

NEW OR LITTLE-KNOWN TIPULIDÆ FROM EASTERN
ASIA (DIPTERA), XXXV¹

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THREE PLATES

Virtually all of the species discussed in the present report are from southeastern China, where they were collected in 1936 by Mr. J. Linsley Gressitt. A few additional species are from Java, collected by Mrs. M. E. Walsh. I am very greatly indebted to Mr. Gressitt and to Mrs. Walsh for the privilege of retaining the materials in my collection of crane flies.

Our knowledge of the distribution of the Tipulidæ in eastern China is still so fragmentary that I am supplying records of many of the species. Several of these had been known hitherto only from Formosa, while still others had been recorded only from the mountains of Szechwan, western China. I am indebted to Mr. Gressitt for the following notes on the stations in southeastern China, where collections of Tipulidæ were made in 1936.

KWANGTUNG PROVINCE.

Mei-hsien (Kaying, Moejen). Altitude 715 feet (May 29 to June 1; June 7 to 10, and 17 to 20; July 28 to 30). Fairly large city in eastern Kwangtung, about equidistant from Kiangsi and Fukien boundaries, located on the Mei River, a branch of the Han River. Environs largely grassy or cultivated; scattered pines on the hills; valleys with native fruit trees, banyans, bamboos, and others.

Tai-yong. Altitude 2,090 feet (August 2 to 7). Small summer resort in eastern Kwangtung, about 80 kilometers west-northwest of Swatow, northwest of Wu-king-fu, in a cultivated mountain valley, encircled by partly wooded mountains.

Tsin-leong-san (Clear Cool Mountain). Altitude 2,750 feet (June 1 to 7). Small mountain resort in Mei-hsien district, about 18 kilometers south-southwest of Mei-hsien city, located near the summit (3,120 feet) of the range. Mountain partly

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

grassy, partly with dense shrubbery, low forests, *Cunninghamia*, small swamps, or cultivated tea.

Yim-na-san (Yam-na-shan). Collections at 1,800 feet; summit 4,225 feet (June 10 to 17). Sacred mountain in Mei-hsien district, eastern Kwangtung, about 40 kilometers northeast of Mei-hsien City. Dense forests in canyons and behind monastery; ridges grassy, with *Pinus*; *Cryptomeria* before Monastery.

KIANGSI PROVINCE.

Hong San. Altitude 5,100 feet (June 21 to July 1; July 14 to 17). Probably the highest mountain (5,200 feet) in regions visited. Located in southeastern corner of Kiangsi, east of Sungwu, very near the Kwangtung and Fukien borders. Densely forested on upper slopes; rice fields in valleys on either side. First half of first visit spent at village (altitude 2,115 feet) in enclosed valley at foot of west side, collecting up side; remainder spent in hut at edge of jungle on south side (altitude 3,100 feet). Second visit spent on east side of pass at north end of mountain.

Tai-au-hong. Altitude 1,750 feet (July 3 to 8). Group of small hamlets in small valley in southeastern Kiangsi, near Kwangtung border, below pass in range. Canyons with fairly dense forest in part; much *Cunninghamia*-lumbered; ridges grassy.

Wong-sa-shue. Altitude 1,900 feet (July 8 to 12). Small village between Sungwu and Tai-au-hong, in southeastern Kiangsi. Collecting done on forested slopes of Ng-tze-san, above and below a small shrine, from foot (1,600 feet) to summit (3,175 feet). Dense jungles; conifers on upper parts; tea cultivated; tigers present.

FUKIEN PROVINCE.

Gang-keu. Altitude 1,900 feet (July 22 to 28). Small village in southwestern Fukien, south of Shanghang and between Liung-chon-san and Ngam-chen. At the edge of a flattish valley and at the foot of a steeply rising range, part of the Leong San system. Mountain side and narrow canyons, largely with dense jungle, with trails. Pythons reported as frequent; tigers occasional.

Liung-chon-san. Altitude 2,525 feet (July 20 to 22, and 27). Small range in the Leong San system, 25 kilometers south of Shanghang, in southwestern Fukien. Summit about 3,400 feet, largely unforested; lower slopes with groves of bamboo, *Pinus* and *Cunninghamia*, with mixed forests or bushy areas in parts.

PTYCHOPTERIDÆ

PTYCHOPTERA BELLULA sp. nov. Plate 1, fig. 1.

General coloration black; halteres black, the base of stem restrictedly yellow; femora yellow, the tips narrowly and insensibly darkened; wings subhyaline, heavily patterned with brown; Rs long, about three-fifths the length of R_{4+5} ; abdomen black, the proximal ends of the basal tergites yellow, most conspicuous on segment four.

Male.—Length, about 6.5 millimeters; wing, 6.2; antenna, about 3.

Female.—Length, about 7 to 7.2 millimeters; wing, 6.3 to 6.5.

Rostrum yellow; basal segment of palpi brownish yellow, the outer segments dark brown, the elongate terminal segment paler basally than at outer end. Antennæ of male of moderate length, as shown by the measurements; scape and pedicel (male) yellow, of female brownish black; basal segment of flagellum yellow, succeeding segments dark brown; in the female the antennæ are shorter. Head polished black; anterior vertex wide.

Thorax black, the dorsopleural membrane buffy. Halteres black, the base of stem restrictedly yellow. Legs with the coxæ and trochanters yellow; femora yellow, the tips narrowly and insensibly darkened, more extensively so on the forelegs; tibiæ yellowish brown to brown; tarsi brownish black. Wings (Plate 1, fig. 1) subhyaline, heavily patterned with brown, as follows: A major area in bases of cells R and M; a large quadrate area at origin of Rs; a broad band at cord, extending from R to the bend in the distal section of Cu_1 , a broad band across outer forks, extending from costa to beyond the fork of M_{1+2} ; an oval area at near midlength of vein M_3 ; wing tip paler brown; in cases, the dark area at cord confluent with that at origin of Rs; veins brown, slightly darker in the clouded areas. Macrotrichia of cells abundant, indicated in the figure by stippling. Venation: Rs long, about three-fifths R_{4+5} ; fork of M_{1+2} about one-half as deep as that of vein R_{4+5} .

Abdominal tergites black, in the male with bases of segments two to four yellow, becoming more extensive on the outer segments, especially the fourth; in the female, abdomen chiefly darkened, except for the basal half of the fourth segment; outer segments, including hypopygium, black, the appendages of the latter a little paler; basal sternites yellow, the subterminal segments black.

Habitat.—China (Kiangsi).

Holotype, male, Hong San, altitude 2,925 feet, June 30, 1936 (*Gressitt*). Allotopotype, female, altitude 3,000 feet, June 28, 1936. Paratopotypes, 2 females, altitude 3,000 to 3,160 feet, June 27 to 28, 1936.

Ptychoptera bellula is very different from the other described regional species having Rs elongate, such as *P. clitellaria* Alexander, of western China, and *P. daimio* Alexander, of northern Japan, especially in the small size and conspicuous wing pattern. In the latter respect, the present fly somewhat resembles *P. japonica* Alexander, of Japan, but is readily told by the short antennæ and venation, as the length of Rs.

PTYCHOPTERA JAVENSIS sp. nov. Plate 1, fig. 2.

Head deep blue; mesonotal præscutum opalescent, the ground color black with three light castaneous stripes; scutellum black; postnotum and pleura uniformly reddish yellow; femora yellow, the tips very narrowly and abruptly black; wings pale yellowish subhyaline, with narrow brown bands at cord and across the outer forks; Rs short, less than r-m; abdomen yellow, the tergites narrowly ringed caudally with brownish black; hypopygium large and complicated, yellow.

Male.—Length, about 9 millimeters; wing, 8.5; antenna, about 5.5.

Rostrum brownish yellow; palpi pale brown, the outer segments dark brown. Antennæ of male relatively elongate, exceeding one-half the length of body; scape, pedicel, and base of first flagellar segment, yellow, the remainder of organ black; flagellar segments long-cylindrical, with a short dense pubescence and relatively short, unilaterally arranged, black verticils. Head deep blue.

Mesonotal præscutum opalescent, the ground color black, the three usual stripes light castaneous, the laterals confluent with the similarly colored scutal lobes; scutellum small, black; mediotergite entirely light castaneous brown to obscure reddish yellow. Pleura and pleurotergite uniformly reddish yellow. Halteres blackened, the base of stem restrictedly yellow. Legs with the coxæ and trochanters yellow; femora yellow, the tips very narrowly but abruptly black, the amount subequal on all legs; tibiæ and basitarsi testaceous-yellow, the tips narrowly darkened, especially of the latter; remainder of tarsi black. Wings (Plate 1, fig. 2) pale yellowish subhyaline, the prearcular and costal regions deeper yellow; a narrow brown crossband along

cord, extending from R to the bend of the distal section of Cu_1 ; a second band across the outer forks, from R_2 to beyond midlength of vein M_2 ; wing tip in outer radial field restrictedly and vaguely darkened; veins dark, yellow in the flavous areas, including the basal portions of veins Cu_1 and Cu_2 . Abundant macrotrichia in outer cells (indicated in the figure by stippling), in outer end of cell R and basal half of cell R_5 appearing as a linear series at near midwidth of the cells. Venation: Rs short, less than r-m.

Abdomen yellow, the tergites narrowly ringed caudally with brownish black; subterminal segments more uniformly blackened; hypopygium yellow, large, and very complicated in a structure.

Habitat.—East Java.

Holotype, male, Soember Brantas, Mount Ardjano, altitude 6,000 feet, January 1936 (*Walsh*).

Ptychoptera javensis is most closely allied to *P. annandalei* Brunetti, of Burma, *P. formosensis* Alexander, of Formosa, and *P. sumatrensis* Alexander, of southern Sumatra, differing from all in the coloration of the body and in the structure of the male hypopygium. The species is of unusual interest in that it adds the family Ptychopteridæ to the known dipterous fauna of Java and in that it provides the most easterly record of any species in Asia. Whether any member of the family will be found to the east of Wallace's Line, in Wallacea or Australasia, remains in question.

TIPULIDÆ

TIPULINÆ

DOLICHOPEZA (SINOROPEZA) PAUCISETOSA sp. nov. Plate 1, fig. 3.

General coloration brownish black to black, the præscutum with three polished, more brown, stripes; wings with a strong brown tinge, cells C and Sc a little darker; stigma dark brown; very sparse macrotrichia in extreme outer ends of cells R_3 and R_5 ; Sc_2 ending about opposite fork of the short oblique Rs; abdomen, including genitalia, black.

Female.—Length, about 9 millimeters; wing, 12 to 12.2.

Rostrum brownish black; palpi black. Antennæ with scape and pedicel brownish yellow; flagellum black; flagellar segments cylindrical, with short inconspicuous verticils. Head brownish black; anterior vertex wide.

Mesonotum almost uniformly black or brownish black, the præscutum with three polished, more brownish, stripes; disc of

mediotergite with long, coarse, black setæ. Pleura brownish black. Halteres black, the stem a trifle paler. Legs long and slender, black throughout. Wings (Plate 1, fig. 3) with a strong brown tinge, cells C and Sc a trifle darker; stigma long-oval, dark brown; cord, extreme wing tip, and certain of the longitudinal veins narrowly and vaguely seamed with brown; veins dark. Very sparse macrotrichia in outer ends of cells R_3 and R_5 (shown in the figure by stippling). Venation: Sc_2 ending about opposite the fork of the short oblique Rs; free tip of Sc_2 lying some distance before the short spur of vein R_{1+2} ; R_1 in direct longitudinal alignment with $Sc_2 + R_1$; petiole of cell M_1 a little shorter than that of cell M_2 .

Abdomen, including the genitalia, black. Ovipositor with the valves fleshy and obtuse, with long setæ.

Habitat.—China (Kiangsi).

Holotype, female, Hong San, altitude 3,160 feet, June 27, 1936 (*Gressitt*). Paratopotype, female, altitude 3,150 feet, June 27, 1936.

The only other species of the subgenus having macrotrichia in the cells of the wing is the subgenotype, *Dolichopeza* (*Sinoropeza*) *pluricomma* Alexander, of western China. This differs conspicuously in the smaller size, distinct wing pattern, and coloration of the legs, and in the abundant macrotrichia in the outer cells of the wing. In this latter species Rs is longer, less transverse, and about one-half as long as vein R_{2+3} ; in the present fly Rs is very short, not exceeding one-third the length of R_{2+3} .

DOLICHOPEZA (NESOPEZA) FABELLA sp. nov. Plate 1, fig. 4.

