculosa*; general coloration of notum dark gray; scutellum obscure yellow, darkened medially at base; femora yellow, with a narrow, dark brown, subterminal ring, the yellow apex subequal in extent or slightly wider; wings tinged with grayish, the costal border and apex whitened; abdominal tergites black, the caudal borders of the segments narrowly yellow.

Female.—Length, about 5 millimeters; wing, 4.

Rostrum and palpi black. Antennæ with scape and pedicel yellow above, darker on lower surface; flagellum broken. Head above obscure yellow, the central portion of posterior vertex more infuscated, its sides and the genæ again darkened.

Pronotum yellow, darker on sides; pretergites light yellow. Mesonotal præscutum and scutum dark gray; pseudosutural foveæ dark red, inconspicuous against the ground; scutellum obscure yellow, the basal portion darkened medially; postnotum gray. Pleura brownish black, with a conspicuous, whitish, longitudinal stripe extending from the fore coxæ to the base of

abdomen; ventral sternopleurite and meron darkened; pteropleurite and pleurotergite somewhat paler brown than the anterior sclerites. Halteres yellow, the knobs weakly darkened basally. Legs with the fore coxæ whitened, middle and posterior coxæ darker basally, the tips pale; femora yellow, with a narrow, dark brown, subterminal ring, this subequal to or narrower than the yellow apex; tibiæ yellow; tarsi broken. Wings (Plate 1, fig. 17) with a grayish tinge, the costal border and apex whitened, the latter including the distal ends of cells R_4 , R_5 , and 2d M_2 as far basad as the level of the tip of vein R_4 ; stigma small, oval, brown, interrupting the white costal border; restricted darker areas at arculus, origin of R_s , along cord and outer end of cell 1st M_2 , and as a seam on vein R_3 ; veins pale, darker in the infuscated areas, more whitened in the pale portions of the wing. Costal fringe pale, relatively long and conspicuous; rather numerous macrotrichia on veins R_{2+3+4} , R_4 , distal section of R_5 , and distal sections of M_{1+2} and M_3 ; a few trichia at extreme outer end of vein 2d A. Venation: Sc_1 ending opposite origin of the long R_s , Sc_2 close to its tip; R_s subequal in length to stem of cell R_3 ; vein R_3 very short, perpendicular; cell R_2 at margin considerably more extensive than cell R_3 ; vein R_4 rather strongly upcurved at margin; m-cu shortly before fork of M.

Abdominal tergites black, the caudal borders of the segments narrowly yellow; sternites somewhat more grayish black, the pale borders narrower. Cerci horn-colored, darkened basally.

Habitat.—China (Hainan Island).

Holotype, female, Ta Han, altitude 2,500 feet, June 21, 1935 (*Gressitt*).

Gonomyia (*Lipophleps*) *conquisita* is readily told from other members of the group that are closely allied to *nubeculosa* (de Meijere), including *pallidisignata* Alexander, by the narrow brown femoral rings. In all species of the group hitherto described, these annuli are black, very broad, and preceded and followed by narrow whitened rings.

GONOMYIA (LIPOPHLEPS) PALLICOSTATA sp. nov. Plate 1, fig. 18; Plate 2, fig. 29.

Allied to *bicolorata*; femora brown, the extreme tip abruptly pale; wings suffused with brown, the costal and apical portions narrowly white, the remainder of membrane more or less variegated by paler areas; stigma oval, dark brown; Sc short, Sc_1 ending before origin of R_s a distance nearly equal to the length of the latter vein; male hypopygium with two dististyles, the outer one bilobed, its outer arm a long, slender, simple rod, the

inner arm a densely hairy cushion; inner style terminating in a curved spine and bearing a second, very long spine on outer margin at near midlength.

Male.—Length, about 3.2 to 3.4 millimeters; wing, 3.5 to 3.8.

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

Rostrum and palpi black. Antennæ with the scape and pedicel yellow, flagellum black; flagellar segments (male) with unusually elongate verticils. Head chiefly yellow; badly flexed in types, but apparently with central darkening on posterior vertex.

Pronotum and lateral pretergites pale yellow, the former darkened on sides. Mesonotal præscutum and scutum almost uniformly dark brown, the pseudosutural foveæ black; scutellum black basally, obscure brownish yellow behind; mediotergite blackened, the anterolateral portions obscure yellow. Pleura chiefly dark brown, somewhat paler dorsally on the pteropleurite and pleurotergite, and ventrally on the ventral sternopleurite; a broad white longitudinal stripe extends from the fore coxæ across the dorsal sternopleurite, ventral pteropleurite, and meral area to base of abdomen. Halteres yellow, the lower face of knob dusky. Legs with the coxæ pale, their basal portions dark brown, the fore coxæ more uniformly whitened; trochanters testaceous-yellow; femora brown, somewhat darker outwardly, the extreme tip abruptly pale; tibiæ and tarsi brown. Wings (Plate 1, fig. 18) almost uniformly suffused with brown, the costal border and apex conspicuously china white, the degree nearly uniform throughout the area except before the stigma where the pale crosses Rs into cell R; stigma oval, dark brown; dusky ground color slightly variegated by paler areas, as in many allied forms; veins brownish yellow, paler, almost white, in the anterior pale portion. Costal fringe sparse, but long and conspicuous. Venation: Sc short, Sc₁ ending far before origin of Rs, the distance on costa nearly as long as Rs alone; branches of Rs divergent; cell R₅ narrowed at margin; m-cu a short distance before fork of M.

