

NEW OR LITTLE-KNOWN TIPULIDÆ FROM EASTERN
ASIA (DIPTERA), XIX¹

By CHARLES P. ALEXANDER
Of Amherst, Massachusetts

THREE PLATES

The majority of the crane flies discussed at this time are from western China, mostly from Mount Omei, Szechwan, where they were taken by my friend the Reverend Mr. George M. Franck. A few others, preserved in the United States National Museum through the kindly interest of the collector, were taken in Sumatra by Mr. Edward Jacobson. A small number of species were taken on various islands to the east of Wallace's Line and so from the Australasian rather than the Oriental Region. Such specimens were taken in Celebes by my friend and former student Mr. Charles F. Clagg, and in New Caledonia, collected by Mr. Jean Risbec. Still further material, now contained in the Hungarian National Museum and received for study through the kindness of Dr. Z. Szilady, is from New Guinea. Except where stated otherwise, all types of novelties described at this time are in my own collection. I wish to extend my cordial thanks to all of the above-mentioned entomologists for this continued aid in the study of the Asiatic and Australian Tipulidæ.

TIPULINÆ

TIPULA (VESTIPLEX) DESERRATA sp. nov. Plate 1, fig. 1; Plate 2, fig. 25.

Antennæ 12-segmented, unusually short; flagellum bicolorous; terminal two segments more or less fused; mesonotal præscutum gray with four grayish brown stripes that are narrowly bordered by dark brown; apices of knobs of halteres brightened; femora obscure yellow, the tips blackened; wings whitish to pale yellowish subhyaline, variegated by dark and pale brown; a large dark brown postarcular darkening; dark area in stigmal field interrupted by a pale spot at proximal end of stigma; male hypopygium with basistyle armed with a black spine; cerci of ovipositor slender, with smooth valves.

¹ Contribution from the entomological laboratory, Massachusetts State College.

Male.—Length, about 16 millimeters; wing, 19.

Female.—Length, about 18 to 20 millimeters; wing, 16.5 to 18.5.

Frontal prolongation of head reddish yellow, darker above; nasus elongate, brownish black; palpi dark brown, paler at incisions. Antennæ (male) short, less than the palpi; basal four segments yellow, the succeeding segments bicolorous, darkened basally, the remainder obscure yellow; only twelve antennal segments, the small apical one further partly fused with the penultimate; verticils considerably exceeding the segments in length. Head with front and orbits light yellow, the vertex infuscated.

Mesonotal præscutum gray, with four grayish brown stripes that are narrowly bordered by dark brown, the intermediate pair confluent at cephalic ends; each scutal lobe with two dark areas that are unmarginated; median area of scutum pale; scutellum and mediotergite gray; a narrow, continuous, dark brown median line extending from scutum to base of abdomen. Pleura chiefly pale, the pleurotergite in front golden yellow. Halteres darkened, the apices of knobs narrowly yellow. Legs with the coxæ and trochanters yellow; femora obscure yellow, the tips narrowly and conspicuously blackened; tibiæ and tarsi brown to dark brown. Wings (Plate 1, fig. 1) with the ground color whitish to pale yellowish subhyaline, the disk chiefly covered by pale brown; prearcular cells light yellow, cells C and Sc more brownish yellow; darker brown markings, as follows: A large postarcular area in bases of cells R and M; origin of Rs; stigma, the last preceded by a conspicuous white spot in the center of a darkened cloud that extends from tip of Sc along outer end of Rs to stigma and thence along the anterior cord; posterior cord; a spot at near midlength of Cu and a seam at end of vein 2d A less distinctly darkened; the ground subhyaline areas include the subbasal portions of cells R and M; most of cell R₁ before the stigma; a broad fascia beyond the stigma, extending from costa into base of cell M₃; an area near outer end of cell M; white marginal spots in cells 1st A and 2d A (two areas in each cell); basal portions of cells Cu and 1st A variegated with whitish or pale yellow; veins brown. Veins R₃ and R₄₊₅ with abundant macrotrichia. Venation: R₁₊₂ entire but pale yellow, without trichia; Rs long, approximately three times m-cu, the latter somewhat variable in position, from just before to just beyond the fork of M₃₊₄.

Abdominal tergites obscure yellow, the basal segments in male with a very conspicuous brownish black median stripe; in female, the basal and intermediate tergites are reddish yellow, darker sublaterally, the borders narrowly grayish; subterminal segments and genital shield blackened. Male hypopygium with the tergite divided medially by pale membrane or very thin chitin, with a serrulate blackened plate on either side of midline. Basistyle (Plate 2, fig. 25, *b*) with a powerful black spine. Dististyles *id*, *od*, as figured. Ovipositor with the cerci entirely abnormal for the subgenus, almost as in the typical subgenus of *Tipula*, slender, not transverse, the margins without denticulations; hypovalvæ developed, extending caudad to end of genital shield.

Habitat.—China (Szechwan).

Holotype, male, Kwanhsien, altitude 3,500 feet, May 27, 1930 (*Franck*). Allotopotype, female. Paratopotype, female, in poor condition.

Of the two score species of *Vestiplex* now known from eastern Asia (including Siberia, Tibet, China, Japan, and Formosa, as well as the Himalayas) the present fly seems unquestionably to find its nearest ally in *Tipula (Vestiplex) asio* Alexander (Japan: Honshiu), which differs especially in the structure of the male hypopygium. The slender, nonserrate cerci of the ovipositor differ from those of all species of the subgenus known to me, but, unfortunately, the female sex of several species, including *asio*, is still undescribed.

TIPULA (VESTIPLEX) KWANHSIENANA sp. nov. Plate 1, fig. 2; Plate 2, fig. 26.

Mesonotal præscutum silvery, with four brown stripes that are narrowly bordered by darker brown, the intermediate pair with their anterior ends abruptly paler; femora obscure yellow, the tips blackened, preceded by a clearer yellow ring; wings pale yellow and brown, variegated with darker brown areas, including a conspicuous postarcular one; m-cu connecting with M_{3+4} at two-thirds the length; male hypopygium with caudal margin of tergite terminating in two widely separated rounded lobes; outer dististyle elongate, narrow, sinuous; basistyle unarmed.

Male.—Length, about 13 millimeters; wing, 15.6.

Frontal prolongation of head light yellow above, slightly infuscated laterally, nasus long and slender, black; palpi brownish black. Antennæ with scape and pedicel light yellow, flagellum black; flagellar segments subcylindrical, the basal enlargements feebly developed; longest verticils subequal in length to the seg-

ments; terminal segment reduced. Head yellow, the center of vertex darkened.

Ground color of mesonotal præscutum silvery on sides, the interspaces more yellowish, the disk with four brown stripes that are very narrowly bordered by darker brown; anterior ends of intermediate stripes abruptly paler, more olive; scutal lobes yellow pollinose, each with two dark brown areas; scutellum and mediotergite similar; a capillary brown vitta extends from the transverse suture to the abdomen. Pleura chiefly golden yellow. Halteres with base of stem and apex of knob yellow, the remainder of stem pale brown, the base of knob dark brown. Legs with coxæ light yellow pollinose; trochanters yellow; femora obscure yellow, the tips rather narrowly but conspicuously blackened, preceded by a slightly clearer yellow ring; tibiæ dark brown, the bases paler; tarsi brownish black. Wings (Plate 1, fig. 2) strongly narrowed at base; ground color pale yellow, the coloration chiefly concealed by an extensive grayish brown pattern that covers most of the disk, exposing the ground as follows: Prearcular region beyond the post-arcular darkening; a very tiny area before origin of Rs; cell R_1 before stigma almost entirely pale; post-stigmal crossband to cell 1st M_2 ; near outer end of cell M; posterior half of cell 1st M_2 ; in basal half of cell Cu; two spots in outer end of cell 1st A; both ends of cell 2d A; cell C chiefly pale; darker brown areas in bases of cells R and M; origin of Rs and along vein Cu in alignment with this; stigma; entire wing tip unvariegated by pale color; veins dark brown. Venation: m-cu connecting with M_{3+4} at two-thirds the length.

Abdominal segment one and basal ring of two light golden yellow, darkened medially; succeeding segments almost uniformly dark brown, the caudal borders of segments two to four faintly paler; basal sternites yellow, the outer segments dark, gray pruinose; outer segments, with hypopygium, dark brown. Male hypopygium (Plate 2, fig. 26) with the tergite separated from sternite by membrane; basistyle complete, with a triangular area partially delimited from sternite dorsad of tergite. Ninth tergite, $9t$, as viewed from above, with two flattened reddish lateral lobes, widely separated, clothed with delicate pale setæ; space between lobes truncate and blackened; dorsomedian area of tergite pale but not membranous, as is the case in several other species of *Vestiplex*; viewed laterally, there is seen to be a second lobe ventrad of the one described, the margin between the two with abundant pale setæ. Basistyle, b , and eighth sternite, $8s$, without spines. Outer dististyle, od , unusually long and slen-

der, sinuous at near midlength, the basal half stouter than the outer half. Inner dististyle, *id*, with apical beak slender, blackened, separated from the subterminal lobe only by a linear curved split.

Habitat.—China (Szechwan).

Holotype, male, Kwanhsien, altitude 3,000 feet, August 16, 1930 (*Franck*).

The closest ally of the present fly is *Tipula (Vestiplex) arisanensis* Edwards (Formosa), which differs in the even smaller size, pale basal flagellar segments, unbordered præscutal stripes with the median one entire on anterior portion, and the details of wing pattern, such as the restriction of the yellow ground in bases of cells R and M, before the stigma and in base of cell 2d A, and its increase in amount before the origin of Rs. Both species show the uniformly darkened wing tip and the unusual position of m-cu before the fork of M_{3+4} . Unfortunately the male sex of *arisanensis* is still unknown.

TIPULA (ACUTIPULA) DICLADURA sp. nov. Plate 1, fig. 3; Plate 2, fig. 27.

Belongs to the *munda* group; allied to *biramosa*; mesonotal præscutum, scutum, and scutellum almost uniformly brownish gray; mediotergite light yellow, the center of the disk dark brown; pleura yellow; wings tinged with brown, the costal region and stigma darker; male hypopygium with the median lobe of tergite wide, depressed, the caudal margin deeply notched, each lobule densely set with small black spines; inner dististyle with a powerful curved blade and a slender axillary spine, additional to the usual beak.

Male.—Length, about 24 millimeters; wing, 27.5. Hind leg, femur, 20; tibia, 25; basitarsus, about 36.

Frontal prolongation of head dark reddish brown; nasus dark brown, elongate; palpi dark brown. Antennæ relatively short; scape brown, pedicel yellow; flagellar segments weakly bicolorous, the basal enlargement darkened, the apical portion obscure yellow; longest verticils more than one-half longer than the segments. Head brown, the posterior orbits narrowly yellowish.