General coloration of mesonotum dark brown; pleura chiefly testaceous-yellow, the pleurotergite and ventral pleurites darkened; femora brownish yellow, tibiæ and tarsi white; wings tinged with brownish, the tip darker; stigma oval, dark brown, preceded and followed by extensive whitish areas; restricted macrotrichia in cells R_3 to 2d M_2 inclusive; Rs longer than m-cu; abdomen dark brown, tergite two with a conspicuous white area on sides at near midlength; sternites brownish black, narrowly ringed with whitish.

Sex?—Wing, 7 millimeters.

Rostrum and palpi dark. Antennæ elongate, if bent backward extending to opposite the end of the second abdominal segment or beyond scape, pedicel and base of first flagellar seg-

ment brownish yellow, the remainder of organ brownish black; flagellar segments long-cylindrical, with coarse erect setæ but without conspicuous longer differentiated verticils; from the length of the antennæ it seems virtually certain that the type is a male. Head brown, the center of vertex with a narrow darker vitta; anterior vertex wide.

Mesonotum uniformly dark brown, without markings, only the humeral region of præscutum vaguely brightened. Pleura chiefly testaceous-yellow, the propleura, ventral sternopleurite, and meron abruptly dark brown; pleurotergite dark. Halteres elongate, dark brown, the base of stem restrictedly pale. Legs with the fore coxæ darkened, remaining coxæ and all trochanters yellow; femora brownish yellow, the tips very narrowly to scarcely darkened; tibiæ snowy white, the tips very narrowly darkened; tarsi white. Wings (Plate 1, fig. 4) with a weak brown tinge, the tip darker; stigma oval, dark brown, preceded and followed by extensive whitish areas; cord vaguely clouded with darker; veins dark brown. Restricted macrotrichia in cells at wing tip, including R_3 to $2d M_2$. Venation: Sc_2 ending just before fork of R_s ; free tip of Sc_2 a short distance before level of R_2 but with no trace of R_{1+2} ; R_s arcuated, longer than R_{2+3} ; vein M before $m-cu$ strongly arcuated; $m-cu$ more than one-half its length before the fork of M ; cell $2d A$ narrow.

Abdomen broken at midlength; dark brown, tergite 2 with a conspicuous whitened area on sides at near midlength; basal sternites brownish black, narrowly ringed with whitish.

Habitat.—China (Kwangtung).

Holotype, Sex?, Tai-yong, altitude 2,075 feet, August 6, 1936 (*Gressitt*).

The nearest described ally of the present fly is *Dolichopeza* (*Nesopeza*) *pallidithorax* de Meijere (Java), which is similarly a small species having macrotrichia in the distal wing cells. The present fly differs in the coloration of the body and legs and in the details of venation, as the shorter, more arcuated R_s and the position of $m-cu$ closer to the fork of M .

LIMONIINÆ

LIMONIINI

LIMONIA (DICRANOMYIA) PACIFERA sp. nov. Plate 1, fig. 5; Plate 2, fig. 25.

Belongs to the *morio* group; size very small (wing, male, 4 millimeters or less); abdomen bicolorous, the segments brownish black basally, with narrower yellow caudal margins; male hypo-

pygium with the tergal lobes broad; apex of dorsal dististyle simple and acute; ventral dististyle compressed, mitten-shaped; mesal-apical lobe of gonapophysis short and stout.

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

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

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval, strongly narrowed to short-petiolate at the distal end, the verticils considerably longer than the segments. Front and anterior vertex brilliant silvery white; posterior portions of head black; anterior vertex broad, exceeding three times the diameter of the scape.

Pronotum black, heavily light gray pruinose. Mesonotum polished black, the median area of scutum and base of scutellum weakly dusted. Pleura heavily dusted with gray, the sternopleurite polished black. Halteres with the stem obscure yellow, the knob black. Legs with the fore and middle coxæ black, posterior coxæ obscure yellow; trochanters yellow; femora brown, the fore pair darker, brownish black; tibiæ brown; tarsi passing into black. Wings (Plate 1, fig. 5) with a strong brownish tinge, the prearcular and costal portions somewhat more yellowish, best indicated by a brightening of the veins in these fields; stigma oval, darker brown than the ground; veins brown, except as above indicated. Venation: Sc_1 ending opposite or just before origin of R_s , Sc_2 far from its tip; free tip of Sc_2 opposite R_2 , or as figured for the holotype specimen, lying a short distance proximad and with a short spur of R_{1+2} preserved; m-cu oblique, at or close to fork of M.

Abdomen chiefly bicolorous, yellow, the bases of the segments extensively brownish black, broader and more extensive on the intermediate segments; hypopygium of male and subterminal segments in female black. Male hypopygium (Plate 2, fig. 25) with the tergite, $9t$, deeply emarginate, the lateral lobes broad, only a little narrower than the median notch; apices of lobes with long coarse setæ. Dorsal dististyle, dd , with the apex simple, acute. Ventral dististyle, vd , small, compressed, mitten-shaped, gradually narrowed to the apex; in the unique male, on slide mount, there appears to be a small peglike spine on outer margin before apex (as figured). Gonapophysis, g , with mesal-apical lobe blackened, short and stout.

Habitat.—China (Kwangtung, Kiangsi).

Holotype, male, Tsin-leong-san, Kwangtung, altitude 2,750 feet, June 6, 1936 (*Gressitt*). Allotype, female, Hong San, Kiangsi,

altitude 3,400 feet, June 29, 1936. Paratopotype, female, with the holotype, altitude 2,800 feet, June 5, 1936.

This fly is readily told from other described members of the *morio* group by the small size and structure of the male hypopygium, especially the broad tergal lobes, simple apex of the dorsal dististyle and short apical lobe of gonapophysis. As indicated, I am not entirely certain that a rostral spine is present; if so, it is much smaller than usual and lies far distad.

LIMONIA (DICRANOMYIA) DEPAUPERATA (Alexander).

Dicranomyia depauperata ALEXANDER, Entomological Magazine, Kyoto, Japan 3 (1919) 122.

Wide-spread in eastern Asia. Hong San, Kiangsi, altitude 5,000 feet, June 23, 1936 (*Gressitt*). In different specimens from various parts of the range of this fly there is some variation in the relative lengths of the rostral spines of the male hypopygium.

LIMONIA (DICRANOMYIA) SORDIDA (Brunetti).

Dicranomyia sordida BRUNETTI, Fauna Brit. India, Dipt. Nematocera (1912) 382-384.

Widely distributed in southern and eastern Asia. Males and females, Tsin-leong-san, Kwangtung, altitude 2,115 to 2,750 feet, June 3 and 4, 1936 (*Gressitt*). Hong San, Kiangsi, altitude 3,400 to 3,500 feet, June 29, 1936 (*Gressitt*).

LIMONIA (DICRANOMYIA) FULLAWAYI (Alexander).

Dicranomyia fullawayi ALEXANDER, Canad. Ent. 47 (1915) 79, 80.

Widely distributed in eastern Asia, as far west as Szechwan, western China. Males, Hong San, Kiangsi, altitude 2,500 feet, July 15, 1936 (*Gressitt*).

LIMONIA (DICRANOMYIA) RECTIDENS Alexander.

Limonia (Dicranomyia) rectidens ALEXANDER, Philip. Journ. Sci. 54 (1934) 323, 324.

Known hitherto only from western China. One male, Hong San, Kiangsi, altitude 2,750 feet, June 24, 1936 (*Gressitt*).

LIMONIA (THRYPTICOMYIA) UNISSETOSA Alexander.

Thrypticomomyia arcuata ALEXANDER, Trans. American Ent. Soc. 46 (1920) 4 (name preoccupied).

Limonia (Thrypticomomyia) unisetosa ALEXANDER, Philip. Journ. Sci. 40 (1929) 248.

Widely distributed in Japan and Formosa. One male, Yim-na-san, Kwangtung, altitude 1,800 feet, June 14, 1936 (*Gressitt*).

LIMONIA (EUGLOCHINA) DIGNITOSA Alexander.

Limonia (Euglochina) dignitosa ALEXANDER, Philip. Journ. Sci. 44 (1931) 351.

Known only from Szechwan, western China. One male, Tai-au-hong, Kiangsi, altitude 1,725 feet, July 6, 1936 (*Gressitt*). One female, Hong San, Kiangsi, altitude 3,500 feet, June 29, 1936 (*Gressitt*).

Differs from the type material chiefly in the shorter, more quadrate cell 1st M_2 . In all specimens vein Cu_2 is well-preserved, approximately equal in length to vein Sc.

LIMONIA (ALEXANDRIARIA) ATAYAL Alexander.

Limonia (Alexandriaria) atayal ALEXANDER, Philip. Journ. Sci. 40 (1929) 529.

Described from Formosa. One female, Liung-chon-san, Fu-kien, altitude 2,550 feet, July 20, 1936 (*Gressitt*).

LIMONIA (RHIPIDIA) TRIARMATA Alexander.

Limonia (Rhipidia) triarmata ALEXANDER, Philip. Journ. Sci. 43 (1930) 514, 515.

Known from Formosa and western China. Males and females, Hong San, Kiangsi, altitude 3,400 feet, June 29, 1936 (*Gressitt*).

LIMONIA (GERANOMYIA) SPARSIGUTTATA sp. nov. Plate 1, fig. 6; Plate 2, fig. 26.

General coloration brown, the præscutum with three somewhat darker stripes; pleura yellow, with an ill-defined brown longitudinal stripe; wings weakly tinged with gray, sparsely patterned with brown, including very small spots at the supernumerary crossvein in cell Sc, origin of R_s and fork of Sc; larger clouds at stigma and tip of vein R_3 ; cell 1st M_2 subequal in length to longest vein beyond it; m-cu shortly before fork of M; male hypopygium with the rostral spines of ventral dististyle short, straight, arising from a common tubercle.

Male.—Length, excluding rostrum, about 4.3 millimeters; wing, 5; rostrum, 2.

Rostrum about one-half the length of body, brownish black. Antennæ with scape and pedicel black; flagellum broken. Head black; posterior vertex with a narrow median silvery vitta.

Pronotum yellow, darkened laterally. Mesonotal præscutum with a broad, central, medium brown stripe and less distinct lateral vittæ, these stripes faintly differentiated by very slightly darker posterior interspaces; median stripe narrower at anterior end than behind, on its cephalic margin with indications

of a capillary dark vitta; scutum testaceous medially, the lobes brown; scutellum brown, the caudal margin slightly yellow; a very delicate, median, dark vitta occupies the scutum and base of scutellum; postnotum darker brown, the mediotergite with a very sparse bloom. Pleura yellow, with an ill-defined brown longitudinal stripe extending from the cervical region to the base of abdomen, becoming wider on the pleurotergite. Halteres darkened, the base of stem yellow. Legs with the coxæ and trochanters yellow; remainder of legs brown, darker outwardly. Wings (Plate 1, fig. 6) with a weak grayish tinge, very sparsely patterned with pale brown, including the stigma; very small spots at the supernumerary crossvein in cell Sc, origin of Rs, fork of Sc, and tip of vein R₃; posterior cord and outer end of cell 1st M₂ very narrowly and insensibly seamed; veins pale brown. Venation: Sc long, Sc₁ ending only a short distance before outer end of Rs, Sc₂ at its tip; free tip of Sc₂ and R₂ in transverse alignment; cell 1st M₂ long, equal to vein M₁₊₂ beyond it; m-cu a short distance before fork of M.

Abdominal tergites dark brown; basal sternites light yellow. Male hypopygium (Plate 2, fig. 26) with the caudal margin of the tergite, 9t, gently emarginate. Ventral dististyle, *vd*, elongate, much more extensive than the basistyle, *b*; rostral prolongation unusually short and deep, with two short straight spines arising from a small common tubercle, one from the summit, the other near the base of tubercle. Gonapophysis, *g*, with mesal-apical lobe acute at tip, the lateral margin microscopically serrulate.

Habitat.—China (Fukien).

Holotype, male, Liung-chon-san, altitude 2,550 feet, July 21, 1936 (*Gressitt*).

Limonia (*Geranomyia*) *sparsiguttata* is most closely related to *L. (G.) kiangsiana* Alexander (northern Kiangsi, China), differing especially in the coloration of the body and wings and in the details of structure of the male hypopygium, as the beak of the rostral prolongation.

LIMONIA (GERANOMYIA) SPECTATA sp. nov. Plate 1, fig. 7.

General coloration of mesonotum plumbeous-gray, the posterior interspaces of præscutum and the scutal lobes with more blackish lines; femora dark brown, the bases and tips restrictedly paler; wings with a brown tinge, restrictedly patterned with darker brown, including a series of five costal areas; dark

spot at fork of Sc close to that at origin of Rs, the distance between the two not much greater than the diameter of either; Sc relatively short, Sc₁ ending nearly opposite midlength of Rs; cell 2d A of moderate width.