Abdominal tergites dark brown, the posterolateral angles yellow, more broadly and conspicuously so on outer segments; subterminal segment more uniformly darkened; hypopygium yellowish brown. Male hypopygium (Plate 2, fig. 29) with two terminal dististyles; outer style, *od*, bilobed, the outer arm a simple, slender, blackened rod, a little longer than the basistyle; inner lobe more than one-half as long as the outer, fleshy, the distal half with abundant yellow setæ. Inner dististyle, *id*,

small, terminating in a slender, curved, acute spine; on outer margin at near midlength produced into a second, very long, nearly straight spine that exceeds the style in length, its base dilated. Phallosome, *p*, with two divergent subapical lobes, the tips with microscopic setæ.

Habitat.—China (Hainan Island).

Holotype, male, Ta Han, altitude 2,500 feet, June 23, 1935 (*Gressitt*). Allotype, female, Ta Hian, altitude 2,000 feet, June 19, 1935 (*Gressitt*). Paratype, male, Liamui, altitude about 1,200 feet, August 3, 1935 (*Gressitt*).

The nearest described ally is *Gonomyia* (*Lipophleps*) *bicolorata* Alexander (Luzon, Hainan), which is similar in general appearance, but the structure of the male hypopygium is very different.

GONOMYIA (LIPOPHLEPS) PULVINIFERA sp. nov. Plate 1, fig. 19; Plate 2, fig. 30.

Mesonotum brownish black, sparsely pruinose; scutellum yellow, darkened medially at base; thoracic pleura with a longitudinal yellow stripe; femora infuscated, with a broad, blackish, subterminal ring, preceded and followed by narrow, clearer yellow annuli; tibiæ and tarsi black; wings grayish subhyaline, the costal border whitened, the disk with extensive brown clouds; Sc short; male hypopygium with the outer dististyle a long blackened rod, its distal fifth expanded and densely set with a cushion of spines.

Male.—Length, about 3.5 millimeters; wing, 3.6 to 3.7.

Rostrum obscure brownish yellow; palpi black. Antennæ black, the scape more or less brightened. Head orange-yellow, variegated by brownish black on central portion of disk.

Mesonotum brownish black, sparsely pruinose; pseudosutural foveæ black; scutellum yellow, darkened medially at base; postnotum more heavily pruinose. Pleura brownish black, the dorsal pteropleurite and pleurotergite more infuscated; a relatively narrow but conspicuous, pale yellow, longitudinal stripe extending from the fore coxæ to the base of abdomen, passing beneath the root of halteres, this stripe narrowly bordered dorsally by a dark stripe. Halteres yellow, most of the knobs infuscated. Legs with the coxæ darkened basally, paler at tips; trochanters brownish testaceous; femora infuscated, the distal third more yellowish, inclosing a broad, more-blackened subterminal ring, the actual tip and postmedian pale annulus much narrower; posterior femora with long erect setæ; tibiæ and tarsi brownish black. Wings (Plate 1, fig. 19) with the ground color grayish subhyaline, variegated by more brownish clouds near wing base,

across outer ends of cells R to 1st A, inclusive, and beyond the cord; costal border and conspicuous areas before and beyond stigma white; stigma oval, pale brown; veins pale brown, still paler in the brightened costal portions, darker along cord. Costal fringe relatively long and conspicuous; trichia of veins beyond cord relatively abundant. Venation: Sc short, Sc₁ ending some distance before origin of Rs, the distance on C being about two-thirds the length of Rs alone; r-m long, gently arcuated.

Abdomen blackened, the caudal borders of both tergites and sternites restrictedly paler; hypopygium large, more chestnut-brown, the conspicuous outer dististyle black. Male hypopygium (Plate 2, fig. 30) with the two dististyles terminal in position. Outer dististyle, *od*, a long, nearly straight, blackened rod that is considerably longer than the basistyle, on apical fifth a little dilated and bearing a dense brush or cushion of spines; outer surface of stem of style with abundant spinous points or teeth. Inner dististyle, *id*, small, simple, long, and slender. Phallosome, *p*, not clearly evident in material studied, consisting of flattened pale cushions and a single, acute, smooth black spine.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 feet, August, 1935, at light (*Sircar*). Paratopotype, 2 males.