Pronotum brownish yellow, the scutellum darker. Mesonotal præscutum, scutum, and scutellum almost uniformly dark brownish gray, the præscutum with very indistinct darker stripes, the lateral margins obscure brownish yellow; mediotergite light yellow, with a large brown area occupying much of disk. Pleura, including propleura and dorsopleural membrane, uniformly yellow. Halteres darkened, the apices of knobs obscure yellow.

Legs very long; coxæ and trochanters yellow; femora light brown, the tips rather narrowly blackened; tibiæ and tarsi dark brown. Wings (Plate 1, fig. 3) tinged with brown; cell C and especially cell Sc darker brown; stigma brown; obliterative areas before cord reduced in size, inconspicuous. Venation: Rs short, subequal to m-cu; petiole of cell M_1 subequal to m.

Abdominal tergites brownish yellow, the basal segments narrowly darkened sublaterally, the fifth and succeeding segments, including hypopygium, brownish black. Male hypopygium with the median lobe of tergite (Plate 2, fig. 27, 9t) broad, depressed, the caudal margin with a deep U-shaped notch that has about the same general outline as that of the lobules, the latter densely set with blackened spinous points. Outer dististyle, *od*, broad on basal half, the apical portion somewhat narrower. Inner dististyle, *id*, with the outer portion a powerful flattened curved blade, glabrous, terminating in an acute point; in axil between this blade and the usual apical beak of style a slender needle-like rod, its tip subacute; apical beak compressed, the margin flattened.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 4,500 feet, August 3, 1931 (*Franck*).

The only other member of the group that has a hypopygium at all like that of the present fly is *Tipula (Acutipula) biramosa* Alexander, likewise from Szechwan. This species has the median lobe of the tergite narrow, only feebly notched, and with the inner dististyle of quite different conformation.

TIPULA (ACUTIPULA) PLATYCANTHA sp. nov. Plate 2, fig. 28.

Belongs to the *munda* group; allied to *oncerodes*; mesonotal præscutum, scutum, and scutellum dark gray; mediotergite darkened medially, bordered by yellow; pleura yellow; obliterative areas of wing inconspicuous; male hypopygium with the median lobe of tergite narrow, the tip simple; inner dististyle with a slender blackened beak, the outer lobe very broad and flattened, terminating in a small spine, with a second spine on outer margin before apex.

Male.—Length, about 20 to 25 millimeters; wing, 20.5 to 28.

Frontal prolongation of head yellowish brown, narrowly lined with darker; nasus elongate, blackened; palpi black. Antennæ with scape brownish yellow; pedicel obscure yellow; flagellum weakly bicolorous, the basal enlargement darkened, the remainder obscure yellow. Head brownish gray, the posterior orbits nar-

rowly pale; anterior vertex relatively narrow, at narrowest point about twice the diameter of scape.

Mesonotum chiefly dark gray, the parascutella yellow; mediotergite dark medially, broadly margined with yellow. Pleura yellow. Halteres brown, the base of stem narrowly pale. Legs with coxæ and trochanters pale yellow; femora obscure yellow, the tips blackened; tibiæ brown, the tips brownish black; tarsi chiefly brownish yellow, the apices of the segments narrowly darkened. Wings with a strong brown tinge, the prearcular region, cells C and Sc, and the stigma darker brown; obliterative area distinct before stigma but only slightly evident before the cord, much less so than in *oncerodes*. Venation: Petiole of cell M_1 variable, subequal to or shorter than m; m-cu at or just before fork of M_{3+4} .

Abdomen with basal four segments reddish brown, the tergites narrowly margined laterally with yellow, lined internally with a faint dusky wash; segments five to nine brownish black. Male hypopygium with the median lobe of tergite (Plate 2, fig. 28, 9t) unusually slender, narrowed to a simple point that is densely set with abundant black spinous points. Outer dististyle, *od*, a flattened, long-oval lobe, the apex obtuse. Inner dististyle, *id*, with the beak unusually slender, blackened; outer lobe of style very broad and flattened, terminating in a small spine, with a second spine on outer margin before apex.

Habitat.—China (Szechwan).

Holotype, male, Kwanhsien, altitude 4,000 feet, August 17, 1930 (*Franck*). Paratopotype, male, August 19, 1930 (*Franck*). Paratypes, 2 males, Mount Omei, altitude, 4,500 feet, August 8, 1931 (*Franck*).

The only near ally, *Tipula (Acutipula) oncerodes* Alexander, is generally similar in appearance to the present fly, but the male hypopygium, especially in the structure of the inner dististyle, is quite different.

TIPULA BIPENDULA sp. nov. Plate 1, fig. 4; Plate 2, figs. 29 to 31.

Mesonotal præscutum brownish gray, with four darker brown stripes; pleura uniformly light yellow; antennæ (male) relatively long; flagellum beyond basal segment black; wings strongly tinged with brown, cells C and Sc conspicuously darker brown; cell 1st M_2 small; abdomen orange, the tergites with a median black vitta that is narrowly interrupted; male hypopygium with a single dististyle; eighth sternite bearing a large pale lobe that is profoundly divided medially.

Male.—Length, about 15 millimeters: wing, 19; antenna, about 6.

Frontal prolongation of head dark brown, shiny; nasus elongate; palpi brownish black. Antennæ (male) relatively elongate; scape and pedicel clear light yellow; first flagellar segment brownish yellow; remainder of flagellum black, the extensive tips of the individual segments a trifle brightened; basal enlargements of segments moderately developed; longest verticils subequal to the segment. Head chiefly dark brown, the front pale yellow.

Mesonotal præscutum brownish gray, with four dark brown stripes that are but little conspicuous against the ground, the intermediate pair separated by a more blackish median vitta; posterior sclerites of notum concealed in the unique type. Pleura uniformly light yellow.

Halteres dark brown, the base of stem narrowly pale yellow. Legs with the coxæ and trochanters pale yellow; femora obscure yellow, the tips narrowly but conspicuously brownish black; remainder of legs darker brown; claws (male) toothed. Wings (Plate 1, fig. 4) strongly tinged with brown; cells C and Sc darker brown, the color not involving the radial field, a little darker than the stigma; paler areas in outer ends of cells R_3 and R_5 ; oblitative areas restricted; veins dark brown. Macrotrichia of veins abundant; squama naked. Venation: R_{1+2} entire, with trichia on basal portion; cell 1st M_2 unusually small, subpentagonal; cell M_1 about twice its petiole; cell 2d A relatively narrow.

Abdomen chiefly orange, the tergites with a median black vitta that is narrowly interrupted at caudal borders of segments; hypopygium chiefly darkened. Male hypopygium (Plate 2, fig. 29) with the tergite, 9t, sternite, 9s, and basistyle all entirely separate by sutures. Ninth tergite (Plate 2, fig. 31, 9t) with caudal border deeply trifid, the lateral lobes more darkened than the short obtuse median lobe; lateral lobes with very delicate setulæ. Ventral end of basistyle protuberant, provided with long setæ. A single dististyle (Plate 2, fig. 30), near its base produced into a long erect black spine; outer portion of style produced backward into a diaphanous membrane. Membrane of eighth sternite produced into a depressed pale structure, 8s, that is split almost to base, leaving two lobes that in a position of rest hang pendant (Plate 2, fig. 31).

Habitat.—China (Szechwan).

Holotype, male, Kwanhsien, altitude 2,500 feet, May 27, 1930 (Franck):

The structure of the male hypopygium readily serves to distinguish the present fly from all other members of the genus known to me. The wing pattern is somewhat like that of *Tipula brunnicosta* Brunetti (northern India), which is otherwise an entirely different fly.

LIMONIINÆ

LIMONIINI

LIMONIA (LIBNOTES) DIPHRAGMA sp. nov. Plate 1, fig. 5.

Mesonotal præscutum yellow with two darker intermediate stripes, the lateral borders darkened; antennal flagellum yellow; pronotum dark brown; wings pale yellow, with a restricted pale brown pattern; free tip of Sc_2 lying its own length before R_2 ; supernumerary crossveins in cells R_3 and R_5 ; abdominal tergites yellow, with a median brownish black stripe; ovipositor with small, weak cerci.

Female.—Length, about 10 millimeters; wing, 13 by 3.5.

Rostrum and palpi brownish black. Antennæ with basal segments dark; flagellum yellow. Head buffy yellow.

Pronotum yellow, dark brown laterally. Mesonotal præscutum with the ground color yellow, with two intermediate darker stripes that are separated only by a capillary pale vitta; lateral border of præscutum darkened; scutal lobes slightly darkened; scutellum pale yellow. Pleura pale yellow, with a conspicuous dorsopleural longitudinal stripe across the dorsal sclerites and pleural membranes; ventral pleurites not darkened. Halteres elongate, pale, the knobs dark brown. Legs with the coxæ and trochanters pale yellow; femora yellow, with a narrow brown subterminal ring; tibiæ and tarsi brownish yellow, the terminal tarsal segments darkened. Wings (Plate 1, fig. 5) relatively broad, as shown by the measurements; pale yellow, with a restricted pale brown pattern, distributed as spots and seams along the crossveins and deflections of longitudinal veins, and as longitudinal washes on veins R_3 , M_{1+2} , and Cu; axillary region and posterior border of wing in medial and cubital fields darkened; veins pale yellow, darker in the clouded areas. Venation: Free tip of Sc_2 lying distinctly before the level of R_2 , so that Sc_2 and R_1 are subequal; two supernumerary crossveins in outer radial field, one in cell R_3 about its own length proximad of R_2 , the other in cell R_5 , about its own length beyond the long, arcuated

m; in addition to the above, both wings of the type show weak crossveins almost at the wing tip in outer ends of cells R_5 and $2d M_2$; these are variable in length and position in the two wings of the type and are presumably adventitious (not shown in figure); m-cu at about one-third the length of cell 1st M_2 .

Abdominal tergites yellow, with a conspicuous median brownish black stripe; sternites more uniformly yellow. Genital segment pale yellow. Ovipositor with very small and weak cerci.

Habitat.—China (Szechwan).

Holotype, female, Mount Omei, on mossy cliffs in river gorge, altitude 3,600 feet, July 27, 1932 (*Franck*).

The only other described *Libnotes* with two supernumerary crossveins in the wing is *Limonia (Libnotes) regalis* (Edwards) of the higher mountains of Formosa. Compared with the allotype female of this latter species in my collection, the present fly differs conspicuously in the diagnostic features listed above. The type is apparently slightly teneral but with the colorational pattern firmly indicated. If the outer adventitious crossveins at the wing tip should prove to be a constant feature, the present fly would be unique in this respect.

LIMONIA (LIBNOTES) CHRYSOPHLEA sp. nov. Plate 1, fig. 6.

General coloration of body orange; legs chiefly black, the femoral bases orange-yellow, tarsi paling to obscure yellow; wings golden yellow with about the outer tenth abruptly dark brown; free tip of Sc_2 some distance before the level of R_2 ; inner ends of cells $2d M_2$ and M_3 about on a level; anal veins gently convergent at bases.