Female.—Length, excluding rostrum, about 7 millimeters; wing, 7; rostrum, about 2.8.

Rostrum black, relatively short. Antennæ black throughout; flagellar segments subglobular to short-oval, with inconspicuous verticils. Head blackish, variegated medially with gray.

Mesonotal præscutum almost uniform plumbeous-gray, with scarcely evident markings; in certain lights the posterior interspaces appear as slightly blackened lines, as in *atrostriata* and *kiangsiana*; scutum similarly plumbeous, each lobe with a linear black line near mesal edge and a shorter dark dash near lateral portion; posterior sclerites of notum dark plumbeous-gray, the ventral sclerites a little paler. Halteres with stem brownish yellow, the knob darker. Legs with the coxæ and trochanters obscure yellow; femora dark brown, the bases restrictedly obscure yellow, the tips narrowly and vaguely pale; tibiæ and tarsi brownish yellow, the outer tarsal segments darker. Wings (Plate 1, fig. 7) with a brownish tinge, restrictedly patterned with darker brown, as follows: Supernumerary crossvein in cell Sc; origin of Rs and fork of Sc; stigma and end of vein R₃; cord and outer end of cell 1st M₂ more narrowly seamed with brown; dark areas in costal cell more distinct than in *subradialis*, that at fork of Sc closer to Rs than to the stigma; veins pale brown, somewhat darker in the clouded areas. Venation: Sc relatively short, Sc₁ ending opposite or just beyond midlength of Rs; cell 1st M₂ about equal in length to vein M₁₊₂ beyond it; m-cu at fork of M; cell 2d A of moderate width.

Abdomen dark brown, sparsely pruinose; caudal margins of the intermediate tergites vaguely paler.

Habitat.—China (Kwangtung).

Holotype, female, Tsin-leong-san, altitude 2,750 feet, June 3, 1936 (*Gressitt*).

The nearest allied species is *Limonia* (*Geranomyia*) *kiangsiana* Alexander (northern Kiangsi, China), which is generally similar in coloration of the body and wings, differing in the venation and arrangement of the dark costal areas, with the spot at fork of Sc lying farther distad, shortly before the outer end of Rs.

LIMONIA (GERANOMYIA) FREMIDA sp. nov.

General coloration of præscutum reddish, with three conspicuous brownish black stripes, the interspaces pale; head brownish black, the front and vertex with a narrow silvery median vitta; femora obscure yellow to brownish yellow; wings pale yellow, with brown areas, including about six costal markings; base of cell R darkened; conspicuous dark seams along cord and outer end of cell 1st M_2 ; m-cu at fork of M; cell 1st M_2 somewhat longer than vein M_{1+2} beyond it; abdomen with intermediate tergites brownish yellow, the outer segments darker.

Female.—Length, excluding rostrum, about 8 millimeters; wing, 7; rostrum, about 3.

Rostrum black, the divergent tips of the labial palpi short. Antennæ black, the scape brown, sparsely pruinose; flagellar segments oval to subcylindrical, with inconspicuous verticils. Head with front, anterior vertex, and a narrow median vitta on posterior vertex silvery, the remainder of posterior vertex brownish black.

Pronotum dark brown, the scutellum obscure yellow medially. Mesonotal præscutum with the ground color reddish, with three conspicuous brownish black stripes, the median one narrow and nearly obsolete in front, becoming obsolete before suture; interspaces of the ground color; scutal lobes brownish black, the remainder of scutum obscure reddish brown; scutellum reddish brown, darker medially at base; postnotum brownish black, heavily gray pruinose. Pleura chiefly obscure brownish yellow, the dorsal and posterior pleurites somewhat darker. Halteres with a weak tinge, the base of stem restrictedly pale. Legs with the coxæ and trochanters pale yellow; femora obscure yellow to brownish yellow; tibiæ and tarsi pale brown to darker brown, the outer segments of the latter black. Wings with the ground color pale yellow, rather heavily variegated with brown, as follows: about six costal and subcostal areas, the first near arculus in cell Sc and base of R; second at supernumerary cross-vein in cell Sc, large and circular in outlines, reaching the costal vein in front and nearly to vein M behind; third area at origin of Rs, extending from vein C almost to vein M, somewhat wider behind; fourth area at fork of Sc; fifth area stigmal; sixth marking at end of vein R_3 ; broad dark seams along cord and outer end of cell 1st M_2 ; a small spot near basal third of cell R_3 immediately behind the stigma and a small interpolated

area in cell C between the second and third major costal darkenings; veins yellowish brown, darker in the clouded areas. Venation: Sc_1 ending about opposite three-fourths the length of Rs, Sc_2 at its tip; m-cu at fork of M; cell 1st M_2 somewhat longer than vein M_{1+2} beyond it.

Abdomen with the basal segment dark brown, the succeeding tergites brownish yellow, at near midlength of the organ passing into dark brown; basal sternites yellow, darker on sides; subterminal segments dark.

Habitat.—China (Kwangtung).

Holotype, female, Tsin-leong-san, altitude 2,750 feet, June 3, 1936 (*Gressitt*).

Limonia (Geranomyia) fremida somewhat resembles *L. (G.) subradialis* sp. nov., differing in the pattern of the wings and general coloration of the body. The wing pattern is much as in *L. (G.) spectata* sp. nov., but the coloration of the thorax is quite different. The darkening in the base of cell R is not found in the species listed above.

LIMONIA (GERANOMYIA) SUBRADIALIS sp. nov. Plate 1, fig. 8; Plate 2, fig. 27.

General coloration of præscutum reddish brown, with three brownish black stripes; head dark gray, with a median silvery gray stripe; knobs of halteres weakly darkened; legs yellow, the tips of femora and tibiæ narrowly darkened; wings yellowish gray, with a very restricted brown pattern, chiefly costal in distribution; Sc long, Sc_1 ending about opposite five-sixths the length of Rs; m-cu at fork of M; male hypopygium with the ninth tergite deeply notched medially; rostral prolongation of ventral dististyle compressed, at base laterally with two strong black spines from conspicuous basal tubercles; gonapophyses with mesal-apical lobe elongate.

Male.—Length, excluding rostrum, about 6 to 6.2 millimeters; wing, 6 to 6.3; rostrum, about 2.7 to 2.9.

Female.—Length, excluding rostrum, about 7 millimeters; wing, 6.9 to 7; rostrum, about 2.2 to 2.3.

Rostrum black throughout, shorter in female than in male, the recurved tips of the labial palpi short and inconspicuous in the female, somewhat longer in the male. Antennæ black throughout. Anterior vertex and a central vitta on posterior vertex narrowly silvery, the remainder dark gray.

Pronotum dark brown medially, paler on sides. Mesonotal præscutum reddish brown, with three brownish black stripes, the median one narrowed in front and not quite attaining the

cephalic portion of the sclerite; surface of præscutum weakly pruinose, especially behind; scutal lobes darkened, the median area dark but restrictedly pale on either side of the midline; scutellum dark brown medially at base, broadly brownish yellow on margin; postnotum heavily gray pruinose. Pleura chiefly obscure yellow, the surface more or less pruinose, especially on the pteropleurite and pleurotergite, the remainder less distinctly so; sternopleurite chiefly pale. Halteres pale, the knobs weakly darkened. Legs with the coxæ and trochanters pale; remainder of legs yellow, the femora and tibiæ with apices narrowly darkened; terminal tarsal segments black. Wings (Plate 1, fig. 8) yellowish gray, with a very restricted brown pattern, distributed as follows: At h; supernumerary crossvein in cell Sc; origin and fork of Rs; fork of Sc; stigma; tip of vein R_3 , the areas much smaller than the interspaces; cord and outer end of cell 1st M_2 very narrowly seamed with brown; veins yellow, darker in the infuscated areas. Costal fringe of male relatively long and conspicuous, of female shorter. Venation: Sc long, Sc_1 ending opposite five-sixths the length of Rs, Sc_2 at its tip; cell 1st M_2 subequal to vein M_{1+2} beyond it; m-cu at fork of M.

Abdominal tergites and hypopygium brown, the basal sternites yellow. Male hypopygium (Plate 2, fig. 27) with the ninth tergite, 9t, deeply notched medially. Dorsal dististyle, *dd*, a nearly straight rod, the tip strongly curved. Ventral dististyle, *vd*, large and fleshy; rostral prolongation yellow, compressed, pendant; rostral spines placed on side of prolongation at base, each from a strong basal tubercle, the outer tubercle a little smaller. Gonapophyses, *g*, with mesal-apical lobe elongate.

Habitat.—China (Kwangtung).

Holotype, male, Tsin-leong-san, altitude 2,115 feet, June 2, 1936 (*Gressitt*). Allotopotype, female, altitude 2,750 feet, June 3, 1936. Paratopotypes, several of both sexes, altitude 2,700 to 2,800 feet, June 2 to 3, 1936.

Limonia (Geranomyia) subradialis is most nearly allied to *L. (G.) radialis* Alexander, differing most conspicuously in the very different male hypopygium, notably the gonapophyses.

LIMONIA (GERANOMYIA) TENUISPINOSA Alexander.

Limonia (Geranomyia) tenuispinosa ALEXANDER, Philip. Journ. Sci. 40 (1929) 329, 330.

Described from Chekiang Province, eastern China. Male, Yim-na-san, Kwangtung, altitude 2,115 feet, June 15, 1936 (*Gres-*

sitt). Female, Hong San, Kiangsi, altitude 2,750 feet, June 24, 1936 (Gressitt). Male, Liung-chon-san, Fukien, altitude 2,550 feet, July 21, 1936 (Gressitt).

LIMONIA (GERANOMYIA) APICIFASCIATA Alexander.

Limonia (Geranomyia) apicifasciata ALEXANDER, Philip. Journ. Sci. 43 (1930) 516, 517.

Described from Formosa. Males, Tsin-leong-san, Kwangtung, altitude 2,750 to 2,800 feet, June 3 and 4, 1936 (Gressitt).

LIMONIA (GERANOMYIA) GRACILISPINOSA sp. nov. Plate 1, fig. 9; Plate 2, fig. 28.

Size small (wing, male, 4.5 millimeters); general coloration plumbeous gray, the præscutum with three darker gray stripes; rostrum elongate, approximately one-half the remainder of body; knobs of halteres dark brown; legs brownish black, the femoral bases obscure yellow; wings subhyaline, the stigma oval, brown; Sc long, Sc₁ ending shortly before fork of Rs; cell 1st M₂ long, about equal to the longest vein beyond it; m-cu about one-third its length before fork of M; abdomen brownish black to black, the basal sternites yellow; male hypopygium with the rostral spines very long, arising from a long common tubercle, one placed at summit of tubercle, the other on the face at near three-fourths the length.

Male.—Length, excluding rostrum, about 4 millimeters; wing, 4.5; rostrum, about 2.

Rostrum elongate, black; tips of labial palpi long, curved; palpi black. Antennæ black throughout; flagellar segments oval, the outer ones not lengthened; terminal segment subequal to the penultimate, pointed at tip; verticils appressed, relatively short and inconspicuous. Head black, pruinose, compressed and distorted in the unique type.

Mesonotum dark plumbeous gray, the præscutum with three darker gray stripes, the scutal lobes with similarly darkened centers. Pleura gray pruinous. Halteres with stem yellow, knob dark brown. Legs with the fore coxæ black, sparsely pruinose; remaining coxæ and all trochanters yellow; remainder of legs brownish black, the femoral bases obscure yellow. Wings (Plate 1, fig. 9) subhyaline or very faintly tinged with darker, unmarked except for the oval brown stigma; cell Sc uniformly infumed; veins brown. Venation: Sc long, Sc₁ ending shortly before fork of Rs, Sc₂ at its tip; free tip of Sc₂ and R₂ nearly in transverse alignment; cell 1st M₂ long, about equal to the longest vein beyond it; m-cu about one-third its length before the fork of M.

Abdominal tergites brownish black to black; basal sternites yellow; outer segments, including hypopygium, uniformly darkened. Male hypopygium (Plate 2, fig. 28) with the caudal margin of the tergite, 9t, gently emarginate. Dorsal dististyle, *dd*, a slender, strongly curved rod, the tip acute. Ventral dististyle, *vd*, relatively long and narrow, its area much exceeding that of basistyle; rostral prolongation slender, before apex bearing a very long cylindrical tubercle that terminates in two long black spines, one arising from summit of tubercle, the other on face at near three-fourths the length. Gonapophyses, *g*, with the mesal-apical lobe long and slender, acute, the area of curvature bearing a pale flange.

Habitat.—China (Kwangtung).

Holotype, male. Tsin-leong-san, altitude 2,750 feet, June 4, 1936 (*Gressitt*).