By Edwards's key to the Oriental species of *Lipophleps*,⁶ the present fly runs to *subnebulosa* Edwards, a quite different species with the wing pattern distinct. As usual in the genus, the male hypopygium offers the chief feature for the separation of the species from allied forms.

GONOMYIA (LIPOPHLEPS) SIRCARI sp. nov. Plate 1, fig. 20; Plate 2, fig. 31.

General coloration dark brownish gray; scutellum obscure yellow on posterior border; pleura with a light yellow longitudinal stripe; legs dark brown; posterior femora with a series of more than a score of erect setæ; wings with a faint brown tinge, the disk slightly variegated by more grayish subhyaline areas; Sc short; male hypopygium with the outer dististyle a simple rod; inner dististyle bearing two long, slender, pale arms, each tipped with a small blackened spine; phallosome with appressed spinulose points.

Male.—Length, about 3 millimeters; wing, 3.3.

Rostrum and palpi black. Antennæ black throughout. Head above orange-yellow, the central portion of vertex more darkened.

⁶ Journ. Fed. Malay St. Mus. 14 (1928) 104-105.

Pronotum and anterior lateral pretergites yellow. Mesonotal præscutum and scutum uniformly dark brownish gray, without markings; scutellum obscure yellow on the posterior border, broadly darkened medially at base; postnotum obscure yellow on cephalic half, the posterior portion darkened. Pleura with the dorsopleural membrane and most of pteropleurite and pleurotergite obscure yellow, the more ventral pleurites brownish gray, with a conspicuous light yellow longitudinal stripe extending from and including the fore coxæ, reaching the base of abdomen. Halteres dusky, with most of the knob light yellow. Legs with the fore coxæ yellow, the remaining coxæ and all trochanters more testaceous; remainder of legs dark brown; posterior femora with an evenly spaced series of more than a score of long erect setæ, additional to the usual appressed vestiture. Wings (Plate 1, fig. 20) with a faint brownish tinge, the prearcular and costal portions more clearly yellow; stigma small, oval, a little darker than the ground color; disk variegated by more grayish subhyaline areas on the posterior half of wing, the radial field more uniformly pale brown; veins pale brown, a little lighter in the costal and prearcular fields. Costal fringe moderately long, at base with setæ very sparse and tiny; anterior branch of Rs without trichia; R_5 and all outer branches of M with numerous trichia. Venation: Sc short, Sc_1 ending some distance before origin of Rs, the distance on C equal to about two-thirds the length of Rs; Rs only a little shorter than its anterior branch, the latter directed strongly cephalad, so cell R_4 at margin is very wide; m-cu close to fork of M.

Abdominal tergites dark brown, the incisures restrictedly paler; sternites and hypopygium more yellowish. Male hypopygium (Plate 2, fig. 31) with two dististyles, both terminal in position. Outer style, *od*, a simple sinuous rod, the base with a small mesal flange, the central third of the blade a little wider, the apex obtuse. Inner style, *id*, bearing two, long, slender, pale arms, each tipped with a small blackened spine; outer rod a little longer than the inner, the latter bearing two spines on one side and only one on the other (of the unique type, probably abnormal, and the condition may be normally unispinous). Phallosome, *p*, appearing as two divergent, flattened, black horns that run out into smooth black spines, the surface microscopically serrulate and provided with appressed spinulose points.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 feet, August, 1935, at light (*Sircar*).

I take great pleasure in naming this distinct crane fly in honor of the collector of this interesting series of Tipulidæ from the Khasi Hills, Mr. S. Sircar. The species is readily distinguished from other, generally similar, allied species in this faunal area, such as *flavomarginata* Brunetti and *nissoriana* sp. nov., by the structure of the male hypopygium.

GONOMYIA (LIPOPHLEPS) NISSORIANA sp. nov. Plate 1, fig. 21; Plate 2, fig. 32.

General coloration dark brown; scutellum obscure yellow, darkened medially at base; pleura with a clear yellow longitudinal stripe; knobs of the halteres darkened; legs brownish black; wings with a faint brown tinge, the costal border whitened; stigma and narrow seams along cord and outer end of cell 1st M_2 vaguely seamed with pale brown; Sc short; abdominal tergites uniformly dark brown, the sternites and hypopygium yellow; male hypopygium with both dististyles terminal in position, the inner at apex produced into a long yellow arm that is tipped with a small black spine and bears a single very long bristle that is longer than the arm itself.

Male.—Length, about 2.7 millimeters; wing, 3.

Rostrum and palpi black. Antennæ with the scape black, pedicel chiefly orange, flagellum black. Head light yellow, the central portion of vertex weakly darkened.