Male.—Length, about 11 millimeters; wing, 15.5.

Female.—Length, about 11 millimeters; wing, 15.5.

Rostrum and palpi brown. Antennæ brown; flagellar segments short-oval, the outer segments more elongate; terminal segment long, the outer two-fifths narrowed and pointed; verticils unilaterally arranged, the longest more than two times the segments. Head obscure fulvous, the front silvery white; anterior vertex of moderate width, subequal to the diameter of scape.

Thorax almost uniformly orange, the præscutum with indications of four more greenish stripes. Halteres yellow, the knobs infuscated. Legs with the coxæ and trochanters obscure orange; femora orange-yellow basally, the tips very broadly blackened, on forelegs including nearly the outer three-fourths, on posterior legs including a little less than the outer half; ti-

biæ brownish black; tarsi paling to brownish yellow or obscure yellow. Wings (Plate 1, fig. 6) rich golden yellow, the extreme tip, including about the outer tenth, abruptly dark brown; stigmal region more saturated golden yellow; veins yellow, brown in the apical darkening. Venation: Sc_1 ending beyond level of r-m, Sc_2 close to its tip; Rs very gently arcuated; free tip of Sc_2 some distance beyond R_2 , the latter evenly curved into R_1 ; inner ends of cells 2d M_2 and M_3 about on a level; m-cu at near one-third the length of cell 1st M_2 ; anal veins gently convergent at bases.

Abdomen orange throughout.

Habitat.—North Celebes (Minahassa).

Holotype, male, Roeroekan, altitude 4,000 feet, April 13, 1931 (*Clagg*). Allotopotype, female, April 17, 1931 (*Clagg*).

This striking crane fly needs no comparison with any other described species of the subgenus. The nature of the wing pattern is like certain species of the tipuline genus *Pseliophora* Osten Sacken, such as *compedita* (Wiedemann) but in the present fly the wing tip is even more narrowly darkened. By Edwards's key to the species of *Libnotes*,² the fly runs to couplet 28, disagreeing with all other species in the coloration of the body, wings, and legs.

LIMONIA (LIBNOTES) NIGERRIMA sp. nov. Plate 1, fig. 7.

Allied to *imponens*; coloration of entire body black; knobs of halteres blackened; wings narrow, the costal border infuscated; free tip of Sc_2 and R_2 in transverse alignment; vein 2d A strongly sinuous.

Male.—Length, about 11 millimeters; wing, 13 by 2.3.

Rostrum and palpi black. Antennæ brownish black, the scape more intensely so; flagellar segments oval; verticils relatively short. Head grayish brown; anterior vertex reduced to a linear silvery strip.

Thorax uniformly brownish black or black. Halteres dusky, the knobs brownish black. Legs with the coxæ black; trochanters brownish black; remainder of legs broken. Wings (Plate 1, fig. 7) narrow, weakly tinged with brown; prearcular region, cells C and Sc, and the elongate stigma darker brown, forming a narrow but continuous costal border; veins dark brown. Macrotrichia of vein C very small, especially near the wing base. Venation: Free tip of Sc_2 and R_2 in transverse alignment; all

²Journ. Fed. Malay States Mus. 14 (1928) 74-80.

radial and medial veins strongly decurved near margin; m long and arcuated, about one-third the total length of cell 1st M_2 ; m-cu at near one-fourth the length of cell; vein 2d A strongly sinuous.

Abdomen black; hypopygium obscure yellow. Male hypopygium of the typical form of *Libnotes*, with the tubercle of the ventral dististyle, together with its setæ, long and conspicuous; rostral spines long and slender.

Habitat.—North Celebes (Minahassa).

Holotype, male, Roeroekan, altitudes 4,000 feet, April 11, 1931 (Clagg).

By both Osten Sacken's³ and Edwards's⁴ keys to the species of *Libnotes*, the present fly runs directly to *Limonia (Libnotes) imponens* (Walker), of South Celebes. The latter differs in the ochraceous coloration of the thorax, together with the wings being unmarked except for the stigmal darkening.

LIMONIA (LIMONIA) COXITALIS sp. nov. Plate 1, fig. 8; Plate 2, fig. 32.

Mesonotal præscutum obscure yellow with a median brown stripe and with the lateral margins darkened; femora brown, the tips narrowly yellow; wings with a faint grayish tinge; stigma brown, subcircular; male hypopygium with the ventromesal lobe of basistyle stout, ending in a slender glabrous lobe; rostral prolongation of dististyle a long yellow blade, with a single small setalike spine on outer margin at near midlength; gonapophyses without corrugated ridges.

Male.—Length, about 7 to 8 millimeters; wing, 8.5 to 9.5.

Rostrum and the reduced palpi brownish black. Antennæ with the scape black; remainder of organ broken. Head dark gray; eyes contiguous on vertex.

Pronotum obscure yellow above, dark brown laterally. Mesonotal præscutum with the ground color obscure yellow, with a median dark brown stripe and with the extreme lateral portions of the sclerite broadly darkened; scutal lobes dark brown, the median region more testaceous; scutellum dark brown; mediotergite more yellowish brown. Pleura almost entirely covered by a broad dark brown stripe, the posterior portion of the sternopleurite and the dorsal portions of the pteropleurite and pleurotergite obscure yellow. Halteres with the stems yellow, knobs broken. Legs with the fore coxæ dark brown, the remaining

³ Berlin. Ent. Zeitschr. 31 (1887) 182-183.

⁴ Journ. Fed. Malay States Mus. 14 (1928) 74-80.

coxæ and all trochanters obscure yellow; femora brown, the bases narrowly yellow, the tips narrowly but very conspicuously paling to yellow; tibiæ and tarsi pale brown, the outer segments of the latter darker. Wings (Plate 1, fig. 8) with a faint grayish or sandy tinge, the costal region more brownish yellow; stigma brown, subcircular, conspicuous; wing tip weakly suffused with brown; veins brown. Venation: Sc relatively long, Sc₁ ending about opposite five-sixths the length of Rs, with Sc₂ at its tip; Rs leaving R at an acute angle, the central portion more arcuated; R₂ and free tip of Sc₂ in transverse alignment; m-cu close to fork of M.

Abdomen brownish black, the intermediate segments more bicolorous, their bases broadly obscure yellow. Male hypopygium (Plate 2, fig. 32) with the caudal margin of tergite, 9t, evenly and convexly rounded. Basistyle, b, elongate, the ventromesal lobe stout, its apex narrowed into a slender glabrous lobe. A single dististyle, d, the body of which is a small oval mass, much smaller than the lobe of basistyle; rostral prolongation a long, pale yellow, gently curved blade, at near midlength on outer margin with small setalike spine. Gonapophyses, g, with the mesal-apical lobe long and narrow, the margin of the blade not transversely corrugated, as in members of the *pendleburyi* group.

Habitat.—China (Szechwan).

Holotype, male, Chengtu, altitude 1,800 feet, April 18, 1932 (*Franck*). Paratopotype, male, April 26, 1932 (*Franck*).

The general appearance of the present fly is much as in various members of the *pendleburyi* group of the subgenus, all of which have the surface of the gonapophyses with a delicate transverse corrugation, whereas in this insect the apophyses are quite smooth. The yellow femoral tips and the peculiar structure of the basistyle (coxite) will readily separate the present fly from all other regional members of *Limonia*.

LIMONIA (LIMONIA) QUANTILLA sp. nov. Plate 1, fig. 9; Plate 2, fig. 33.

General coloration of mesonotum reddish brown, the præscutum with a capillary dark brown median stripe; dorsal half of thoracic pleura darkened, the ventral portion suddenly light yellow; legs brownish black; wings tinged with brown; m-cu about one-third its length beyond fork of M; male hypopygium with the caudal margin of tergite truncated; basistyle slender, the ventromesal lobe basal in position; ventral dististyle with the rostral prolongation slender, without spines.

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

Rostrum and palpi black. Antennæ brownish black throughout; flagellar segments oval. Head dark brown; anterior vertex reduced to a linear strip.

Pronotum pale brown. Mesonotal præscutum reddish brown, with a capillary darker brown stripe extending from the cephalic margin, a little widened behind on posterior third; scutal lobes reddish brown, their mesal edges narrowly darkened; scutellum infuscated; mediotergite reddish brown. Pleura with the dorsal portion darkened, the ventral half suddenly pale yellow. Halteres dusky, the base of stem very narrowly pale. Legs with the coxæ and trochanters light yellow; remainder of legs brownish black, only the femoral bases restrictedly brightened. Wings (Plate 1, fig. 9) rather strongly tinged with brown; stigma oval, slightly darker brown; veins and macrotrichia darker brown. Venation: Sc_1 ending about opposite five-sixths the length of R_s , Sc_2 at its tip; R_s only a little longer than R_{2+3} ; free tip of Sc_2 and R_2 in transverse alignment; m-cu between one-third and one-half its length beyond the fork of M.

Abdominal tergites dark brown, the outer sternites more obscure yellow; hypopygium dark brown. Male hypopygium (Plate 2, fig. 33) with the tergite, 9*t*, narrowed outwardly, the apex truncate, all setæ not far from margin. Basistyle, *b*, elongate, the cushionlike ventromesal lobe on basal half, provided with abundant erect setæ. Dorsal dististyle a powerful blade, the tip decurved. Ventral dististyle, *vd*, with the body of style an oval pale lobe, set with long erect setæ that are fully as long as the diameter of the lobe; rostral prolongation a long yellow curved rod, of blade, without evident spines. Gonapophyses, *g*, with the mesal-apical lobe ending bluntly but with the tip directed laterad into a point.

Habitat.—Sumatra (west coast).

Holotype, male, Fort de Kock, altitude 920 meters, 1926 (*Jacobson*).

Limonia (Limonia) quantilla is one of the smallest species of the subgenus so far made known. It is allied to the larger *L. (L.) flavohumeralis* Alexander and *L. (L.) melanopleura* Alexander, both of the Philippines, all three forms having the same general structure of the male hypopygium, but with the details different, especially in the tergite. The coloration of the body and position of m-cu further separate the present fly from the two species mentioned. The even smaller *L. (L.) infantula* Ed-

wards (Borneo) belongs to a distinct group of the subgenus, the male hypopygium having lost the dorsal dististyle.

LIMONIA (DICRANOMYIA) RECTIDENS sp. nov. Plate 1, fig. 10; Plate 3, fig. 34.

Belongs to the *punctulata* group; a series of five or six brown clouds in cell C; male hypopygium with the ventral dististyle relatively small, the rostral prolongation long and slender, with two small straight spines placed on its lateral face near base; mesal-apical lobe of gonapophysis a simple acute blackened point.

Male.—Length, about 4 to 4.2 millimeters; wing, 4.8 to 5.

Female.—Length, about 5 to 5.5 millimeters; wing, 5.5 to 6.

Rostrum gray; palpi and antennæ black. Head dark gray.