Limonia (Geranomyia) gracilispinosa is very distinct from other species with unpatterned wings in the gray coloration of the body and especially in the very distinct structure of the male hypopygium. The latter organ is most generally similar to that of *L. (G.) apicifasciata* Alexander, which is otherwise an entirely different fly.

LIMONIA (GERANOMYIA) CONTRITA sp. nov. Plate 1, fig. 10.

General coloration dark brown, the præscutum with three confluent brown stripes, the lateral portions obscure yellow; wings uniformly tinged with brown, unmarked except for the oval darker brown stigma; Sc long, Sc₁ ending about opposite four-fifths the length of Rs; basal section of R₄₊₅ short, not exceeding one-third the length of Rs; cell 2d A narrow; abdominal tergites dark brown.

Female.—Length, excluding rostrum, about 6 millimeters; wing, 6.2; rostrum, about 2.1.

Rostrum relatively short, black throughout. Antennæ black throughout; flagellar segments oval to subcylindrical, with inconspicuous verticils. Head with front, anterior vertex, and a median line on posterior vertex silvery, the remainder of vertex blackish, the sides more pruinose.

Pronotum conspicuously whitened. Mesonotal præscutum obscure yellow, chiefly covered by three confluent dark-brown stripes, the ground restricted to the broad humeral and lateral portions; posterior sclerites of notum darkened. Pleura chiefly pale, distorted in type. Halteres dusky. Legs with the coxæ and trochanters yellow; remainder of legs dark brown. Wings

(Plate 1, fig. 10) uniformly tinged with brown, unmarked except for the oval, darker brown stigma; veins dark brown. Venation: Sc long, Sc₁ ending about opposite four-fifths the length of Rs, Sc₂ at its tip; basal section of R₄₊₅ short, not exceeding one-third Rs; cell 2nd A narrow.

Abdominal tergites dark brown, the basal sternites more yellowish.

Habitat.—China (Kwangtung).

Holotype, female, Tsin-leong-san, altitude 2,750 feet, June 6, 1936 (*Gressitt*).

The most similar regional species is *Limonia* (*Geranomyia*) *fletcheri* (Edwards), wide-spread in eastern and southern Asia. This latter fly has the coloration of the wings and body much the same but is entirely distinct in the venation, as the shorter Sc, ending at or near two-thirds the length of Rs; long basal section of vein R₄₊₅, which is one-half or more the length of Rs, and in the broad cell 2d A. The stigmal area in *fletcheri* is much smaller than in the present fly.

LIMONIA (LIMONIA) MACHIDAI (Alexander).

Dicranomyia machidai ALEXANDER, Ann. Ent. Soc. America 14 (1921) 113.

Limnobia pusilla LACKSCHEWITZ, Ann. Naturh. Mus. Wien 42 (1928) 232, 233.

Very widely distributed in temperate Eurasia. One male, Hong San, Kiangsi, altitude 2,800 feet, June 30, 1936 (*Gressitt*).

LIMONIA (LIBNOTES) HASSENANA Alexander.

Limonia (*Libnotes*) *hassenana* ALEXANDER, Philip. Journ. Sci. 43 (1930) 514.

Known hitherto only from Hassensan, Formosa, at moderate altitudes. Two females, Hong San, Kiangsi, altitude 2,750 to 5,100 feet, June 23 to 30, 1936 (*Gressitt*).

ANTOCHA (ANTOCHA) BIFIDA Alexander.

Antocha (*Antocha*) *bifida* ALEXANDER, Philip. Journ. Sci. 24 (1924) 564-566.

One of the most widely distributed of all known members of the genus, occurring throughout the major islands of Japan, in Formosa and in China as far west as Szechwan. To this date it had not been recorded from eastern China. Several specimens, Yim-na-san, Kwangtung, altitude 1,800 feet, June 11 to 14, 1936 (*Gressitt*).

HELIUS (HELIUS) HÆMORRHOIDALIS sp. nov. Plate 1, fig. 11; Plate 2, fig. 29.

General coloration reddish brown; rostrum about equal in length to remainder of head; antennæ short, black; head light gray, anterior vertex narrow; knobs of halteres orange; legs long and slender, femora brownish yellow; tibiæ and tarsi yellow; wings grayish subhyaline, the wing tip distinctly infumed; stigma oval, dark brown; branches of Rs divergent, cell R_2 at margin about one half as extensive as cell R_3 ; m-cu at or close to fork of M; abdominal tergites and hypopygium orange, sternites strikingly bicolorous, black, with about the distal third of the segments orange; male hypopygium with the outer dististyle bearing two erect spines on outer margin before apex to produce a tridentate appearance.

Male.—Length, about 6 to 6.5 millimeters; wing, 5 to 6.

Female.—Length, about 6.5 millimeters; wing, 6.

Rostrum piceous, subequal in length to remainder of head; palpi black. Antennæ short, only about as long as the head, black throughout; flagellar segments subglobular, the outer segments more elongate. Head light gray; anterior vertex in both sexes reduced to a linear strip that is only about one-half as wide as the diameter of the scape.

Pronotum brown medially, paler on sides. Mesonotum chiefly reddish brown, the præscutum darker medially. Pleura reddish, the sternopleurite and anepisternum more darkened. Halteres dusky, the knobs orange. Legs with the coxæ reddish brown; trochanters obscure yellow; remainder of legs long and slender; femora brownish yellow, a little darker outwardly; tibiæ and tarsi yellow. Wings (Plate 1, fig. 11) grayish subhyaline, the tip distinctly infumed; stigma oval, dark brown; prearcular and costal regions clearer yellow; veins brown, more luteous in the yellow portions. Costal fringe relatively short. Venation: Sc long, Sc_1 ending a short distance before outer end of Rs, Sc_2 near its tip; branches of Rs divergent, cell R_2 at margin only about one-half as extensive as cell R_3 ; m-cu at or shortly beyond fork of M.

Abdominal tergites and hypopygium orange; sternites strikingly bicolored, black, with about the distal third of the individual segments abruptly orange. Male hypopygium (Plate 2, fig. 29) with the basistyle, *b*, unmodified. Outer dististyle, *od*, relatively short and stout, at apex produced into a decurved spine; before tip on outer margin with two erect spines or

with a single strongly bifid one. Inner dististyle, *id*, longer, moderately dilated at base. Gonapophyses, *g*, appearing as very flattened compressed plates, the tips broadly obtuse. Ovipositor with elongate valves.

Habitat.—China (Kiangsi, Fukien).

Holotype, male, Tai-au-hong, Kiangsi, altitude 1,720 feet, July 4, 1936 (*Gressitt*). Allotopotype, female, July 6, 1936, pinned with broken male paratopotype. Paratypes, male, Gang-keu, Fukien, altitude 1,900 feet, July 24, 1936; male, Wong-sa-shue, Kiangsi, altitude 1,750 feet, July 9, 1936 (*Gressitt*).

This very distinct species somewhat resembles *Helius* (*Helius*) *anæmicus* Alexander, but is very different from all species hitherto described. The coloration of the abdominal sternites and the structure of the outer dististyle of the male hypopygium are distinctive features.

HELIUS (HELIUS) ACIFERUS sp. nov. Plate 1, fig. 12; Plate 2, fig. 30.

General coloration of mesonotal præscutum reddish brown, with a darker brown median stripe; antennæ (male) elongate, nearly as long as the body; posterior sclerites of mesonotum and the pleura darkened; knobs of halteres dark brown; wings tinged with dusky, stigma dark brown; small darkened clouds at origin of Rs and along cord; male hypopygium with the basistyle bearing two lobes on mesal face; outer dististyle a blackened rod, at apex produced into a simple acute point.

Male.—Length, about 5 to 5.5 millimeters; wing, 5 to 5.8; antenna, about 5.

Female.—Length, about 7 to 7.5 millimeters; wing, 6 to 6.2.

Rostrum black, about equal in length to remainder of head; palpi black. Antennæ (male) unusually elongate, nearly as long as the entire body, black throughout; flagellar segments long-cylindrical, with a dense erect pubescence. Head dark gray; anterior vertex narrow.

Pronotum dark brown. Mesonotal præscutum reddish brown with a darker brown median stripe; lateral stripes only feebly indicated; posterior sclerites of notum brownish black to black, the median scutal area a little brightened. Pleura extensively dark brown to brownish black. Halteres with the stem yellow, the knob dark brown. Legs with the fore coxæ darkened, the remaining coxæ testaceous to yellow; trochanters yellow; remainder of legs yellow. Wings (Plate 1, fig. 12) relatively narrow, tinged with dusky; stigma oval, relatively dark brown; a small dark cloud at origin of Rs and a similarly darkened

seam along cord; veins brown. Venation: Sc long, Sc₁ ending nearly opposite fork of Rs, Sc₂ at its tip; Rs relatively elongate, in cases angulated and short-spurred at origin; anterior branch of Rs long, only feebly diverging from the posterior branch; cell R₂ at margin more extensive than cell R₃; m-cu variable in position, from opposite the fork of M to about one-half its length beyond this fork.

Abdomen dark brown, the sternites concolorous or somewhat paler yellowish brown, the segments unicolorous. Male hypopygium (Plate 2, fig. 30) with the basistyle, *b*, complicated by outgrowths on mesal face, including a slender lobe tufted with long setæ placed at near midlength of style and a stouter, more distal lobe that terminates in a few short spines. Outer dististyle, *od*, blackened, gently curved, gradually narrowed to the simple acute point. Inner dististyle, *id*, pale, broad at base, the lower margin with several strong setæ. Ovipositor with elongate valves.

Habitat.—China (Kiangsi).

Holotype, male, Tai-au-hong, altitude 1,700 feet, July 5, 1936 (*Gressitt*). Allotype, female, Hong San, altitude 3,400 feet, June 29, 1936. Paratypes, one male, two females, with the allotype, altitude 2,725 to 3,400 feet, June 29 to 30, 1936 (*Gressitt*).

The nearest allied regional species is *Helius (Helius) obliteratus* Alexander, of Japan, which has similarly elongate antennæ in the male sex and with the wing venation and pattern approximately the same but which differs very conspicuously in the structure of the male hypopygium.

ORIMARGA (ORIMARGA) EXASPERATA sp. nov. Plate 1, fig. 13; Plate 2, fig. 31.

General coloration blackish, sparsely pruinose; halteres dusky; legs black; wings very broad, slightly tinged with dusky, the short prearcular area whitish; sparse macrotrichia on outer ends of veins R₃, R₄₊₅, M₁₊₂, and M₃; free tip of Sc₂ lacking; R₂₊₃ short, subequal in length to R₂; cephalic end of m-cu just beyond midlength of Rs; vein 2d A elongate; male hypopygium with the phallosome broad, its apex without spinous points.

Male.—Length, about 6.5 millimeters; wing, 5.

Rostrum black, sparsely pruinose; palpi black. Antennæ black throughout; flagellar segments oval; verticils inconspicuous. Head blackish gray.

Mesonotum blackish, with a sparse gray pruinosity, the præscutum with three poorly defined still darker stripes. Pleura black, sparsely pruinose. Halteres dusky. Legs with the coxæ

and trochanters brownish black to dark brown; remainder of legs black, the femoral bases a trifle paler. Wings (Plate 1, fig. 13) very broad, with a slight dusky tinge, the short prearcular area whitish; veins brown. Costal fringe of moderate length; outer portion of costal vein incrassated. Macrotrichia of veins beyond cord restricted, there being a loose series of about eight on R_3 , and from ten to twelve on outer ends of veins R_{4+5} , M_{1+2} , and M_3 , these latter chiefly arranged in pairs. Venation: Free tip of Sc_2 lacking; R_{2+3} short subequal to R_2 ; basal section of R_{4+5} strongly angulated before midlength; cephalic end of m-cu just beyond midlength of Rs; vein 2d A elongate.

Abdomen black, the sternites a trifle paler; hypopygium somewhat brightened. Male hypopygium (Plate 2, fig. 31) with the outer dististyle, *od*, unusually stout, at tip suddenly narrowed into a short point. Inner dististyle, *id*, before apex bent into a right angle, the apex slender. Interbase a slender, pale, straight rod. Phallosome, *p*, broad, at apex without conspicuous spinous points as found in *gymnoneura*.

Habitat.—China (Kwangtung).

Holotype, male, Tsin-leong-san, altitude 2,750 feet, June 5, 1936 (*Gressitt*).

Orimarga (Orimarga) exasperata is most similar to *O. (O.) gymnoneura* Alexander, of Formosa, agreeing in the general coloration of the body, legs and wings, and in the conformation of the wings, including the short prearcular field. It differs in the details of venation, especially of the radial field, the more abundant trichia of the outer wing veins, and especially in the structure of the male hypopygium. In *O. (O.) gymnoneura*, just before the apex of the phallosome, there is a group of several sharp spines that are not present in the insect here discussed.