Pronotum and the lateral pretergites light yellow. Mesonotal præscutum and scutum dark brown, the surface sparsely pruinose; pseudosutural foveæ reddish brown; scutellum obscure yellow, the base darkened; mediotergite extensively obscure yellow, darkened behind and on sides. Pleura with dorsal sclerites and membrane brownish yellow; a broad, clear yellow, longitudinal stripe extending from the fore coxæ to the base of abdomen, passing beneath the halteres, narrowly bordered above by darker brown; ventral sternopleurite darkened. Halteres with the stem dusky, the knob yellow. Legs with the coxæ testaceous, the fore pair somewhat clearer; remainder of legs brownish black; posterior femora with moderately erect setæ along the entire length. Wings (Plate 1, fig. 21) with a faint brown tinge, the prearcular and costal portions more whitened; stigma long-oval, slightly darker brown than the ground; cord and outer end of cell 1st M_2 vaguely seamed with pale brown, best indicated by a darkening of the veins; veins brown, more yellowish in the whitened areas. Anterior branch of Rs without trichia; R_5 and all outer branches of M with numerous trichia. Venation: Sc short, Sc_1 ending some distance before origin of Rs, the distance on C about one-half Rs; anterior

branch of Rs directed rather strongly cephalad so cell R_2 at margin is only a little more than one-third as extensive as cell R_4 ; m-cu at fork of M.

Abdominal tergites uniformly dark brown; sternites and hypopygium yellow. Male hypopygium (Plate 2, fig. 32) with the two dististyles terminal in position, the outer style, *od*, a glabrous darkened blade, shaped more or less like a cleaver, the margins smooth. Inner dististyle, *id*, at apex extended into a long, slender, yellow arm that is tipped with a small black spine and a single very long seta that is longer than the arm itself; the arm at near midlength bears a dense group of short setæ. Phallosome, *p*, consisting of coiled yellow rods that terminate in a dense brush of setæ.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 feet, August, 1935, at light (*Sircar*).

I take much pleasure in naming this distinct species in honor of Mr. Nissor Singh, veteran collector of the Himalayan Butterfly Company, who celebrated his eightieth birthday in December, 1935. The fly is allied to species such as *Gonomyia* (*Lipophleps*) *sircari* sp. nov., and *G. (L.) luteimarginata* Alexander, differing very conspicuously from all described forms in the structure of the male hypopygium.

CRYPTOLABIS (BÆOURA) DICLADURA sp. nov. Plate 1, fig. 22; Plate 2, fig. 33.

General coloration dark gray, the scutellum yellow, darker medially at base; legs with short setæ; wings with a slight grayish tinge, the stigmal region weakly suffused; prearcular and costal regions more whitened; cell 2d A wide, vein 2d A deflected caudad on its distal third; male hypopygium with the dististyles subterminal in position, profoundly bifid, the inner arm longer than the outer.

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

Female.—Length, about 3.6 millimeters; wing, 4.

Rostrum dull black; palpi infuscated. Antennæ dark throughout; pedicel black; outer flagellar segments elongate. Head uniformly gray.

Pronotum yellowish white. Mesonotal præscutum and scutum almost uniformly dark gray, or blackish with a relatively sparse pruinosity; scutellum yellow, darker medially at base; postnotum gray. Pleura dark brownish gray, the dorsopleural region yellow. Halteres pale, the knobs darkened. Legs with the coxæ and trochanters testaceous-brown; femora obscure yellow, the tips infuscated; tibiæ and tarsi brownish black; vestiture of legs

short and appressed, inconspicuous. Wings (Plate 1, fig. 22) with a slight grayish tinge, the stigmal region weakly suffused; a vague darkened seam along cord, best indicated by a more intense coloring of the veins traversed; prearcular and costal regions more whitened; veins brown, pale in the whitened areas. Costal fringe relatively long and conspicuous. Venation: R_2 a little shorter than R_{2+3} ; m-cu at near midlength of M_{3+4} ; cell 2d A wide, the vein deflected caudad on its distal third.

Abdomen dark brown, the hypopygium brightened. Male hypopygium (Plate 2, fig. 33) with the ninth tergite, 9t, having each outer lateral angle produced into a slender straight point; median area of tergite slightly produced, the caudal border gently concave. Dististyle, d , subterminal in position, long and slender, profoundly bifid, the outer arm only about one-half as long as the inner but somewhat stouter. \AA edeagus, a , terminating in a very long needlelike point.

Habitat.—China (Hainan Island).

Holotype, male, Ta Hian, altitude 2,000 feet, June 11, 1935 (*Gressitt*). Allotopotype, female. Paratopotype, 1 female.