Mesonotum gray, the præscutum with a median dark brown stripe that is more or less constricted opposite the level of the humeri, in cases weakly split by a pale vitta; lateral stripes less distinctly indicated; median region of scutum and the scutellum more testaceous. Pleura dark gray. Halteres pale, the knobs infuscated. Legs with the coxæ dark brown; trochanters obscure yellow; femora brownish yellow, the tips broadly blackened; tibiæ and tarsi brown, the outer segments of the latter dark brown. Wings (Plate 1, fig. 10) grayish, with a sparse darker brownish gray pattern, arranged as in the *punctulata* group; a series of five or six brown clouds in cell C; veins brown. Costal fringe moderately long. Venation: Tip of R_{2+3} strongly upturned at outer end and here without trichia.

Abdomen, including hypopygium, brownish black. Male hypopygium (Plate 3, fig. 34) with the tergite, 9*t*, notched medially, the caudal margin of the lobes thickened and provided with numerous setæ. Ventral dististyle, *vd*, small, as compared with *subpunctulata*; rostral prolongation long and slender, with two small straight spines that are inserted close together near the base of the prolongation and on its lateral aspect; inner spine a trifle longer than the outer; both spines shorter than the apex of the prolongation beyond the outer spine. Gonapophyses, *g*, with the mesal-apical lobe a short simple acute blackened point.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 4,200 feet, June 29, 1932 (*Franck*). Allotopotype, female, altitude 4,800 feet, July 4, 1932 (*Franck*). Paratopotypes, several males and females, altitude 3,500 feet, August 16, 1931; 4,200 feet, June 29 to July 2, 1932; 4,500 feet, July 29, 1929 (*Franck*). Paratypes, males, Kwanhsien, altitude 4,000 feet, August 16, 1930 (*Franck*).

Limonia (Dicranomyia) rectidens is most nearly allied to the Formosan *L. (D.) subpunctulata* Alexander, in the bispinous rostral prolongation of the male hypopygium, differing most evidently in the spotted costal cell of the wing, and the much smaller ventral dististyle of the male hypopygium. The status of *L. (D.) fascipennis* (Brunetti) has been discussed by the writer in another paper.⁵

LIMONIA (RHIPIDIA) FORMOSANA EXPANSIMACULA subsp. nov. Plate 1, fig. 11.

Male.—Length, about 3.3 to 3.8 millimeters; wing, 4 to 4.5.

Similar to typical *formosana* (Alexander), differing especially in the small size and details of the wing pattern.

Legs with the femora pale brown, the tips narrowly whitish, preceded by a broader subterminal ring. Wings (Plate 1, fig. 11) with the dark area at origin of Rs and tip of Sc₁ broadened behind, much wider in cell R than in the costal field, not quite reaching vein M.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 4,800 feet, July 4, 1932 (Franck). Paratopotype, male.

Limonia (Rhipidia) formosana (Alexander), first described as a variety of *rostrifera* (Edwards), is a valid species, with the dark area at midlength of cell Sc very restricted, not involving cells C or R, and without darkening at tip of vein 1st A.

HELIUS (RHAMPHOLIMNOBIA) PAPUANUS sp. nov. Plate 1, fig. 12; Plate 3, fig. 35.

Size small (wing, male, under 4.5 millimeters); mesonotal præscutum and scutum with orange or brownish orange stripes, the lateral borders and interspaces darker; r-m at or close to fork of Rs; m-cu strongly pointed at inner end; m-cu nearly its own length before fork of M; dark area in outer end of cell R in alignment with the m-cu crossvein, not connected with the broken crossband at midlength of cells R and M.

Male.—Length, excluding rostrum, about 4 millimeters; wing, 4 to 4.2; rostrum, alone, about 0.6.

Rostrum black; palpi whitish. Antennæ with scape and pedicel black; first flagellar segment pale, remainder of flagellum dark brown, somewhat darker outwardly. Head gray, the anterior vertex narrow, about equal in width to the diameter of scape.

Pronotum obscure yellow, darkened laterally. Cervical sclerites elongate, dark brown. Anterior lateral pretergites whitish.

⁵ Philip. Journ. Sci. 46 (1931) 282.

Mesonotal præscutum with the disk largely covered by three orange or brownish orange stripes, the interspaces pale brown; lateral borders of sclerite narrowly dark brown; scutal lobes extensively orange or brownish orange, margined with brown; scutellum and mediotergite dark brown. Pleura traversed by a very broad dark brown stripe, the dorsopleural region and ventral sternopleurite more yellowish. Halteres pale, the knobs weakly darkened. Legs with the coxæ dark brown, the mid-coxæ paler basally; trochanters dark brown; femora obscure yellow basally, passing into dark brown, immediately before tip with a very narrow yellow ring; tibiæ dark brown, the extreme base and tip pale; tarsi chiefly obscure yellow. Wings (Plate 1, fig. 12) whitish, the prearcular region, cells C and Sc, and the wing tip in cell R₃, light yellow; a restricted reticulate brown pattern, including the stigma, two larger areas in cell R, and narrow transverse spots in most of the cells, including two in each of cells R₅, 2d M₂ and M₃; m-cu and a spot in cell R above it narrowly brown; a wider, interrupted, brown crossband across cells R and M, terminating at end of vein 1st A; a brown spot at arculus and another in the axillary region of cell 2d A; most of the described brown spots and dots tend to form interrupted brown crossbands that lie more or less parallel with one another; veins pale brown, somewhat darker in the clouded areas. Costal fringe long and conspicuous; no macrotrichia on anterior branch of Rs or on anal veins. Venation: r-m at or just before fork of Rs; anterior branch of Rs diverging very strongly from R₄₊₅, cell R₃ at margin thus being very wide; inner end of cell 1st M₂ strongly pointed; m-cu nearly its own length before fork of M; cell 2d A relatively narrow.

Abdomen dark reddish brown, the caudal and lateral portions of the segments somewhat darker brown; hypopygium dark. Male hypopygium (Plate 3, fig. 35) with the outer dististyle, *od*, slender, its tip weakly dilated; the surface indistinctly roughened. Inner dististyle, *id*, longer, the apical third narrowed, the margin of style with conspicuous setigerous tubercles. Ædeagus, *a*, small. Gonapophyses, *g*, recurved, the tips acute.

Habitat.—New Guinea, New Britain.

Holotype, male, Laup, New Britain (*Dr. Hosking*); Macleay Collection, University of Sydney, through Mr. Frank H. Taylor. Paratype, male, Friedrich-Wilhelmshafen, New Guinea, June, 1896 (*Biró*); Hungarian National Museum.

Helius (*Rhampholimnobia*) *papuanus* is most nearly allied to the subgenotype, *H. (R.) reticularis* (Alexander), of Java, Bor-

neo, Celebes, Mindanao, and Luzon, differing in the diagnostic features listed above, especially the small size, the less heavily reticulated wing pattern, and the venation. The paratype had been recorded earlier by Riedel⁶ as *Geranomyia annulipes* Hutton, which is now known as *Limonia (Zelandoglochina) huttoni* (Edwards).

ORIMARGA (ORIMARGA) LATISSIMA sp. nov. Plate 1, fig. 13; Plate 3, fig. 36.

General coloration dark gray; halteres pale yellow throughout; legs black; wings unusually broad, brownish yellow; costal fringe (male) short; macrotrichia on outer end of vein R_3 ; R_{1+2} only a little short than R_{2+3+4} ; male hypopygium with one pair of gonapophyses yellow, densely set with spinous points.

Male.—Length, about 7 millimeters; wing, 7 by 2.2.

Female.—Length, about 8 millimeters; wing, 7.3 by 2.2.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval, the outer segments gradually smaller. Head dark gray.

Mesonotum and pleura uniformly dark gray. Halteres pale yellow throughout. Legs with the coxæ and trochanters dark blackish gray; remainder of legs black, the femoral bases somewhat paler. Wings (Plate 1, fig. 13) unusually broad, especially in male, widest just opposite or slightly beyond termination of vein 2d A; wings tinged with brownish yellow, cells C and Sc somewhat paler yellow; stigmal region vaguely darker; veins pale. Costal fringe abundant, short. Macrotrichia of veins relatively abundant, there being from ten to twenty on distal third or more of vein R_3 . Venation: R_{1+2} elongate, only a little shorter than R_{2+3+4} ; free tip of Sc_2 very vague, about its own length before R_2 ; cell 2d A very wide.

Abdomen, including hypopygium, black. Male hypopygium (Plate 3, fig. 36) with the phallosomic armature, *p*, conspicuous, consisting in part of a pair of spinous yellow lobes, united basally into a common stem, the entire outer end densely set with spinous points.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 3,600 feet, July 27, 1932 (*Franck*). Allotopotype, female, altitude 4,200 feet, June 29, 1932 (*Franck*). Paratopotype, male, altitude 4,800 feet, July 4, 1932 (*Franck*).

There are now seven species of *Orimarga* known from China, all of which have been taken at various altitudes on Mount

⁶ Ann. Mus. Nat. Hungarici 18 (1921) 131.

Mesonotum dark brownish gray. Dorsal pleurites dark brown, the sternopleurite and meral region light reddish yellow. Halteres pale, the knobs weakly infuscated. Legs with the coxæ yellowish testaceous, the fore coxæ a little darker; trochanters yellow; femora brown, the tips darker; remainder of legs dark brown. Wings (Plate 1, fig. 14) with a grayish brown tinge, the prearcular and costal regions paler, more whitish; veins pale brown. Costal fringe short; macrotrichia of veins beyond cord abundant and relatively long, on R_3 with about a score. Venation: Sc_1 ending shortly before fork of R_s ; free tip of Sc_2 faint, far before R_2 , at near mid-distance between the latter vein and tip of Sc_1 ; R_{1+2} a little more than one-half R_{2+3} ; r-m and basal section of M_{1+2} both pale, nearly in transverse alignment; cell 2d A relatively narrow.

Abdomen brownish black; hypopygium a little brighter. Male hypopygium (Plate 3, fig. 37) with the mesal face of basistyle, b , at cephalic end with a large setiferous lobe. Outer dististyle at near two-thirds the length narrowed and bent at nearly a right angle into a long apical spine. Inner dististyle, id , with a single row of setæ along the face, additional to a small group on the inner margin at near midlength. Phallosome, p , with the ædeagus short, the gonapophyses appearing as slender, gently curved hooks.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 4,000 feet, July 14, 1931 (Franck).

The relations of this distinct species to the other described Chinese species of *Orimarga* are shown by the key accompanying the preceding species.

ORIMARGA (ORIMARGA) RISBECI sp. nov. Plate 1, fig. 15.

General coloration gray, the præscutum with three brown stripes; R_{1+2} ending opposite the fork of M_{3+4} and before mid-length of the distance between end of Sc_1 and wing apex; m-cu at near one-third the length of R_s .

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

Rostrum brown; palpi black. Antennæ black throughout; flagellar segments oval, terminal segment shorter than penultimate. Head gray.