HEXATOMINI

PSEUDOLIMNOPHILA PROJECTA sp. nov. Plate 1, fig. 14.

General coloration medium brown; antennæ black, the outer flagellar segments elongate and provided with long verticils; wings with a uniform pale brown tinge; R_2 before fork of R_{3+4} ; cell M_1 lacking; veins issuing from cell 1st M_2 relatively short; anterior arculus preserved.

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

Rostrum light yellow; palpi black. Antennæ black throughout, relatively long and slender; outer flagellar segments becoming long-cylindrical, with conspicuous verticils; basal fla-

gellar segments with verticils short and inconspicuous. Head dark brown.

Mesonotum almost uniformly medium brown, the scutellum a trifle more testaceous; mediotergite with central portion darkened, the broad lateral margins more brownish yellow. Pleura brownish yellow. Halteres infuscated. Legs with the coxæ and trochanters testaceous yellow; remainder of legs brown, the outer tarsal segments passing into dark brown. Wings (Plate 1, fig. 14) with a uniform pale brown tinge; stigma small, pale brown, scarcely darker than the ground color; veins brown. Costal fringe (male) of moderate length, dense. Venation: Sc of moderate length, Sc₁ ending about opposite four-fifths the length of Rs; R₂₊₃₊₄ rather strongly arcuated; R₂ before the fork of R₃₊₄, the distance somewhat variable in the type specimen, longest in the right wing, as figured; veins issuing from cell 1st M₂ relatively short, the longest not twice the length of the cell; cell M₁ lacking; anterior arculus preserved.

Abdominal tergites dark brown, the sternites more yellowish brown, their caudal margins narrowly yellow; hypopygium chiefly pale brownish yellow.

Habitat.—China (Kwangtung).

Holotype, male, Mei-hsien, altitude 715 feet, July 18, 1936 (*Gressitt*).

Pseudolimnophila projecta is readily told from allied regional species, such as *P. descripta* Alexander (Formosa) by the venation, as the short cell R₃ and the length of the veins beyond cell 1st M₂. In the present fly, Sc is shorter and Rs shorter and more arcuated than in allied forms in which cell M₁ is lacking.

HEXATOMA (ERIOCERA) QUADRIATRATA sp. nov. Plate 1, fig. 15.

Belongs to the *rubescens* group; general coloration of body dark plumbeous-gray, the sides of præscutum and scutum with velvety black areas; trochanters and femora light yellow, the remainder of legs a trifle darker; wings with a strong brown suffusion, the prearcular and costal regions more saturated; stigma small, dark brown; R₁₊₂ and R₂ subequal; R₂₊₃₊₄ and R₂₊₃ in longitudinal alignment and subequal, more than twice as long as the basal section of R₅; cell M₁ about twice its petiole; m-cu at or before midlength of cell 1st M₂.

Female.—Length, about 15 to 16 millimeters; wing, 13 to 13.5.

Rostrum black, sparsely pruinose; palpi black. Antennæ black throughout, 8-segmented (female); flagellar segments

cylindrical, with abundant setæ, those of basal two flagellar segments chiefly unilateral in distribution. Head dark gray; anterior vertex relatively narrow, the low simple tubercle correspondingly narrowed; setæ of head relatively sparse, on posterior portion shortened and reduced in number.

Mesonotum almost uniformly dark plumbeous-gray, the lateral margin of præscutum before suture and of the scutal lobes behind the suture extensively velvety black; mesonotum glabrous. Pleura dark plumbeous-gray; dorsopleural membrane dusky. Halteres dark brown, the extreme base of stem brightened. Legs with the coxæ brownish black; trochanters and femora light yellow; tibiæ and tarsi a trifle more brownish yellow. Wings (Plate 1, fig. 15) with a strong brown suffusion, the prearcular and costal portions more saturated brown; cell Sc a little more yellowish, especially on proximal portion; stigma small and narrow, dark brown; vague, scarcely evident, dark seams along cord and outer end of cell 1st M_2 ; veins darker brown than the ground. Longitudinal veins beyond cord with abundant macrotrichia. Venation: Sc_1 ending nearly opposite fork of R_{2+3+4} ; R_{1+2} and R_2 subequal; R_{2+3+4} and R_{2+3} in longitudinal alignment and subequal in length, either more than twice as long as basal section of R_5 ; cell M_1 deep, from one and one-half to two times its petiole; m-cu at or just before mid-length of cell 1st M_2 .

Abdomen dark plumbeous; dorsal shield of ovipositor deep reddish brown; cerci moderately long, basal half darkened, distal portion more slender, gently upcurved, yellow.

Habitat.—China (Kiangsi).

Holotype, female, Tai-au-hong, altitude 1,725 feet, July 6, 1936 (*Gressitt*). Paratopotype, female, Wong-sa-shue, altitude 1,750 feet, July 9, 1936.

The present fly differs rather conspicuously from other members of the *rubrescens* group in the coloration of the body, wings, and legs, as well as in the details of venation. By Edwards's key to the Old World species of the subgenus² the fly runs to couplet 29 where it can be traced no further, in having the combination of five posterior cells and being equipped with velvety black spots on the sides of the mesonotum.

² Ann. & Mag. Nat. Hist. IX 8 (1921) 70–78.

HEXATOMA (ERIOCERA) DAVIDI (Alexander).

Eriocera davidi ALEXANDER, Bull. Mus. Hist. Nat. Paris 1922 (1922) 295, 296.

One male, Tai-au-hong, Kiangsi, altitude 1,725 feet, July 6, 1936 (*Gressitt*). This specimen has the white discal area of wings much reduced, being narrow and involving cells R, M, and posterior edge of R₁; besides the primary white area, there are several small pale dashes on either side of this fascia. Antennæ (male) 8-segmented; claws toothed.

HEXATOMA (ERIOCERA) OBLIQUA (Alexander).

Eriocera obliqua ALEXANDER, Proc. Hawaiian Ent. Soc. 5 (1923) 255, 256.

Known hitherto only from Macao. One female, Hong San, Kiangsi, altitude 2,500 feet, July 15, 1936 (*Gressitt*). The present specimen agrees closely with the type except that the ground color of the wings is more intensely black and unfaded; Rs a little shorter; basal section of R₅ about one-half longer than R₂₊₃₊₄; Sc a little longer, Sc₁ ending shortly beyond level of fork of R₂₊₃₊₄. Antennæ (female) 11-segmented; claws simple.

HEXATOMA (ERIOCERA) CHRYSOMELA (Edwards).

Eriocera chrysomela EDWARDS, Ann. & Mag. Nat. Hist. IX 8 (1921) 88, 89.

Described from Hong Kong, China. One female, Hong San, Kiangsi, altitude 1,425 feet, July 10, 1936 (*Gressitt*). One female, Liung-chon-san, Fukien, altitude 2,540 feet, July 21, 1936 (*Gressitt*).

ERIOPTERINI

TEUCHOLABIS (TEUCHOLABIS) KIANGSIENSIS sp. nov. Plate 1, fig. 16.

Female.—Length, about 7.5 to 8 millimeters; wing, 5.5 to 6.

Most closely allied to *T. (T.) iriomotensis* Alexander, of the southern Loochoo Islands, differing especially in the patterned wings. The fly differs from *iriomotensis* in the following regards:

Posterior portion of head not pruinose. Median region of præscutum before suture extensively yellow. Sternopleurite not or scarcely darkened. Legs with the tibiæ yellowish brown, narrowly blackened at either end. Wings (Plate 1, fig. 16) distinctly patterned; whitish subhyaline, with brown areas arranged as follows: Cell Sc; a small spot at origin of Rs; stigma

and a broad confluent seam along cord; outer end of cell 1st M_2 similarly seamed; small marginal clouds at end of anterior branch of Rs and of 2d A. Venation: Sc_2 more removed from tip of Sc_1 , placed nearer the origin of Rs than to the tip of Sc_1 . Ovipositor with bases of cerci blackened, only the tips dark horn-colored.

Habitat.—China (Kiangsi).

Holotype, female, Hong San, altitude 2,750 feet, June 24, 1936 (*Gressitt*). Paratopotypes, females, altitude 3,150 feet, June 27, 1936.

GYMNASTES (GYMNASTES) SHIRAKII (Alexander).

Paratropeza (Gymnastes) shirakii ALEXANDER, Ann. Ent. Soc. America 13 (1920) 254.

Described from high altitudes in Formosa. Additional records: Formosa: Urai, April 20, 1922 (*K. Takeuchi*). Southeastern China: Hong San, Kiangsi, altitude 2,750 to 3,500 feet, June 25 to 30, 1936 (*Gressitt*), several specimens.

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

Belongs to the *nubeculosa* group; general coloration dark brown, pruinose; knobs of halteres dark brown; femora brownish yellow, with a broad, brownish black, subterminal ring, preceded and followed by narrow yellowish annuli; wings strongly darkened, variegated by china white and darker brown areas; cells R and M uniformly infumed; Sc_1 and Sc_2 both beyond origin of Rs; vein R_4 short, about one-half as long as R_{2+3+4} ; cell 1st M_2 subequal to vein M_3 beyond it; abdomen brownish black, the segments narrowly ringed caudally with whitish.

Female.—Length, about 5.8 millimeters; wing, 4.2.

Rostrum and palpi black. Antennæ with the scape and pedicel brown on ventral faces, yellow above; flagellum dark brown; flagellar segments with a dense erect white pubescence. Head yellow, the center of the vertex darkened.

Pronotum and lateral pretergites very pale yellow. Mesonotum brownish gray, the posterior margin of scutellum broadly pale yellow. Pleura dark brown, with a conspicuous, white, longitudinal stripe extending from and including the fore coxæ, passing above the remaining coxæ to base of abdomen; dorso-pleural region chiefly yellow. Halteres with stem yellowish white, the knob chiefly dark brown. Legs with the fore coxæ as described above, its extreme base darkened; remaining coxæ brown; trochanters yellow; femora yellow, slightly more brown-

ish yellow outwardly, with a broad brownish black subterminal ring, preceded and followed by narrower yellow rings, each of the latter about one-half as wide as the darkened annulus; tibiæ and basitarsi yellow, outer tarsal segments black. Wings (Plate 1, fig. 17) with the ground color strongly darkened, variegated by china white and darker brown areas; the white includes the prearcular and costal regions, together with the wing tip; cells R and M uniformly of the ground color; dark-brown areas small, at arculus, origin of Rs, stigma, and along cord; more restricted darkenings at tips of veins R_3 , R_4 , R_5 , M_3 , M_4 and Cu_1 ; veins brown, paler in the whitened areas, darker along the cord. Costal fringe unusually long and conspicuous for the female sex. Venation: Sc relatively long, both Sc_1 and Sc_2 lying beyond origin of Rs; R_3 short and erect, about two-thirds as long as m; R_4 short, about one-half the length of R_{2+3+4} ; cell 1st M_2 subequal to vein M_3 beyond it.

Abdomen brownish black, the segments narrowly ringed caudally with whitish, a little more conspicuously so on the tergites. Ovipositor with the basal shield obscure yellow, narrowly darkened at base.

Habitat.—China (Kiangsi).

Holotype, female Wong-sa-shue, altitude 1,750 feet, July 8, 1936 (*Gressitt*).

Related to *Gonomyia* (*Lipophleps*) *conquisita* Alexander, *G. (L.) nubeculosa* de Meijere, and *G. (L.) pallidesignata* Alexander. The various members of the group are separated in the female sex by characters of wing pattern and venation, as to whether the basal cells are variegated on their proximal portions, as in *pallidesignata*; by venation, especially the length of Sc, the relative proportions of veins R_{2+3+4} and R_4 , and the length of cell 1st M_2 , proportional to vein M_3 beyond it. The leg pattern, especially the coloration and width of the darkened femoral rings, furnish important characters; in *conquisita*, this dark annulus is pale and narrow. The present fly differs from the others in the longer Sc, which projects distinctly beyond the origin of Rs.

GONOMYIA (LIPOPHLEPS) SUBANXIA sp. nov. Plate 1, fig. 18; Plate 2, fig. 32.

Belongs to the *skusei* group; general coloration of mesonotum dark brown, the posterior margin of scutellum broadly yellow; head gray; pleurotergite and metapleura chiefly yellowish white; halteres and legs darkened; wings broad, tinged with

dusky, the stigma a little darker; Sc_1 ending beyond midlength of R_s ; abdominal tergites dark brown; male hypopygium with the dististyle fleshy; phallosome pale, the apex of $\text{\ae}deagus$ subacute.

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

Rostrum yellow; palpi black. Antennæ black; flagellar segments cylindrical, with an abundant erect pubescence. Head gray.