Compared with other similar regional species of *Bæoura* that have the wings broad, cell 2d A wide, inconspicuously hairy legs, and conspicuously brightened scutellum, the present fly is readily told by the somewhat remarkable male hypopygium, especially the dististyle.

CRYPTOLABIS (BÆOURA) SETOSIPES sp. nov. Plate 1, fig. 23; Plate 2, fig. 34.

Belongs to the *trichopoda* group; general coloration black; scutellum obscure yellow; wings with a dusky tinge, the costal border more whitened; a broad dark seam along cord; cell 2d A narrow; male hypopygium with the lateral angles of the tergite extended caudad into narrow arms; dististyle deeply bilobed, the inner arm slender.

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

Female.—Length, about 3.5 millimeters; wing, 4.

Rostrum testaceous; palpi brown. Antennæ apparently 14-segmented, short, dark brown; flagellar segments passing through short-cylindric into long-cylindric; terminal segment longer than the penultimate, constricted at near midlength; verticils very long and conspicuous. Head light gray; setæ and punctures conspicuous.

Pronotum testaceous-gray. Mesonotal præscutum dull black, the humeral region scarcely brightened; scutum, including median area, dull black; scutellum obscure yellow, darker medially at base, parascutella black; mediotergite dark, heavily gray

pruinose. Pleura black, heavily pruinose; dorsopleural membrane paler. Halteres dusky, the base of stem restrictedly brightened, the knobs a little paler. Legs with the fore coxæ black, the middle and hind coxæ a little paler; trochanters testaceous-yellow; femora brown; tibiæ and tarsi brownish black; segments with very long erect setæ, as in the group; claws (male) very long and slender, each with a long, pale, erect seta or setoid spine at base. Wings (Plate 1, fig. 23) with a dusky tinge, the entire costal border both before and beyond the stigma whitened; stigma and a broad confluent seam along the cord darker than the ground; basal portions of wing a trifle infumed; veins dark, paler in the whitened costal portions. Venation: Sc_1 ending opposite cord, Sc_2 not far from its tip; cell 2d A narrow.

Abdomen, including hypopygium, brownish black. Male hypopygium (Plate 2, fig. 34) with the tergite, 9t, produced laterad and caudad into slender glabrous points; median portion of caudal border likewise produced into a low triangular point. What seems to be a part of the eighth sternite is represented by a slender pale structure that terminates in two strong modified setæ, suggesting the condition found in *Styringomyia*. Dististyle, *d*, terminal, deeply bifid, the broader outer arm with numerous setigerous punctures, including a dense group at apex; before tip, near inner margin of lobe, with two slender spines; inner arm nearly as long but much slenderer, with setæ only at apex. Ædeagus, *a*, broadly depressed, except on apical portion.

Habitat.—China (Hainan Island).

Holotype, male, Ta Hian, altitude 2,000 feet, June 11, 1935 (*Gressitt*). Allotype, female, Liamui, altitude about 1,200 feet, July 31, 1935 (*Gressitt*). Paratopotype, female.

In its hypopygial structure, *Cryptolabis* (*Bæoura*) *setosipes* is very different from the other members of the *trichopoda* group described to this date.

CRYPTOLABIS (BÆOURA) CONSONA sp. nov. Plate 2, fig. 35.

Belongs to the *trichopoda* group, closely allied to *setosipes*; male hypopygium with the outer lateral angles of tergite produced caudad into very long, slender blades, the tips subacute; dististyle simple, appearing as an elongate blade, narrowed outwardly to the obtuse tip, on outer face at near two-thirds the length with a small peglike spine.

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

Female.—Length, about 3.5 millimeters; wing, 4.

Rostrum and palpi dark. Antennæ of moderate length, dark throughout, apparently 15-segmented; basal flagellar segments

short-oval, the outer segments more elongate, with very long, conspicuous verticils. Head gray.

Mesonotum dull black, the surface very sparsely pruinose; scutellum obscure brownish yellow, the base darkened medially; postnotum more heavily pruinose. Halteres weakly suffused with dusky, especially the central portion of stem. Legs with the coxæ brownish testaceous; trochanters obscure yellow; femora brown; tibiæ obscure yellow, the tip narrowly darkened, especially the distal portions of posterior legs; tarsi brown, passing into black outwardly; segments of legs with very long conspicuous setæ, as in the group. Wings with a strong dusky tinge, the costal region more whitish; a darkened cloud along cord; basal cells slightly infumed, leaving rather clearer areas before and beyond the cord; stigma a little darker; veins dark, somewhat paler in the costal field. Venation: Virtually identical with that of *setosipes*; cell 2d A a trifle narrower.

Abdomen, including hypopygium, brownish black. Male hypopygium (Plate 2, fig. 35) with the outer lateral angles of tergite, 9t, produced caudad into very long, slender blades, the tips subacute; caudal margin between the horns transverse or very slightly protuberant, not produced into a point as in *setosipes*. Dististyle, *d*, simple, appearing as an elongate blade that narrows outwardly, the tip obtuse; outer face of style at near two-thirds the length with a small peglike spine; before apex of style, near inner margin, with two or three small spinous points, as in *setosipes*.