Mesonotal præscutum gray, with three brown stripes, the broad median stripe slightly divided by a capillary gray vitta; scutal lobes with brown centers; posterior sclerites of mesonotum gray. Pleura gray, the ventral sternopleurite darker. Halteres pale, the knobs somewhat more yellow. Legs with the coxæ

brownish yellow, the fore and middle coxæ more pruinose; remainder of legs yellowish brown, the outer tarsal segments darker. Wings (Plate 1, fig. 15) tinged with whitish, the prearcular and costal cells slightly more yellowish, the bases of the anal cells a little darkened; veins pale. Macrotrichia on almost the entire length of the veins beyond cord, there being more than 30 on R_2 . Venation: Sc_1 ending beyond midlength of R_s ; tip of R_{1+2} opposite fork of M_{3+4} and before midlength of distance between end of Sc_1 and apex of wing; R_s angulated at origin; R_{2+3} a little shorter than R_{1+2} , without trichia; R_2 a little longer than r-m; m-cu about opposite one-third to two-fifths the length of R_s .

Abdomen brownish black, the genital segment ochereous, the ovipositor horn yellow.

Habitat.—New Caledonia.

Holotype, female, Plum Farm, January, 1929 (*Risbec*).

I take great pleasure in naming this species in honor of the collector, Prof. Jean Risbec. The fly is closest to *Orimarga* (*Orimarga*) *incornata* Skuse (New South Wales), differing in the coloration of the thorax and the details of venation, especially the shorter R_{1+2} and the position of m-cu.

HEXATOMINI

HEXATOMA (ERIOCERA) MINENSIS sp. nov. Plate 1, fig. 16.

Belongs to the *verticalis* group; mesonotum brownish gray, the præscutum with three dark brown stripes; vertical-tubercle yellow, its summit more polished brown; knobs of halteres blackened; femora brownish black on outer half; wings strongly tinged with yellowish brown; stigma oval, dark brown; longitudinal veins narrowly and vaguely seamed with darker; numerous macrotrichia on outer radial veins; abdominal tergites black, the shield of ovipositor bright orange.

Female.—Length, about 16 millimeters; wing, 13.

Rostrum short, brownish yellow; palpi black. Antennæ with the scape and pedicel yellow, flagellum broken. Head with vertex, including the vertical tubercle, yellow, the latter somewhat polished brown at summit; sides of vertex behind darker and sparsely pruinose.

Mesonotum brownish gray, the præscutum with three dark brown stripes, the middle one entire; scutellum more heavily dusted with light gray. Pleura dark brown, more or less pruinose. Halteres yellow basally, the knobs and outer ends of stems blackened. Legs with the coxæ brown, pruinose; tro-

chanters yellow; femora brown on basal half, the outer half passing into brownish black; tibiæ brown, the tips a little darker; tarsi brownish black. Wings (Plate 1, fig. 16) strongly tinged with yellowish brown; cells C and Sc clearer light brown; stigma oval, usually small, dark brown; longitudinal veins narrowly and vaguely seamed with darker; veins brown, the outer radial veins and the cord darker brown. Costal fringe abundant, moderately long; abundant macrotrichia on outer radial veins, there being a series of about twenty-five on R_3 . Venation: R_2 about one-half R_{1+2} , subequal to R_{2+3} ; outer medial veins tending to become evanescent, as common in this genus; dark fold behind vein 2d A faint and little evident.

Abdominal tergites black; basal sternites a little paler. Ovipositor with its shield bright orange; cerci blackened at bases, more reddish on outer half; cerci of moderate length, slender.

Habitat.—China (Szechwan).

Holotype, female, Chengtu, along banks of Min River, altitude 1,700 feet, August 26, 1932 (*Franck*). Paratopotype, female.

Hexatoma (Eriocera) minensis is closest to *H. (E.) nipponensis* (Alexander), of Japan, differing most conspicuously in the wing pattern, presence of only three præscutal stripes, and the yellow vertical tubercle.

HEXATOMA (ERIOCERA) DIPLONEURA sp. nov. Plate 1, fig. 17.

Belongs to the *verticalis* group; size small (wing, female, under 8 millimeters); mesonotum almost uniformly dark brown, the præscutum with indications of three more blackish stripes; femora brownish yellow, the tips narrowly blackened; wings with a brownish tinge; no macrotrichia on outer branches of R_s , excepting a sparse series on R_5 ; cell M_1 lacking; a chitinized fold or weak spurious vein immediately behind and paralleling vein 2d A; valves of ovipositor unusually long and slender.

Female.—Length, about 7.5 to 9 millimeters; wing, 6 to 7.5.

Rostrum greatly reduced; palpi black. Antennæ with scape and pedicel obscure yellow to brownish yellow; flagellum broken. Head with vertical tubercle dark brown, entire; posterior portion of head dark gray pruinose.

Mesonotum almost uniformly dark brown, with indications of three more blackish stripes on præscutum. Pleura dark brown. Halteres obscure brownish yellow, the knobs brownish black. Legs with the coxæ dark brown; trochanters obscure yellow; femora brownish yellow, the tips narrowly blackened; tibiæ and tarsi brownish black. Wings (Plate 1, fig. 17) with a brownish tinge, cells C and Sc slightly darker; stigma oval, slightly darker

than the ground color; veins brown. Costal fringe abundant and relatively long; no macrotrichia on outer radial veins, excepting a sparse series on vein R_5 . Venation: Cell M_1 lacking; a second vein or sclerotized fold lying immediately behind and parallel to vein 2d A.

Abdomen black. Ovipositor with the valves, especially the cerci, unusually long and slender, nearly straight; hypovalvæ extending to just beyond midlength of cerci, very slender.

Habitat.—China (Szechwan).

Holotype, female, Chengtu, along banks of Min River, altitude 1,700 feet, August 26, 1932 (*Franck*). Paratopotype, female.

Hexatoma (Eriocera) diploneura is readily told from *H. (E.) nipponensis* (Alexander) and other allied forms, by the diagnostic features listed above. The small size, glabrous outer radial veins, double vein 2d A, together with the unusually long and slender cerci, readily define the species.

GYNOPLISTIA (GYNOPLISTIA) NOVEM-PECTINATA sp. nov. Plate 1, fig. 18; Plate 3, fig. 38.

Belongs to the *jucunda* group; antennæ (male) 16-segmented, with nine branched segments, the branches elongate; head and thorax polished black; halteres uniformly blackened; wings whitish, with a restricted dark pattern; abdomen with segments one, seven, eight, and nine black, the remainder yellow, more darkened on their pleural portions; male hypopygium with a single dististyle that is tridentate at apex, the inner tooth a slender curved spine.

Male.—Length, about 8 millimeters; wing, 7.

Described from an alcoholic specimen.

Rostrum and palpi dark brown. Antennæ with scape and pedicel light yellow; axis of flagellum yellow, the branches and subapical portions of the axis of segments darkened, giving a bicolorous appearance to the individual segments, the ends being yellow, the central portion infuscated; apical simple segments darkened; flagellum with nine long branched segments, the antennal formula being $2 + 2 + 7 + 5$; first branch a trifle longer than the last branch, the latter about four times the segment; longest branch (about the fifth or sixth flagellar segment) about two-fifths as long as the entire flagellum. Head black.

Thorax polished black, the dorsopleural membrane paler; any pruinosity normally present destroyed by immersion. Halteres uniformly blackened. Legs with the coxæ black, clothed with very conspicuous elongate setæ; trochanters dark brown; remain-

der of legs broken. Wings (Plate 1, fig. 18) with the ground color whitish; cells C and Sc slightly more yellow; a restricted brown pattern, including small areas at arculus and origin of Rs, with a larger triangular area, including the stigma and anterior cord; a paler cloud in cells M, Cu, and 1st A at the level of Rs; posterior cord and outer end of cell 1st M_2 very narrowly seamed with brown; wing tip narrowly and very vaguely darkened; veins brown. Venation: Sc_1 ending opposite fork of Rs, Sc_2 at its tip; R_{2+3+4} subequal to r-m; R_{1+2} a little longer than R_2 ; cell M_1 lacking.

Abdomen with basal segment black; segments two to six light yellow, the lateral portions extensively darkened, becoming deeper and more clearly defined on outer segments; terminal segments uniformly blackened. Male hypopygium (Plate 3, fig. 38) with the dististyle, *d*, single, tridentate at tip, the inner spine long and slender, curved; surface of style with numerous microscopic punctures. Arms of phallosome, *p*, appearing as black slender structures, the outer margins microscopically roughened.

Habitat.—Central Celebes (Bontoe Batoe).

Holotype, alcoholic male, Latimodjong Mountains, altitude 4,500 to 6,000 feet, May 25, 1931 (*Clagg*).

The present species is most nearly allied to *Gynoplistia* (*Gynoplistia*) *jucunda* Osten Sacken and *G. (G.) octo-fasciata* Brunetti, both of South Celebes.

Key to the three Celebean species of the genus Gynoplistia.

1. Abdomen uniformly reddish yellow..... *jucunda* Osten Sacken.
Abdomen variegated with black..... 2.
2. Abdomen with segments two to seven obscure yellow, the caudal margins broadly dark brown to produce a fasciate appearance; head gray; halteres bright orange-yellow..... *octo-fasciata* Brunetti.
Abdomen with segments one, seven, eight and nine blackened, the intermediate sternites and tergites light yellow; head black; halteres uniformly blackened..... *novem-punctata* sp. nov.

All three members of the *jucunda* group discussed above have cell M_1 of the wings lacking and with a rather unusual number of simple terminal antennal segments in male, there being presumably eight in *jucunda* but only five in the present species. Antennal formula of *jucunda* male, 2 + 2 + 6 + ?; of *novem-punctata* male, 2 + 2 + 7 + 5; male of *octo-fasciata* unknown.

Elsewhere in the Australasian region half a dozen species of *Gynoplistia* occur in which cell M_1 is lacking (Papua, 1; southeastern Australia and Tasmania, 3; New Zealand, 2). These six species represent several distinct groups of the genus.

GYNOPLISTIA (GYNOPLISTIA) OCTO-FASCIATA Brunetti.

Gynoplistia 8-fasciata BRUNETTI, Rec. Indian Mus. 6 (1911) 307.

Described from a unique female specimen taken at Patunuang, South Celebes, January 1896 (*H. Fruhstorfer*). This type, in the Vienna Museum, was kindly loaned me for study by Dr. Hans Zerny in 1921. The following supplementary notes are given.

Female.—Length, 9 millimeters; wing, 7.7.

Dorsum of head densely covered with a microscopic appressed gray pubescence to appear like a heavy bloom. Antennæ apparently 16-segmented, the formula (female) being 2 + 2 + 4 + 8 or 2 + 6 + 8. Thoracic pleura with an appressed gray pubescence. Abdominal tergite one dark brown, tergites two to seven obscure yellow, with the caudal margin broadly, the lateral margins more narrowly dark brown; sternites similar, but the dark pattern much more extensive except on segments five and six, on sternites two to four including at least the posterior half of the segment. Genital segment and ovipositor yellowish horn color. Wings yellow, the pattern very much as in the female of *jucunda*; mark at origin of cells R and M distinct; band at level of origin of Rs interrupted in cell M.