Pronotum and anterior lateral pretergites light yellow. Mesonotal præscutum and scutal lobes almost uniformly dark brown, the surface very sparsely pruinose; median area of scutum in front and posterior lateral portions of scutal lobes yellow; scutellum darkened medially at base, the posterior margin broadly obscure yellow; mediotergite brownish black, the anterior lateral margins restrictedly yellow. Pleura chiefly dark brown, the dorsopleural region yellow; pleurotergite and metapleura chiefly pale yellowish white. Halteres dark brown, the extreme base of stem pale, the knob a trifle brightened. Legs brownish black throughout. Wings (Plate 1, fig. 18) broad, with a strong dusky tinge, the elongate stigmal area a little darker; prearcular and costal regions more whitish; veins brown. Venation: Sc long, Sc_1 extending to beyond midlength of R_s , Sc_2 a short distance from its tip; branches of R_s long, the anterior one paralleling R_1 for most of its length; $m-cu$ just before fork of M .

Abdomen dark brown, the sternites and hypopygium a trifle brighter. Male hypopygium (Plate 2, fig. 32) with the outer lobe of basistyle, b , slender; a single dististyle, d , fleshy, nearly equal in size and shape to the lobe of the basistyle. Phallosome, p , complex, without heavily sclerotized or blackened points, the apex of $\text{\ae}deagus$ subacute, gradually narrowed to the tip.

Habitat.—China (Kwangtung).

Holotype, male, Yim-na-san, altitude 2,115 feet, June 15, 1936 (*Gressitt*). Paratopotype, male. Paratype, male, Mei-hsien, altitude 715 feet, May 31, 1936 (*Gressitt*).

The nearest ally is *Gonomyia* (*Lipophleps*) *anxia* Alexander, of western Sumatra, which has the hypopygium of this same general structure. In the latter species the wings are conspicuously narrower, Sc shorter and the apex of the $\text{\ae}deagus$ very narrow, a slender falcate blade. There are several species of the *skusei* group in the Philippines but all of these are more distantly allied. In Japan, Formosa, and China, only a single additional species, *G. (L.) sauteri* Alexander, has been described

to this date, and this is entirely distinct from the present fly in the structure of the male hypopygium.

GONOMYIA (LIPOPHLEPS) ATROX sp. nov. Plate 1, fig. 19; Plate 3, fig. 33.

General coloration blackish gray; head yellow, the central portion of posterior vertex brownish black; pleura black, with a longitudinal yellowish white stripe; knobs of halteres extensively darkened; femora yellow, with a broad brownish black subterminal annulus, preceded and followed by narrow, light yellow rings; wings clouded with brown and pale, the costal border yellow; Sc short; male hypopygium with the outer dististyle a powerful black rod, at base on mesal face with two long, strongly curved, black hooks.

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

Rostrum and palpi black. Antennæ with the scape and pedicel black on lower or ventral face, yellow above; flagellum black, the basal segment brightened. Head light yellow, the central portion of posterior vertex extensively brownish black; postgenæ infuscated.

Pronotum and anterior lateral pretergites light yellow. Mesonotum black, sparsely gray pruinose; scutellum with posterior border obscure yellow. Pleura black, with a relatively narrow, yellowish white, longitudinal stripe, extending from fore coxæ to base of abdomen; dorsal pleurotergite and pteropleurite yellowish brown. Halteres yellow, the knobs extensively darkened. Legs with the fore coxæ obscure yellow, remaining coxæ testaceous brown; trochanters obscure yellow; femora brownish yellow with a broad dark brown or brownish black subterminal annulus, preceded and followed by much narrower, clear yellow rings, the latter at the tip of the segment; tibiæ yellow, the extreme base and tip darkened; tarsi brownish yellow, passing into black. Wings (Plate 1, fig. 19) with the ground color brown, variegated by clearer areas, chiefly before and beyond stigma, before cord and as smaller markings in certain of the other cells; costal border of wing narrowly light yellow; veins pale brown, a little darker in the clouded areas. Venation: Sc relatively short, the distance on costa between Sc₁ and origin of Rs only a little less than the length of the latter; m-cu at fork of M.

Abdomen brownish black, the incisures of the segments pale; hypopygium dark. Male hypopygium (Plate 3, fig. 33) with the outer dististyle, *od*, a powerful black rod, nearly straight, at base on mesal face with two long, strongly curved, black

hooks; mesal face of style at near one-third the length with an acute erect spine; beyond this point the style slightly constricted and the mesal face microscopically roughened. Inner dististyle a small simple lobe, pointed at outer end, provided with long setæ, at apex with two long pale fasciculate bristles. Phallosome, *p*, complex, consisting of a broadly depressed plate, the caudal margin terminating in four short black spinous points, the outer pair from cylindrical lobes. Distad of the phallosome, as figured, lie other massive structures and a strongly curved crook, the end of which is shown.

Habitat.—China (Kiangsi).

Holotype, male, Hong San, altitude 3,000 feet, June 26, 1936 (*Gressitt*).

Gonomyia (Lipophleps) atrox is very distinct from allied regional forms in the structure of the male hypopygium, which is very different from all other species known to me.

IDIOCERA (IDIOCERA) TERANISHII (Alexander).

Gonomyia (Ptilostena) teranishii ALEXANDER, Ann. Ent. Soc. America 14 (1921) 118, 119.

Described from Morioka, Honshiu, Japan. The following Chinese records are now available:

Hang-chow, Chekiang, April 28, 1924 (*Suenson*); Liung-chon-san, Fukien, altitude 2,550 feet, July 20, 1936 (*Gressitt*); Mount Omei, Szechwan, altitude 4,000 feet, July 14, 1931 (*Franck*); Boat on the Min River, Szechwan, April 30, 1933 (*Franck*).

It should be noted that the subgeneric name *Idiocera* has been retained for those species of *Gonomyia* in which the anterior arculus of the wings is entire.

IDIOCERA (PTILOSTENODES) UNIPLAGIATA sp. nov. Plate 1, fig. 20; Plate 3, fig. 34.

Small (wing 4 millimeters or less); posterior vertex polished black; mesonotum black, variegated with yellow on the scutum and scutellum; mediotergite yellow medially, the sides darkened; pleura yellow, with a single major black area on anepisternum; halteres black; legs dark brown to brownish black, the femoral bases narrowly obscure yellow; wings subhyaline, m-cu at or close to fork of M; abdominal tergites black, sternites yellow to brownish yellow.

Male.—Length, about 3.2 to 3.3 millimeters; wing, 3.7 to 3.8.

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

Rostrum yellow; outer palpal segments infuscated. Antennæ with scape obscure yellow; pedicel and flagellum black; flagellar

segments oval, the longest verticils a little exceeding the segments. Head with the front and orbits yellow; anterior vertex infuscated; posterior vertex and occiput polished black.

Pronotum yellow, narrowly infuscated medially. Mesonotal præscutum chiefly covered by a polished black discal area, the humeral region restrictedly pale; scutum polished black on the lobes and across the median area, leaving obscure yellow areas behind the suture and along the posterior borders of the lobes; scutellum black medially, obscure yellow on posterior portion, parascutella black; mediotergite with central portion yellow, the sides darkened; pleurotergite darkened, especially behind. Pleura obscure yellow, with a major black area occupying the anepisternum. Halteres black. Legs with the coxæ obscure yellow, the fore coxæ a trifle darkened; trochanters yellow; remainder of legs dark brown or brownish black, the femoral bases narrowly obscure yellow, somewhat more extensively so on the fore pair; posterior femora slightly paler in color than the middle or fore pairs. Wings (Plate 1, fig. 20) subhyaline or with a faint gray tinge; veins slender, brown. Macrotrichia on all veins beyond cord, on anterior branch of Rs restricted to a central series of about ten, on the distal section of Cu_1 occurring on outer half of vein. Venation: Sc_1 ending opposite or just before origin of Rs, Sc_2 at midlength of the distance between arculus and origin of Rs; anterior branch of Rs bent strongly cephalad at anterior end so cell R_4 at margin is considerably wider than cell R_2 ; m-cu at or immediately before fork of M.

Abdominal tergites black; sternites yellow to brownish yellow; hypopygium yellow. Male hypopygium (Plate 3, fig. 34) with three dististyles; median style, *md*, bifid, with glabrous blades, the stem with abundant setæ; inner style, *id*, a flattened spatulate blade, with coarse setæ. Ædeagus gradually narrowed outwardly, terminating in a slender apical point.

Habitat.—China (Kiangsi).

Holotype, male, Tai-au-hong, altitude 1,700 feet, July 5, 1936 (*Gressitt*). Allotopotype, female. Paratopotype, male.

Idiocera (*Ptilostenodes*) *uniplagiata* is readily told from the other described species of the subgenus by the position of m-cu at or very close to the fork of M. The fly is more generally similar to the Philippine *I. (P.) ptilostenella* (Alexander) than to the Formosan and western Chinese species.

GNOPHOMYIA (GNOPHOMYIA) DEJECTA Alexander.

Gnophomyia dejecta ALEXANDER, Philip. Journ. Sci. 40 (1929) 542, 543.

Known from various stations in Formosa. Male, Hong San, Kiangsi, altitude 3,000 feet, June 25, 1936 (*Gressitt*). Both sexes, Liung-chon-san, Fukien, altitude 2,550 feet, July 20 and 21, 1936 (*Gressitt*).

CRYPTOLABIS (BÆOURA) ANGUSTILOBATA sp. nov. Plate 1, fig. 21; Plate 3, fig. 35.

Belongs to the *trichopoda* group; general coloration black; head dark gray; wings with a weak brown tinge, the costal region more whitened; femora brownish yellow, the tips narrowly darkened; legs with long conspicuous erect setæ; male hypopygium with the tergite broad, each lateral angle produced caudad into a narrow glabrous lobe, the caudal margin between these lobes truncated.

Male.—Length, about 3.8 to 4 millimeters; wing, 4.6 to 5.

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

Rostrum and palpi black. Antennæ black throughout; flagellar segments passing through oval into long-oval and cylindrical, with elongate verticils. Head dark gray.

Pronotum and mesonotum black, the anterior lateral pretergites very restrictedly and vaguely brightened; posterior margin of scutellum a trifle paler. Pleura black, sparsely pruinose, especially on posterior sclerites. Halteres brownish black, the base of stem restrictedly brightened. Legs with the coxæ and trochanters dark brown; remainder of legs brownish yellow, the tips of the femora and tibiæ narrowly darkened; terminal tarsal segments infuscated; legs with long, conspicuous, erect setæ. Wings (Plate 1, fig. 21) with a weak brown tinge, the costal region more whitened; stigma small and poorly indicated; veins and macrotrichia dark. Venation: Petiole of cell M_3 a little longer than m-cu; cell 2d A relatively narrow.

Abdomen, including hypopygium and ovipositor, dark brown. Male hypopygium (Plate 3, fig. 35) with the tergite, 9t, broad, each lateral angle produced caudad into a narrow glabrous lobe, its tip obtuse, the caudal margin between these lobes truncated. Dististyle, *d*, relatively narrow, gently curved to the subacute tip; before apex on lower margin with about two small spines. What is here interpreted as being modified gonapophyses terminate in a semicircular pale lobe that is provided with four or five conspicuous setæ. Eighth sternite, 8s, with apex darkened and slightly produced into an obtuse lobe.

Habitat.—China (Kwangtung).

Holotype, male, Yim-na-san, altitude 1,800 feet, June 11, 1936 (*Gressitt*). Allotopotype, female, with the type. Paratopotypes, one male, one female, June 10 to 14, 1936.

Cryptolabis (*Bæoura*) *angustilobata* is readily told from all regional allied species, as *C. (B.) trichopoda* Alexander (Formosa), *C. (B.) lævilobata* Alexander (Formosa), *C. (B.) setosipes* Alexander (Hainan), and *C. (B.) consona* Alexander (Hainan), by the structure of the male hypopygium, especially of the tergite, dististyle, and gonapophyses.

MOLOPHILUS INJUSTUS sp. nov. Plate 1, fig. 22; Plate 3, fig. 36.

Belongs to the *gracilis* group, *assamensis* subgroup; general coloration dark brownish gray; antennæ (male) elongate, nodulose; halteres with dark-brown knobs; femora chiefly dark brown, the bases narrowly obscure yellow, the posterior femora chiefly yellow with about the distal third darkened; wings with a weak dusky tinge; R_{2+3} longer than R_{4+5} ; male hypopygium with the dorsal lobe of basistyle exceeding the dististyle in length, provided with long coarse setæ; inner dististyle entirely darkened.

Male.—Length, about 3.5 millimeters; wing, 4; antenna, about 3.2.