Habitat.—China (Hainan Island).

Holotype, male, Dwa Bi, altitude about 1,500 feet, July 21, 1935 (*Gressitt*). Allotopotype, female.

Cryptolabis (*Bæoura*) *consona* is very similar in its general appearance to *C. (B.) setosipes* sp. nov., but is entirely distinct in the structure of the male hypopygium.

STYRINGOMYIA HOLOMELANIA sp. nov. Plate 1, fig. 24; Plate 2, fig. 36.

Entire body black; halteres and legs black, the tarsal segments slightly paler on basal portions; wings narrow, whitish subhyaline, the cord and vein Cu seamed with brown; anterior branch of Rs oblique; male hypopygium with the basistyle bearing two spines, the inner one only half the length of the outer; outer lobe of dististyle with a dense group of spines near base; tenth tergite with median lobe very slender; ninth sternite bilobed at apex.

Male.—Length, about 5 millimeters; wing, 3.4.

Rostrum and palpi black. Antennæ black, the outer flagellar segments a trifle paler. Head black.

Thorax entirely black, including the coarse but unmodified setæ. Halteres black. Legs black, the basal three tarsal segments a very little paler on their proximal portions. Wings (Plate 1, fig. 24) narrow, whitish subhyaline, the cord and vein Cu seamed with brown; veins brown. No macrotrichia on veins behind R_1 excepting a complete series of about twenty-two on vein R_5 and an isolated bristle on anterior branch of R_s ; two or three trichia on outer ends of distal sections of medial veins. Venation: Anterior branch of R_s oblique; cell 1st M_2 long and narrow, exceeding any of the veins beyond it; m-cu sinuous, at near one-third the length of cell 1st M_2 ; vein 2d A unspurred but strongly curved near outer end.

Abdomen black throughout. Male hypopygium (Plate 2, fig. 36) with the basistyle, *b*, bearing two unequal spines on a short apical lobe, the outer spine about twice the length of the inner, flattened on basal half; inner spine obtuse at apex. Tip of basistyle with an acute blackened spine that is directed mesad. Outer lobe, *od*, of dististyle relatively stout, bearing a dense group or comb of equal black spines on mesal face near base; inner lobe, *id*, produced into two arms. Tenth tergite, *t*, with the median lobe very slender, appearing as a ligulate structure clothed with abundant erect setæ. Ninth sternite, *9s*, bilobed at apex, each lobe obtusely rounded, the median notch acute; the two usual modified setæ placed basally on lobes, unusually slender and more or less decussate.

Habitat.—Assam (Khasi Hills).

Holotype, male, Cherrapunji, altitude 4,000 feet, August, 1935, at light (*Sircar*).

Styringomyia holomelania is very different from all described species that have bispinous basistyles on the male hypopygium. The uniformly black coloration of the body, halteres, femora, and tibiæ provide characters that separate the fly from all species of the genus hitherto described. It seems to be most nearly allied to *S. obscura* Brunetti, yet is amply distinct in the coloration of the body, wings, and legs.

ILLUSTRATIONS

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

PLATE 1

- FIG. 1. *Longurio hainanensis* sp. nov., venation.
 2. *Nephrotoma hainanica* sp. nov., venation.
 3. *Phalacrocerata tarsalba* sp. nov., venation.
 4. *Limonia* (*Gressittomyia*) *xenoptera* sp. nov., venation.
 5. *Limonia* (*Limonia*) *calcarifera* sp. nov., venation.
 6. *Limonia* (*Libnotes*) *quinque-costata* sp. nov., venation.
 7. *Antocha* (*Antocha*) *flavidula* sp. nov., venation.
 8. *Antocha* (*Antocha*) *khasiensis* sp. nov., venation.
 9. *Pseudolimnophila concussa* sp. nov., venation.
 10. *Pseudolimnophila seticostata* sp. nov., venation.
 11. *Hexatoma* (*Euhexatoma*) *triphragma* sp. nov., venation.
 12. *Hexatoma* (*Eriocera*) *tuberculata* sp. nov., venation.
 13. *Hexatoma* (*Eriocera*) *hirtithorax* sp. nov., venation.
 14. *Elephantomyia* (*Elephantomyodes*) *angusticellula* sp. nov., venation.
 15. *Trentepohlia* (*Mongoma*) *hainanica* sp. nov., venation.
 16. *Gonomyia* (*Ptilostena*) *hainanensis* sp. nov., venation.
 17. *Gonomyia* (*Lipophleps*) *conquisita* sp. nov., venation.
 18. *Gonomyia* (*Lipophleps*) *pallucostata* sp. nov., venation.
 19. *Gonomyia* (*Lipophleps*) *pulvinifera* sp. nov., venation.
 20. *Gonomyia* (*Lipophleps*) *sircari* sp. nov., venation.
 21. *Gonomyia* (*Lipophleps*) *nissoriana* sp. nov., venation.
 22. *Cryptolabis* (*Bæoura*) *dicladura* sp. nov., venation.
 23. *Cryptolabis* (*Bæoura*) *setosipes* sp. nov., venation.
 24. *Styringomyia holomelania* sp. nov., venation.