The species differs from *jucunda* in the banded abdomen and in the gray coloration of the head.

ERIOPTERINI

GONOMYIA (LIPOPHLEPS) KERTÉSZIANA sp. nov. Plate 1, fig. 19; Plate 3, fig. 39.

General coloration dark brown; pleura with a yellowish white longitudinal stripe; wings grayish, sparsely variegated with bluish subhyaline areas; Sc ending just before origin of the strongly arcuated to feebly angulated Rs; abdomen, including hypopygium, dark brown; male hypopygium with three dististyles, the outer a long simple rod; phallosome without blackened hooks or spines.

Male.—Length, about 2.6 millimeters; wing, 3.

Rostrum and palpi black. Antennæ with the scape and pedicel black above, more yellowish beneath; flagellum brownish black, with the usual long verticils of this sex. Head pale yellow, the center of vertex shrunken, apparently darkened.

Pronotum and anterior lateral pretergites pale yellow. Mesonotum dark brown, the scutellum a very little brighter. Pleura blackish, with a yellowish white longitudinal stripe. Halteres dusky, the extreme apices of the knobs obscure yellow. Legs with the coxæ and trochanters obscure testaceous yellow;

remainder of legs broken. Wings (Plate 1, fig. 19) grayish, with bluish subhyaline areas in cells Cu, 1st M_2 and M_3 ; veins pale. Costal fringe long and conspicuous. Venation: Sc_1 ending just before origin of the strongly arcuated or angulated Rs; m-cu near fork of M.

Abdomen, including hypopygium, dark brown. Male hypopygium (Plate 3, fig. 39) with three dististyles, the outer, *od*, a simple glabrous rod; second style clavate, its outer surface densely set with recurved black spines; inner style, *id*, fleshy, with long setæ, including a group of three very powerful setæ on basal half of style. Phallosome without blackened hooks or spines.

Habitat.—New Guinea.

Holotype, male, Simbang, Huon Gulf, July, 1898 (*Biró*).

I take great pleasure in dedicating this fly to the memory of Dr. Koloman Kertész, former custodian of Diptera in the Hungarian National Museum, to whom I express my great personal indebtedness over a period of many years. By Edwards's key to the Oriental species of *Lipophleps*, the present species runs to *Gonomyia (Lipophleps) diffusa* (de Meijere), a very different species. As usual in this group of Tipulidæ, the structure of the male hypopygium furnishes the most important specific characters. The specimen had earlier been identified as being *Lipophleps brevivena* Skuse by Riedel (No. 25).

GONOMYIA (LIPOPHLEPS) AQUILA sp. nov. Plate 1, fig. 20; Plate 3, fig. 40.

Mesonotum dark brownish gray, the scutellum broadly margined with yellow; pleura striped longitudinally with yellowish white; femora yellow, with a broad black subterminal ring; wings whitish subhyaline and pale brown, the arcular and stigmal areas darker brown; abdominal segments dark brown, ringed caudally with yellow; male hypopygium with the outer dististyle blackened, forked at base into two arms, the outer one longer, glabrous, the inner arm terminating in an acute spine, the dilated apical portion with abundant setæ; phallosome depressed, each outer lateral angle produced into a blackened conical horn.

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

Rostrum and palpi black. Antennæ with scape and pedicel dark beneath, yellow above; flagellum brownish black. Head yellow, the center of vertex with a dark area.

Pronotum and pretergites yellow. Mesonotal præscutum and scutum dark brownish gray, the latter with a small point on caudal-lateral portion; scutellum dark basally, broadly margined behind with yellow; mediotergite dark behind, variegated with

yellow on cephalic-lateral angles, the coloration forming a more or less complete crossband at near midlength of the sclerite. Pleura dark, with a ventral longitudinal yellowish white stripe extending from the fore coxæ to base of abdomen. Halteres yellow, the bases of knobs darkened. Legs with fore coxæ whitened, remaining coxæ yellowish testaceous; trochanters yellow; femora yellow, with a broad black subterminal ring that is about two or three times as wide as the pale apex; tibiæ and tarsi obscure yellow, the outer tarsal segments darkened; in cases, the femora are more brownish yellow, the black ring preceded and followed by clearer yellow. Wings (Plate 1, fig. 20) relatively broad, the disk variegated with whitish subhyaline and pale brown; darker brown areas at arculus and stigma; the pale ground areas are arranged as more or less complete crossbands before the cord and at about one-third the length of the wings, in median field and as conspicuous pale areas before and beyond the stigma; veins pale, darker in the clouded areas. Venation: Sc short, Sc₁ ending a short distance before origin of Rs; m-cu close to fork of M.

Abdomen dark brown, the segments narrowly but conspicuously ringed caudally with yellow, most distinct on tergites; hypopygium reddish. Male hypopygium (Plate 3, fig. 40) with the outer dististyle, *od*, profoundly bifid, blackened, the outer arm slender, sinuous, glabrous; inner arm shorter, the outer half a little dilated, terminating in a long straight black spine, the dilated portion with numerous, long, pale, appressed setæ. Inner dististyle pale, terminating in the usual two fasciculate setæ, the apex and cephalic margin of style with long normal setæ. Phallosome, *p*, with each outer lateral angle terminating in a stout, curved, blackened horn.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 4,200 feet, July 2, 1932 (*Franck*). Paratopotypes, 2 males, altitude 4,800 feet, July 4, 1932 (*Franck*).

The nearest ally of the present fly is *Gonomyia (Lipophleps) angulifera* Alexander, likewise from Mount Omei, where it occurs at higher altitudes on the mountain. The details of the male hypopygia of the two flies are quite distinct.

GONOMYIA (LIPOPHLEPS) ANXIA sp. nov. Plate 1, fig. 21; Plate 3, fig. 41.

Belongs to the *skusei* group; pleural stripe broad and conspicuous, whitish; knobs of halteres obscure yellow; legs dark brown; wings with a strong brown tinge; male hypopygium with

the dististyle subterminal in position, fleshy; phallosome terminating in two flattened plates.

Male.—Length, about 3 millimeters; wing, 3.6.

Female.—Length, about 4 to 4.5 millimeters; wing, 4 to 4.3.

Rostrum and palpi brownish black. Antennæ brownish black throughout. Head with front pale; posterior portion of head chiefly gray, the occipital region variegated by yellow.

Pronotum and anterior lateral pretergites light yellow. Mesonotal præscutum and scutal lobes almost uniformly medium brown, the former very sparsely pruinose; median region of scutum and posterior borders of scutal lobes obscure yellow; scutellum chiefly yellow, the median region at base more darkened; mediotergite darkened. Pleura light brown, with a broad and conspicuous whitish longitudinal stripe, extending from the propleura to base of abdomen, involving also much of pteropleurite and pleurotergite. Halteres dusky, the knobs obscure yellow. Legs with the coxæ brownish testaceous, the fore coxæ slightly darker; trochanters obscure yellow; remainder of legs dark brown, only the femoral bases somewhat paler. Wings (Plate 1, fig. 21) with a strong brown tinge, the stigma scarcely evident; veins brown. Venation: Sc_1 ending about opposite one-third the length of the long Rs, Sc_2 at near middistance between tip of Sc_1 and origin of Rs; m-cu shortly before the fork of M.

Abdominal tergites dark brown, paler laterally; sternites paler; hypopygium brownish yellow. Male hypopygium (Plate 3, fig. 41) with the single dististyle, *d*, fleshy, subequal in length and size to the outer lobe of basistyle, tipped with the usual fasciculate seta; a long modified seta on outer face beyond mid-length. Phallosome, *p*, complex, in slide mounts constructed about as figured.

Habitat.—Sumatra (West Coast).

Holotype, male, Fort de Kock, altitude 920 meters, 1926 (Jacobson). Allotopotype, female. Paratopotypes, 2 females.

This is the first member of the *skusei* group of the subgenus to be described from the Dutch East Indian islands. It is most nearly allied to a group of three Philippine species, *acanthophallus* Alexander and *macilenta* Alexander, of Mindanao, and *longiradiialis* Alexander, of Luzon. All four species agree in having a single fleshy dististyle to the male hypopygium, this with a single specially modified seta on outer margin before apex. These species differ among themselves chiefly in the construction of the phallosome. The other species of the group from eastern

Asia, *sagittifera* Alexander, of Mindanao, and *sauteri* Alexander, of Formosa and western China, are very distinct in the structure of the dististyles of the hypopygium.

GONOMYIA (GONOMYIA) LATILOBATA sp. nov. Plate 1, fig. 22; Plate 3, fig. 42.

Mesonotum and scutal lobes brown, scutellum broadly yellow behind; pleura extensively yellow, the ventral sternopleurite and anepisternum darkened; wings yellowish brown, the diffuse stigma slightly darker; Sc relatively long, Sc₁ extending to about opposite one-fourth the length of Rs; male hypopygium with the dististyle bearing a large flattened dark lobe on outer margin; phallosome with two slender black spines.

Male.—Length, about 3.8 to 4.2 millimeters; wing, 4.5 to 5.

Rostrum and palpi dark brown. Antennæ brownish black throughout; flagellar segments oval. Head above chiefly dark brown.

Pronotum and anterior lateral pretergites light yellow. Mesonotal præscutum and scutal lobes brown, the humeral and lateral portions of the former broadly yellow; pseudosutural foveæ elongate, reddish brown; median region of scutum obscure yellow; scutellum darkened basally, the apical border broadly yellow; mediotergite darkened, the cephalic lateral portions yellow. Pleura extensively yellow, the ventral sternopleurite and ventral anepisternum darkened. Halteres pale, the knobs dusky. Legs with the coxæ darkened; trochanters obscure yellow; remainder of legs brown. Wings (Plate 1, fig. 22) with a yellowish brown tinge, the diffuse stigma slightly darker; veins pale brown. Costal fringe relatively long and conspicuous. Venation: Sc relatively long, Sc₁ extending to opposite or just beyond one-fourth the length of Rs, Sc₂ faint, not far from its tip; R₃ oblique, relatively long; m-cu at fork of M.

Abdominal tergites brown, the sternites more obscure yellow; hypopygium more yellowish. Male hypopygium (Plate 3, fig. 42) with outer lobe of basistyle, *b*, slender, pale. Dististyle, *d*, with a conspicuous flattened dusky lobe on basal half of outer margin, this provided with a single conspicuous seta near base; apical lobe of style with outer margin slightly darkened, the apex with two fasciculate and other normal setæ. Phallosome, *p*, consisting of a compressed pale ædeagus and two subtending, slightly unequal apophyses, both slender, needlelike, blackened.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 3,500 feet, August 17, 1931 (*Franck*). Paratopotypes, 2 males.