Rostrum gray; palpi black. Antennæ (male) elongate, nearly as long as the body, black throughout; flagellar segments fusiform, about equally narrowed at both ends, each segment with a group of long erect setæ on the enlarged portion, these setæ about equal in length to the segments. Head gray.

Mesonotum dark brownish gray; pseudosutural foveæ black; scutellum and mediotergite concealed by mounting medium. Pleura brownish gray. Halteres with stem obscure yellow, the knob dark brown. Legs with the coxæ dark; trochanters obscure yellow; femora chiefly dark brown, the bases of fore and middle pairs restrictedly brightened; posterior femora yellow with the distal third or less darkened; tibiæ yellowish brown to brown; the tips darker; tarsi dark brown to black. Wings (Plate 1, fig. 22) with a weak dusky tinge; veins pale brown; macrotrichia a trifle darker. Venation: R_{2+3} longer than R_{4+5} , R_2 lying distad of level of r-m; petiole of cell M_3 about three times m-cu; vein 2d A relatively short, ending before m-cu.

Abdomen, including hypopygium, brownish black. Male hypopygium (Plate 3, fig. 36) with the dorsal lobe, *db*, of basistyle elongate, relatively stout, the apex narrowed and glabrous;

ventral lobe shorter, with long, coarse, erect to retrorse setæ; a slender, fingerlike lobule on dorsomesal end, this provided at apex with a group of long setæ, not distributed along face as in *kempi*. Outer dististyle, *od*, sinuous to the acute apex, the surface microscopically roughened; inner dististyle, *id*, nearly as long, near base with a few coarse setæ, thence narrowed to an acute spinous point. Ædeagus, *a*, with lateral wings or flanges.

Habitat.—China (Kwangtung).

Holotype, male, Tsin-leong-san, altitude 2,750 feet, June 6, 1936 (*Gressitt*).

The nearest ally is *Molophilus kempi* Alexander (eastern Himalayas) which differs especially in the larger size, different coloration of the body and legs, and in the details of structure of the male hypopygium. There are several species of the *assamensis* subgroup in the Philippines and northern India, but none had hitherto been discovered in China or Japan.

STYRINGOMYIA SPATHULATA sp. nov. Plate 1, fig. 23; Plate 3, figs. 37 to 39.

Belongs to the *armata* group; male hypopygium with the median tergal lobe elongate, weakly spatulate, narrowest at near midlength; ninth sternite relatively narrow at apex, the two major setæ placed one on either side of midline; spines of basistyle terete or only weakly flattened, one arising from a conspicuous basal tubercle; dististyle with a long blackened spine at base of inner arm.

Male.—Length, about 7 millimeters; wing, 4.8 to 5.

Female.—Length, about 6 millimeters; wing, 4.

Rostrum brownish black; palpi dark brown, the terminal segment a little paler at outer end; flagellum chiefly pale. Head pale testaceous brown, the bristles of anterior vertex flattened and proclinate.

Mesonotum chiefly testaceous-brown, vaguely patterned with darker, including a central spot and narrow lateral borders on the pronotum. Dorsal pleura darkened, the ventral portion yellow. Halteres dusky. Legs with the femoral and tibial dark rings relatively vague and diffuse, slightly interrupted on lower surface. Wings (Plate 1, fig. 23) narrow, subhyaline, sparsely patterned with brown, including restricted seams on anterior cord, m-cu, outer end of cell 1st M_2 , and distal end of vein 2d A; veins brown, darker in the clouded areas, the more basal and the costal veins paler. Costal fringe long and con-

spicuous. Venation: Anterior branch of Rs suberect; 2d M_2 short-petiolate; vein 2d A curved rather gently into wing margin.

Abdominal tergites yellowish brown, the extreme lateral and caudal margins of the individual segments a trifle darker; sternites slightly more testaceous. Male hypopygium with the median lobe of tergite (Plate 3, fig. 37, 9t) elongate, weakly spatulate, being narrowed at near midlength, the surface with abundant erect setulæ. Ninth sternite (Plate 3, fig. 37, 9s) with the apex relatively narrow, obtuse, the major setæ of moderate length, placed one on either side of the midline, the distance between their punctures about one-fourth the length of the seta itself. Basistyle (Plate 3, fig. 38, b) with two modified setæ, one sessile, the other arising from a slender tubercle that is more than one-half the length of the seta itself, the latter strongly curved; setæ terete, not strongly flattened as in *armata*. Dististyle (Plate 3, fig. 39, d) with the outer arm bearing two very unequal setæ, the longest nearly one-half the length of the arm; along face of arm with a scattered series of about twelve small erect setæ; at base of arm a trifle group of about twenty-five black peglike spines; middle arm of style as figured; inner arm with its outer lobe high, the beak portion terminating in a compact group of about ten black spines; base of arm bearing a curved blackened spine.

Habitat.—Central Java.

Holotype, male, Nglirip, Djati forests, altitude 300 feet, January, 1936 (*Walsh*). Allotopotype, female, pinned with type. Paratopotypes, 3 males and females, with types.

The nearest allies of the present fly are *Styringomyia acuta* Edwards (Borneo) and *S. armata* Edwards (Sumatra, Borneo, Philippines), which have the bisetose basistyle of the group but differ in several details of the male hypopygium. The present fly is closest to *armata*, differing especially in the shape and structure of the modified setæ of the basistyle and the structure of the dististyle, especially the long curved spine at base of the inner arm. I have identified as *armata* specimens from Mindanao, and these differ from the present fly, not merely in the structures described, but also in the number and arrangement of the peglike blackened spines on the outer and middle arms of the dististyle. All three species are rather closely allied among themselves, but all seem to represent valid species rather than races.

STYRINGOMYIA PENDULA sp. nov. Plate 1, fig. 24; Plate 3, figs. 40, 41.

General coloration yellow, variegated with darker; head grayish white above, the posterior genæ infuscated; mesonotum variegated grayish white and brownish black; brown rings on femora and tibiæ broad and clear cut; wings whitish subhyaline, with dark seams on anterior cord, m-cu and outer end of cell 1st M_2 ; a conspicuous brown seam on basal half of vein Cu; anterior branch of Rs oblique, originating opposite r-m; male hypopygium with a single modified seta on basistyle; dististyle with its inner arm produced into a slender pendulous process that terminates in a long acute spine, along the margin with about six black points.

Male.—Length, about 7.5 to 7.8 millimeters; wing, 4.8 to 5.

Female.—Length, about 6 to 7 millimeters; wing, 4.2 to 4.3.

Rostrum and palpi brownish black. Antennæ with scape blackened beneath, yellow above; pedicel brownish black; flagellum chiefly pale, the more basal segments obscure yellow. Head grayish white above, the postgenæ infuscated; setæ of head stout but not flattened, chiefly proclinate.

Mesonotum variegated with grayish white and brownish black, forming a complex pattern on præscutum; central portion of scutellum almost white; setæ of thorax strong but simple. Pleura darkened dorsally, abruptly yellow on ventral portions. Halteres dusky. Legs with the usual yellow and dark-brown pattern, the brown rings complete and conspicuous. Wings (Plate 1, fig. 24) narrow, whitish subhyaline, sparsely patterned with brown, as follows: Anterior cord; m-cu and outer end of cell 1st M_2 ; a conspicuous seam on vein Cu, involving basal half of first section; distal third of vein 2d A darkened. Costal fringe long and conspicuous, erect. Venation: Anterior branch of Rs moderately oblique, originating opposite r-m; cell 2d M_2 very short-petiolate to broadly sessile; vein 2d A bent into margin at a moderate curve.

Abdominal tergites obscure yellow, with a vague darker median stripe; sternites light yellow, the lateral margins narrowly darkened; hypopygium yellow. Male hypopygium with the tergite (Plate 3, fig. 40, 9*t*) relatively narrow and pointed at apex; ninth sternite with apex glabrous, truncated, with the major setæ relatively short, about equal in length to the distance between them; on margin, on either side of the midline, with a microscopic spinous point. Basistyle (Plate 3, fig. 41, *b*) with a single modified bristle. Dististyle (Plate 3, fig. 41, *d*) as shown, the outer arm, *od*, dusky, with two unequal setæ at

and near tip; middle arm, *md*, with very numerous and complex groups of black spines; inner arm, *id*, produced into an acute sclerotized beak and bearing a long sinuous process that terminates in a slender point, the margin bearing about six black points.

Habitat.—Central Java.

Holotype male, Nglirip, Djati forests, altitude 300 feet, January, 1936 (*Walsh*). Allotopotype, female, pinned with type. Paratopotypes, both sexes.

The nearest ally of the present fly appears to be *Styringomyia soembana* Edwards (Soemba Islands), which differs chiefly in the coloration of the head and thorax and in the details of structure of the male hypopygium. The distinctly darkened seam along vein Cu is found in certain African species, such as *S. lineaticeps* Edwards and *S. marshalli* Edwards, but is not found in the regional allies of the present insect.

STYRINGOMYIA SEPARATA Alexander.

Styringomyia separata ALEXANDER, Philip. Journ. Sci. 56 (1935) 368, 369.

Described from northern Formosa. Several specimens, Hong San, Kiangsi, altitude 2,750 to 3,500 feet, June 24 to 29, 1936 (*Gressitt*).

TOXORHINA (CERATOCHEILUS) TAIWANICOLA (Alexander).

Ceratocheilus taiwanicola ALEXANDER, Philip. Journ. Sci. 22 (1923) 475, 476.

The species is wide-spread in the mountains of Formosa and is herewith recorded from southeastern China.

FORMOSA, Keinensan, altitude 5,400 feet, August 14, 1933 (*Issiki*), Fudieda, altitude 4,700 feet, August 13, 1933 (*Issiki*). CHINA, Hong San, Kiangsi, altitude 2,750 feet, June 25, 1936 (*Gressitt*).

ERRATUM

Due to a regrettable oversight certain of the illustrations for Parts XXXI [Philip. Journ. Sci. 60 (1936) 323] and XXXII [Philip. Journ. Sci. 61 (1936) 113] of this series have been transposed. Plate 1 at the end of Part XXXI belongs to Part XXXII, and Plate 1 at the end of Part XXXII belongs to Part XXXI. The author has kindly corrected this error in all the reprints distributed by him.—EDITOR.

ILLUSTRATIONS

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

PLATE 1

- FIG. 1. *Ptychoptera bellula* sp. nov.; venation.
2. *Ptychoptera javensis* sp. nov.; venation.
3. *Dolichopeza* (*Sinoropeza*) *paucisetosa* sp. nov.; venation.
4. *Dolichopeza* (*Nesopeza*) *fabella* sp. nov.; venation.
5. *Limonia* (*Dicranomyia*) *pacifera* sp. nov.; venation.
6. *Limonia* (*Geranomyia*) *sparsiguttata* sp. nov.; venation.
7. *Limonia* (*Geranomyia*) *spectata* sp. nov.; venation.
8. *Limonia* (*Geranomyia*) *subradialis* sp. nov.; venation.
9. *Limonia* (*Geranomyia*) *gracilispinosa* sp. nov.; venation.
10. *Limonia* (*Geranomyia*) *contrita* sp. nov.; venation.
11. *Helius* (*Helius*) *hæmorrhoidalis* sp. nov.; venation.
12. *Helius* (*Helius*) *aciferus* sp. nov.; venation.
13. *Orimarga* (*Orimarga*) *exasperata* sp. nov.; venation.
14. *Pseudolimnophila projecta* sp. nov.; venation.
15. *Hexatoma* (*Eriocera*) *quadriatrata* sp. nov.; venation.
16. *Teucholabis* (*Teucholabis*) *kiangsiensis* sp. nov.; venation.
17. *Gonomyia* (*Lipophleps*) *inquisita* sp. nov.; venation.
18. *Gonomyia* (*Lipophleps*) *subanxia* sp. nov.; venation.
19. *Gonomyia* (*Lipophleps*) *atrox* sp. nov.; venation.
20. *Idiocera* (*Ptilostenodes*) *uniplagiata* sp. nov.; venation.
21. *Cryptolabis* (*Bæoura*) *angustilobata* sp. nov.; venation.
22. *Molophilus injustus* sp. nov.; venation.
23. *Styringomyia spathulata* sp. nov.; venation.
24. *Styringomyia pendula* sp. nov.; venation.

PLATE 2

- FIG. 25. *Limonia* (*Dicranomyia*) *pacifera* sp. nov.; male hypopygium.
26. *Limonia* (*Geranomyia*) *sparsiguttata* sp. nov.; male hypopygium.
27. *Limonia* (*Geranomyia*) *subradialis* sp. nov.; male hypopygium.
28. *Limonia* (*Geranomyia*) *gracilispinosa* sp. nov.; male hypopygium.
29. *Helius* (*Helius*) *hæmorrhoidalis* sp. nov.; male hypopygium.
30. *Helius* (*Helius*) *aciferus* sp. nov.; male hypopygium.
31. *Orimarga* (*Orimarga*) *exasperata* sp. nov.; male hypopygium.
32. *Gonomyia* (*Lipophleps*) *subanxia* sp. nov.; male hypopygium.