PLATE 2

- FIG. 25. *Limonia* (*Gressittomyia*) *xenoptera* sp. nov., male hypopygium.
 26. *Antocha* (*Antocha*) *flavidula* sp. nov., male hypopygium.
 27. *Antocha* (*Antocha*) *khasiensis* sp. nov., male hypopygium.
 28. *Pseudolimnophila concussa* sp. nov., male hypopygium.
 29. *Gonomyia* (*Lipophleps*) *pallucostata* sp. nov., male hypopygium.
 30. *Gonomyia* (*Lipophleps*) *pulvinifera* sp. nov., male hypopygium.
 31. *Gonomyia* (*Lipophleps*) *sircari* sp. nov., male hypopygium.
 32. *Gonomyia* (*Lipophleps*) *nissoriana* sp. nov., male hypopygium.
 33. *Cryptolabis* (*Bæoura*) *dicladura* sp. nov., male hypopygium.
 34. *Cryptolabis* (*Bæoura*) *setosipes* sp. nov., male hypopygium.
 35. *Cryptolabis* (*Bæoura*) *consona* sp. nov., male hypopygium.
 36. *Styringomyia holomelania* sp. nov., male hypopygium.

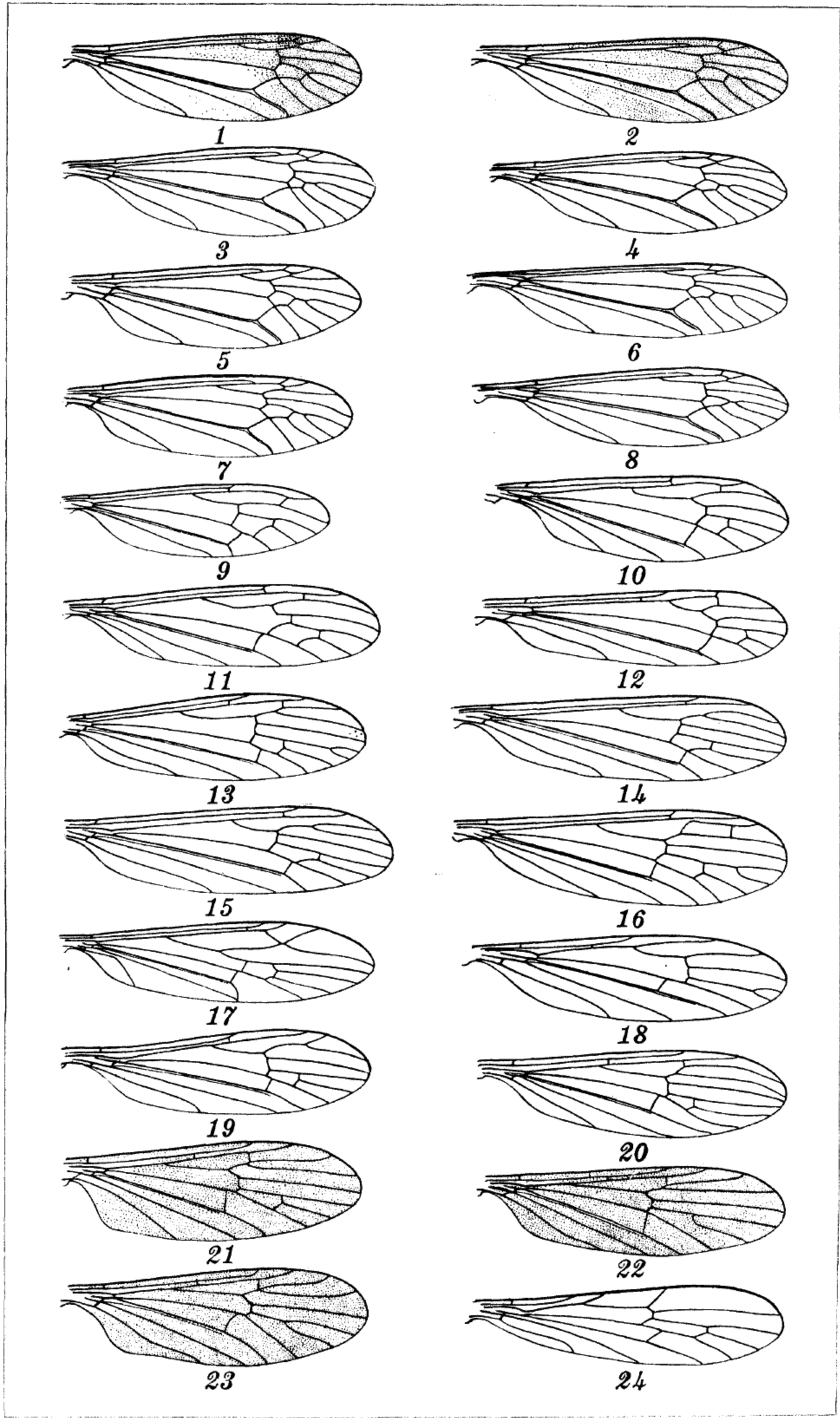


PLATE 1.



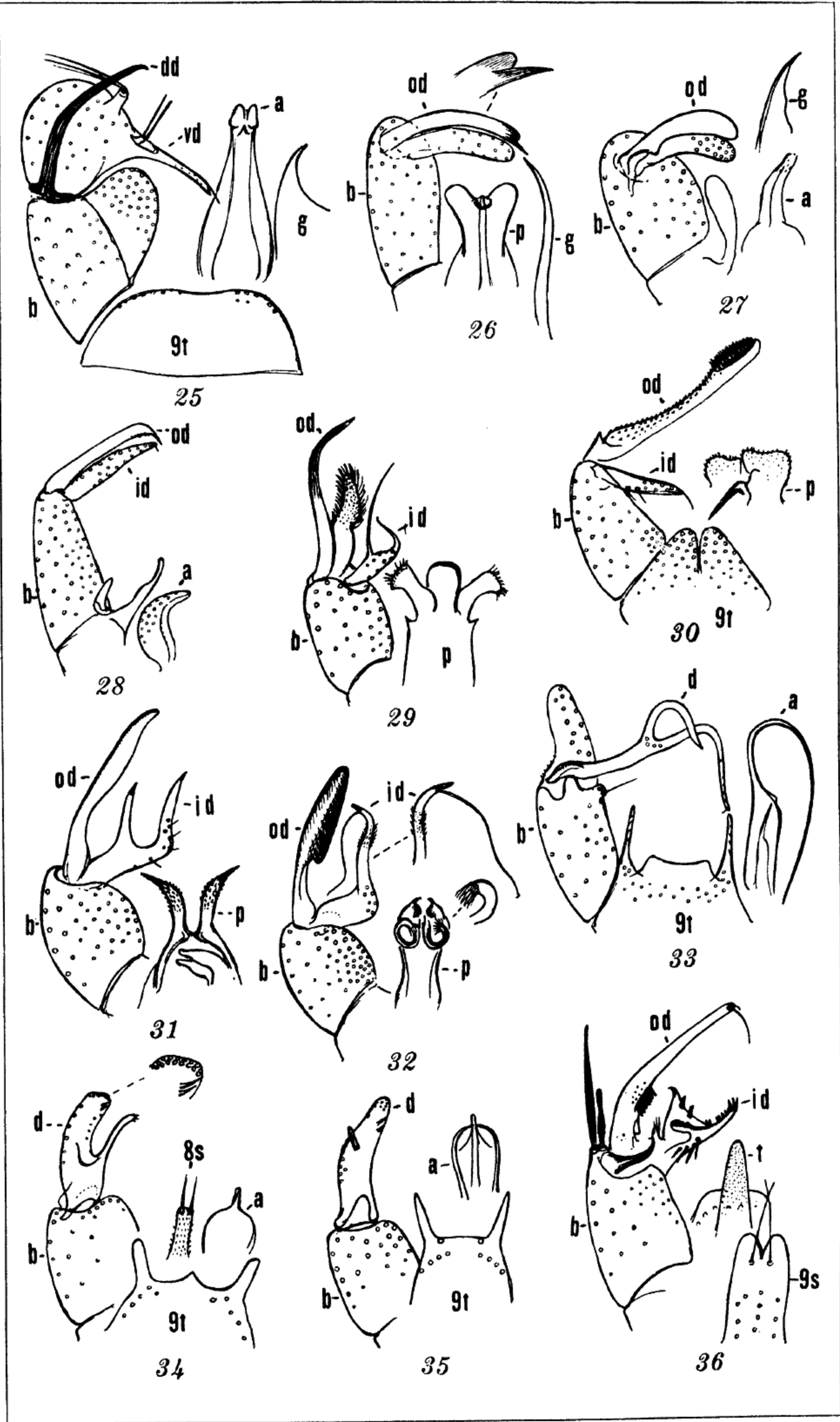


PLATE 2.