Allied to *Gonomyia* (*Gonomyia*) *omeiensis* Alexander, likewise from Mount Omei, differing especially in the details of venation, as the longer Sc and more oblique R_3 , and in the structure of the male hypopygium, especially of the dististyle and phallosome.

RHABDOMASTIX MINICOLA sp. nov. Plate 1, fig. 23.

General coloration light gray, the præscutum with indications of slightly darker stripes; antennæ dark brown; halteres pale yellow, the knobs almost white; femora brownish yellow, the tips narrowly infuscated; tibiæ and tarsi brown; wings grayish, the stigma slightly darker; no macrotrichia on veins beyond cord, excepting outer end of R_1 and R_{1+2} ; vein R_3 suberect; cell 1st M_2 elongate, with m-cu before midlength; m longer than basal section of M_3 .

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

Rostrum gray; palpi dark brown. Antennæ dark brown throughout, relatively short; flagellar segments oval, with verticils that exceed the segments; terminal segments apparently broken; in the unique type it appears that the basal segment of the flagellum is a fused unit of more than a single segment. Head gray.

Mesonotum almost uniformly light gray, the præscutum with indications of slightly darker stripes; pseudosutural foveæ black. Pleura and sternum gray. Halteres pale yellow, the knobs almost white. Legs with the coxæ gray; trochanters obscure yellow; femora brownish yellow, the tips narrowly infuscated; tibiæ and tarsi brown. Wings (Plate 1, fig. 23) grayish, the prearcular and costal regions pale yellow; stigma pale brown, only a little darker than the ground; veins brown. No macrotrichia on Rs or its anterior branch; M and its branches without trichia; a sparse series along outer section of vein R_5 . Venation: Sc_1 ends just beyond midlength of Rs, Sc_2 not evident; R_3 suberect, about equal to the distance along costa between R_{1+2} and R_3 ; R_4 and R_{2+3+4} subequal; m-cu short, before midlength of cell 1st M_2 ; m about twice as long as the basal section of M_3 .

Abdomen dark brown. Ovipositor with the long cerci horn color.

Habitat.—China (Szechwan).

Holotype, female, Chekiang, on boat on Min River, May 3, 1933 (*Franck*).

Rhabdomastix minicola is very different from *Rhabdomastix* (*Palæogonomyia*) *omeina* Alexander (Mount Omei, Szechwan), differing especially in the venation and coloration of the legs. Because of the sex of the unique type of the present fly, I am unable to place it definitely as to subgenus, but believe it will be found to belong to *Sacandaga* Alexander, with the antennæ short in both sexes.

ERIOPTERA (ERIOPTERA) HAPLOSTYLA sp. nov. Plate 1, fig. 24; Plate 3, fig. 43.

Male.—Length, about 4.5 millimeters; wing, 5.

Very similar in general appearance to *Erioptera* (*Erioptera*) *luteicornis* Alexander, likewise from the mountains of western China, differing in the details of structure of the male hypopygium.

General coloration pale yellow; mesonotal præscutum light reddish brown, somewhat darker medially. Basal four or five antennal segments yellow, the remainder passing into brown. Knobs of halteres blackened. Legs yellow, the tips of femora scarcely darkened. Wings (Plate 1, fig. 24) very pale yellowish white; veins pale yellow; macrotrichia light brown. Venation: m-cu long and gently sinuous; vein 2d A strongly sinuous, cell 1st A at midlength nearly three times as wide as at the narrowest point just before outer end. Abdomen dark brown; hypopygium brownish yellow. Male hypopygium (Plate 3, fig. 43) with the outer dististyle, *od*, simple, darkened, quite glabrous, its outer third narrowed. Inner dististyle, *id*, a shorter sinuous rod, the obtuse dusky apex with a number of setigerous punctures; on outer margin just before midlength with a small pale finger-like lobe that is tipped with a single small pale spine. Gonapophyses, *g*, appearing as nearly straight to gently curved darkened rods, the tips cultriform; each inner apophysis bearing at tip a small darkened peglike spine.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 7,000 feet, July 17, 1931 (*Franck*).

MOLOPHILUS TETRAGONUS sp. nov. Plate 3, fig. 44.

Belongs to the *gracilis* group and subgroup; general coloration of mesonotum light reddish yellow; antennæ (male) short; legs obscure yellow, wings light yellow; male hypopygium with two small spinous lobes at apex of each basistyle; outer dististyle with a dense brush of spinous setæ on outer half; inner

dististyle slightly dilated at apex, further produced laterad into a small apical point.

Male.—Length, about 3 millimeters; wing, 4.

Rostrum pale brown; palpi brownish black. Antennæ (male) short; basal segments pale, the outer segments a little darker. Head discolored in type, chiefly dark.

Thoracic dorsum almost uniformly light reddish yellow, the humeral region of præscutum clearer yellow; mediotergite somewhat darker. Pleura with dorsal sclerites reddish brown, the ventral sclerites more yellow. Halteres pale, the knobs broken. Legs with the coxæ and trochanters light yellow; remainder of legs slightly more obscured yellow, the terminal tarsal segments darker. Wings light yellow, veins somewhat darker; macrotrichia dark brown. Venation: R_2 lying almost in transverse alignment with the basal section of R_5 ; petiole of cell M_3 about twice m-cu; vein 2d A ending just before level of caudal end of m-cu.

Abdominal tergites dark brown, the sternites somewhat more brightened; hypopygium light yellow. Male hypopygium (Plate 3, fig. 44) with the dorsal lobe of basistyle, *db*, setiferous on basal two-thirds, thence suddenly narrowed into a very slender acute spine that is darkened only on outer third; ventral lobe of basistyle a similar spine of almost the same length but a little stouter, glabrous to base. Two dististyles, the outer, *od*, a long, yellow, ribbonlike structure, the distal half blackened, narrowed to an acute point at apex, the blackened portion on inner or lower face densely provided with long spinous setæ that are arranged in at least two ranks. Inner style, *id*, nearly as long, yellow, the apex slightly dilated into a darkened head that is further produced laterad into an apiculate point; capitate portion of style with a series of ten to twelve microscopic punctures along outer margin before the point.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 4,200 feet, June 29, 1932 (*Franck*).

Molophilus tetragonus is quite distinct from the other Palearctic species of the genus in the structure of the male hypopygium. The dense brush of setæ on the outer dististyle is somewhat suggestive of the condition in *M. triacanthus* Alexander (Japan), but all other characters are quite distinct.

ILLUSTRATIONS

[Legend: a, aedeagus; b, basistyle; d, dististyle; db, dorsal lobe of basistyle; g, gonapophysis; i, interbase; id, inner dististyle; mb, mesal lobe of basistyle; od, outer dististyle; p, phallosome; s, sternite; t, tergite; vd, ventral dististyle.]

PLATE 1

- FIG. 1. *Tipula (Vestiplex) deserrata* sp. nov.; venation.
 2. *Tipula (Vestiplex) kwanhsienana* sp. nov.; venation.
 3. *Tipula (Acutipula) dicladura* sp. nov.; venation.
 4. *Tipula bipendula* sp. nov.; venation.
 5. *Limonia (Libnotes) diphragma* sp. nov.; venation.
 6. *Limonia (Libnotes) chrysophæa* sp. nov.; venation.
 7. *Limonia (Libnotes) nigerrima* sp. nov.; venation.
 8. *Limonia (Limonia) coxitalis* sp. nov.; venation.
 9. *Limonia (Limonia) quantilla* sp. nov.; venation.
 10. *Limonia (Dicranomyia) rectidens* sp. nov.; venation.
 11. *Limonia (Rhipidia) formosana expansimacula* subsp. nov.; venation.
 12. *Helius (Rhampholimnobia) papuanus* sp. nov.; venation.
 13. *Orimarga (Orimarga) latissima* sp. nov.; venation.
 14. *Orimarga (Orimarga) basilobata* sp. nov.; venation.
 15. *Orimarga (Orimarga) risbeci* sp. nov.; venation.
 16. *Hexatoma (Eriocera) minensis* sp. nov.; venation.
 17. *Hexatoma (Eriocera) diploneura* sp. nov.; venation.
 18. *Gynoplistia (Gynoplistia) novem-pectinata* sp. nov.; venation.
 19. *Gonomyia (Lipophleps) kertésziana* sp. nov.; venation.
 20. *Gonomyia (Lipophleps) aquila* sp. nov.; venation.
 21. *Gonomyia (Lipophleps) anxia* sp. nov.; venation.
 22. *Gonomyia (Gonomyia) latilobata* sp. nov.; venation.
 23. *Rhabdomastix minicola* sp. nov.; venation.
 24. *Erioptera (Erioptera) haplostyla* sp. nov.; venation.

PLATE 2

- FIG. 25. *Tipula (Vestiplex) deserrata* sp. nov.; male hypopygium, details.
 26. *Tipula (Vestiplex) kwanhsienana* sp. nov.; male hypopygium, details.
 27. *Tipula (Acutipula) dicladura* sp. nov.; male hypopygium, details.
 28. *Tipula (Acutipula) platycantha* sp. nov.; male hypopygium, details.
 29. *Tipula bipendula* sp. nov.; male hypopygium, lateral aspect.
 30. *Tipula bipendula* sp. nov.; male hypopygium, dististyle.
 31. *Tipula bipendula* sp. nov.; male hypopygium, details.
 32. *Limonia (Limonia) coxitalis* sp. nov.; male hypopygium.
 33. *Limonia (Limonia) quantilla* sp. nov.; male hypopygium.

PLATE 3

- FIG. 34. *Limonia (Dicranomyia) rectidens* sp. nov.; male hypopygium.
35. *Helius (Rhampholimnobia) papuanus* sp. nov.; male hypopygium.
36. *Orimarga (Orimarga) latissima* sp. nov.; male hypopygium.
37. *Orimarga (Orimarga) basilobata* sp. nov.; male hypopygium.
38. *Gynoplistia (Gynoplistia) novem-pectinata* sp. nov.; male hypopygium.
39. *Gonomyia (Lipophleps) kertésziana* sp. nov.; male hypopygium.
40. *Gonomyia (Lipophleps) aquila* sp. nov.; male hypopygium.
41. *Gonomyia (Lipophleps) anxia* sp. nov.; male hypopygium.
42. *Gonomyia (Gonomyia) latilobata* sp. nov.; male hypopygium.
43. *Erioptera (Erioptera) haplostyla* sp. nov.; male hypopygium.
44. *Molophilus tetragonus* sp. nov.; male hypopygium.