PLATE 3

- FIG. 33. *Gonomyia* (*Lipophleps*) *atrox* sp. nov.; male hypopygium.
34. *Idiocera* (*Ptilostenodes*) *uniplagiata* sp. nov.; male hypopygium.

- FIG. 35. *Cryptolabis (Bæoura) angustilobata* sp. nov.; male hypopygium.
36. *Molophilus injustus* sp. nov.; male hypopygium.
37. *Styringomyia spathulata* sp. nov.; male hypopygium, tergite and sternite.
38. *Styringomyia spathulata* sp. nov.; male hypopygium, apex of basistyle.
39. *Styringomyia spathulata* sp. nov.; male hypopygium, styli.
40. *Styringomyia pendula* sp. nov.; male hypopygium, tergite and sternite.
41. *Styringomyia pendula* sp. nov.; male hypopygium, styli.

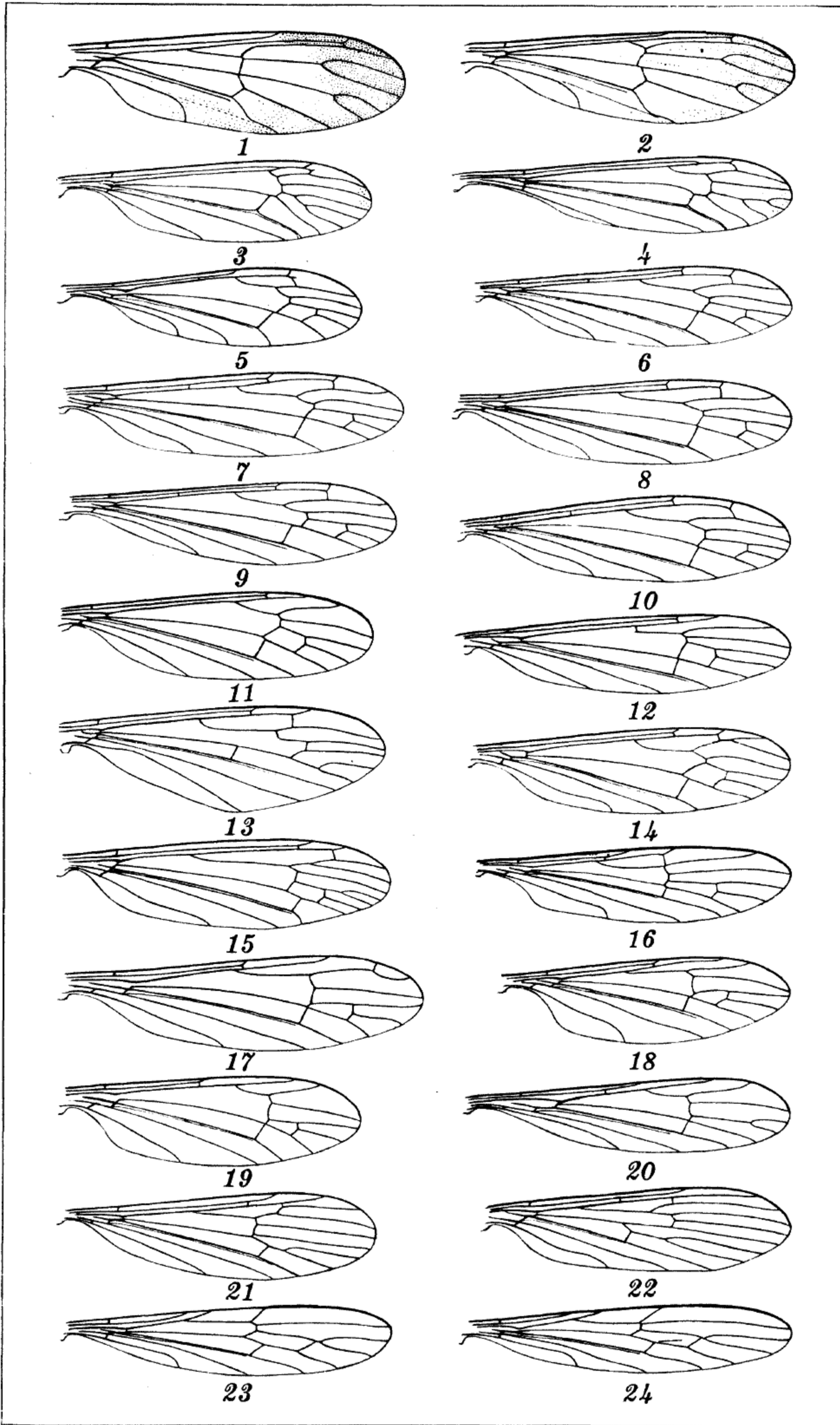


PLATE 1.



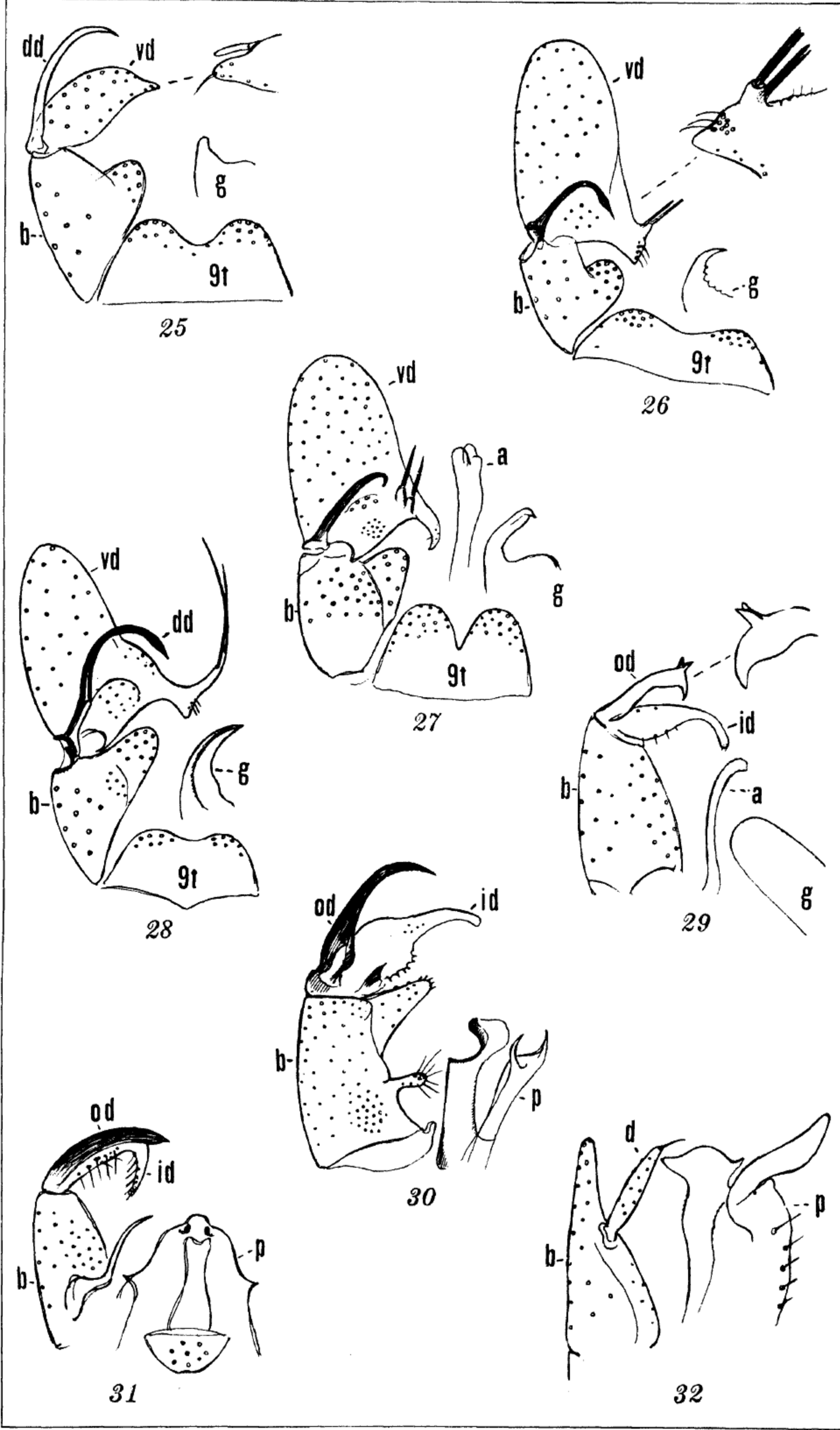


PLATE 2.



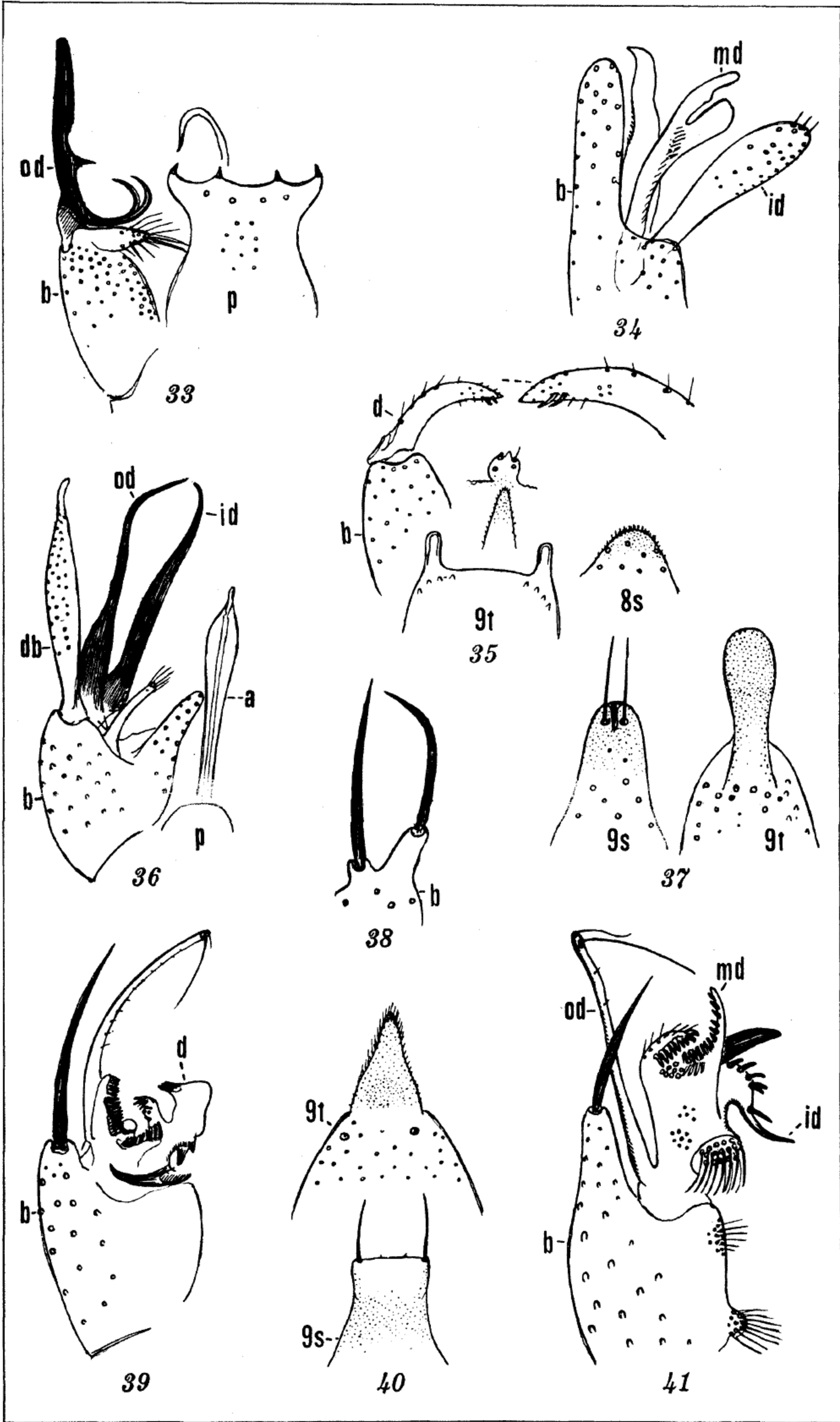


PLATE 3.