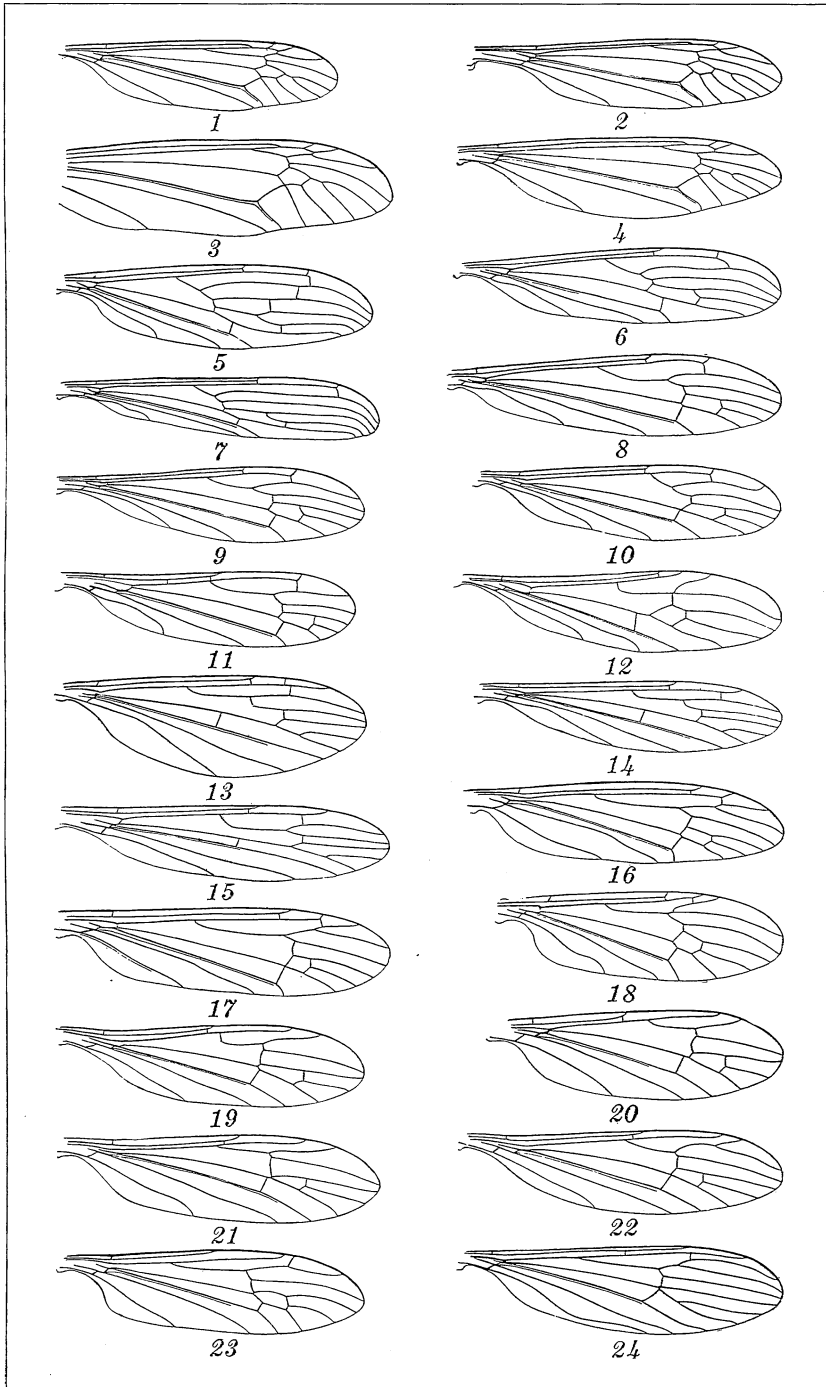


PLATE 1.

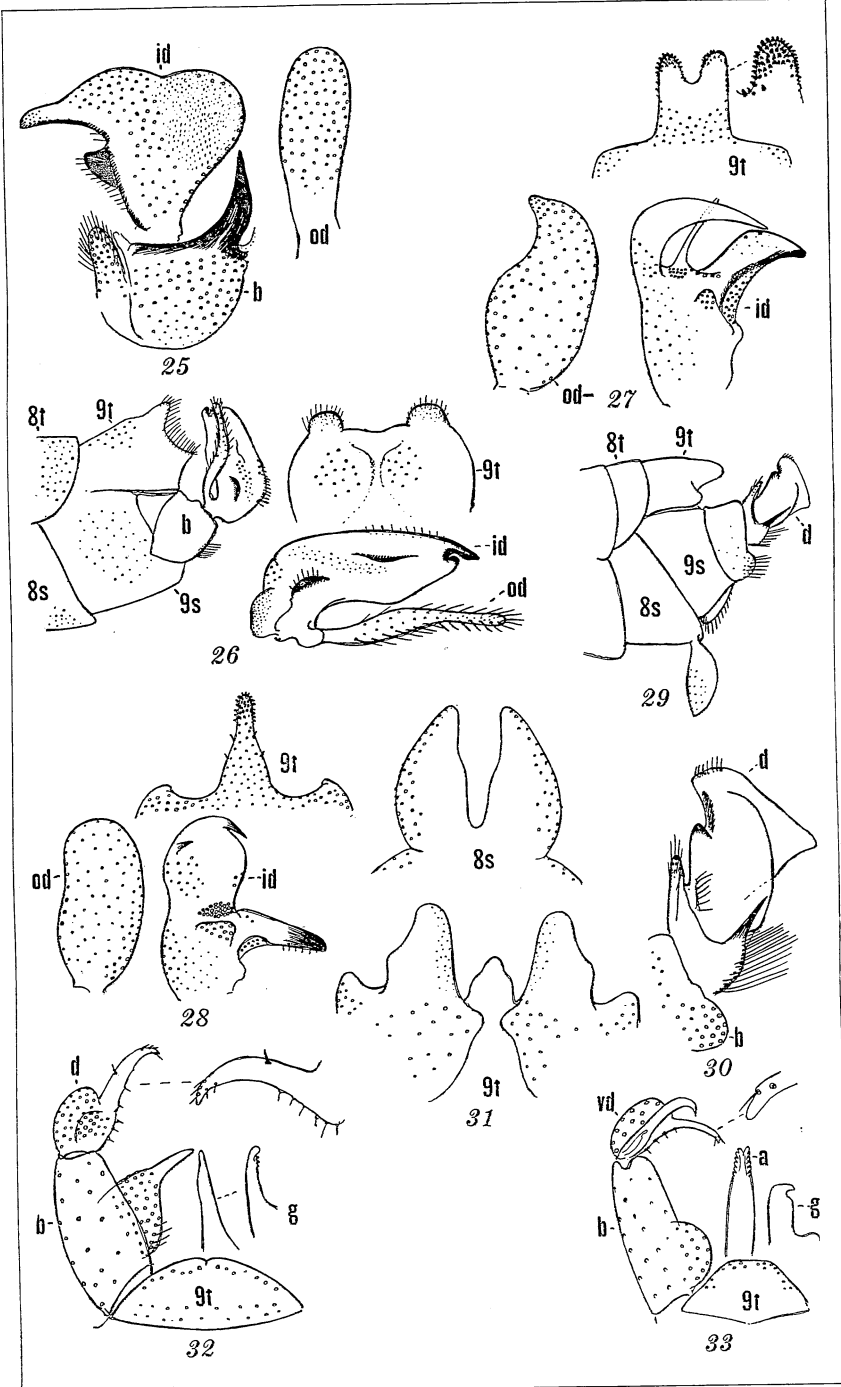


PLATE 2.

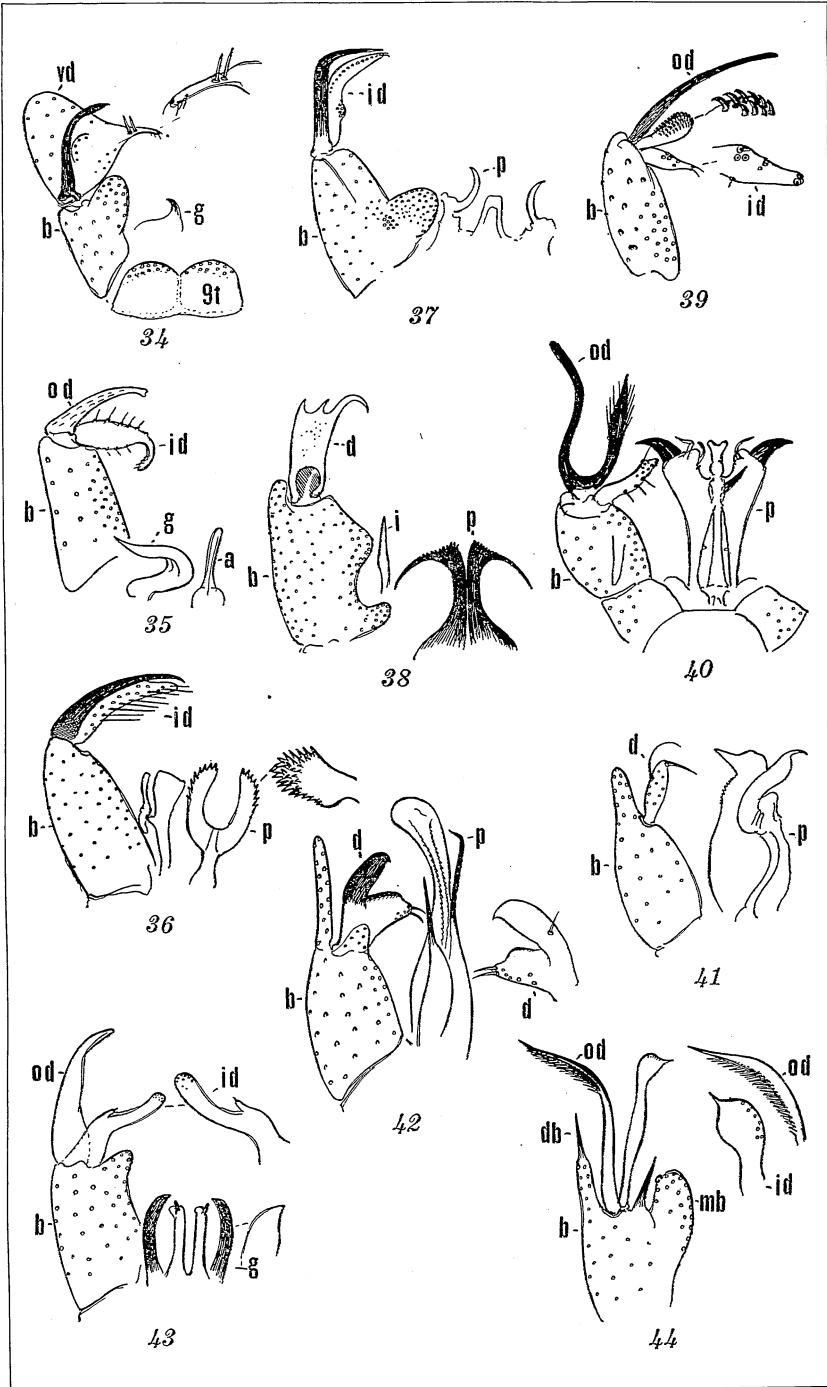


PLATE 3.