

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

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NEW OR LITTLE-KNOWN TIPULIDÆ FROM EASTERN ASIA (DIPTERA), XLII¹

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FOUR PLATES

The exceptionally interesting crane flies described at this time were taken at various stations on Mount Omei, Szechwan, western China, by Mr. Tsen Bao-chi. Mr. Tsen undertook the present trip during late May and early June, 1938, acting under the direction and guidance of the Reverend Mr. George Meredith Franck. In late May, great masses of snow still persisted at the higher altitudes on the mountain, and the relatively few species of Tipuloidea taken were virtually all winter and early spring forms, including no fewer than 8 species of Trichoceridæ. By mid-June at the summit, and progressively earlier at the various temples lower down the mountain (White Cloud, 9,000 feet; Chu Lao Tong, 6,500 feet; Flying Bridges, 3,000 feet), numerous Tipulidæ of the spring fauna were on the wing. I am greatly indebted to Mr. Franck and to Mr. Tsen for their further efforts to make known the rich tipulid fauna of Mount Omei. It may be noted that already some 325 species of crane flies have been secured at various altitudes on Mount Omei. In the present paper the recording of the genus *Lipsothrix* Loew adds another element to the unusually long list of genera and subgenera in the Chinese fauna.

TIPULINÆ

TIPULA (NIPPOTIPULA) BREVIFUSA sp. nov. Plate 1, fig. 1.

Mesonotum dark brown, lateral portions light yellow; nasus lacking; antennæ with pedicel clear orange, flagellum black; femora obscure yellow, with a narrow, dark-brown, subterminal ring; tibiæ and tarsi black; wings with ground color strongly infumed, conspicuously patterned with dark brown and whitish subhyaline; m-cu at or just before midlength of M_{3+4} , the ap-

¹ Contribution from the entomological laboratory, Massachusetts State College.

parent mediocubital fusion thus relatively short; abdomen reddish yellow, outer segments uniformly brownish black.

Male.—Length, about 35 to 36 millimeters; wing, 23 to 24; antenna, about 6 to 6.5.

Frontal prolongation of head yellowish gray above, blackened on sides, nasus lacking; palpi black. Antennæ with scape brown, pedicel clear orange, flagellum black; flagellar segments short, basal enlargement only moderately developed; verticils much longer than segments. Front and anterior orbits light yellow, posterior orbits more brownish yellow; center of vertex and occiput with a dark-brown median line.

Pronotum dark brown medially, yellow on sides. Lateral border of præscutum and dorsopleural membrane light yellow, contrasting with the dark-brown remainder of notum; median line of scutum narrowly pale. Pleura variegated dark brown and pale, dorsal pleurites darker than ventral pleurites, narrowly lined longitudinally with pale, including a more silvery area on ventral pleurotergite; meral region pale. Halteres with stem reddish brown, base of small knob dark brown, apex reddened. Legs relatively short and stout; coxæ pale brown, tips paler, posterior pair more uniformly darkened; trochanters testaceous brown; femora obscure yellow, with a narrow dark-brown ring before subequal pale apex; tibiæ and tarsi black, tibial bases restrictedly pale. Wings (Plate 1, fig. 1) with ground color strongly infumed, clear yellowish in costal region; a conspicuous dark-brown and whitish subhyaline pattern, as follows: Dark area at arculus, continued outwardly to wing margin as a broad seam along vein Cu, somewhat more expanded into cell M at near midlength of vein; a small cloud at origin of Rs; stigma darker, involving also the anterior cord, enclosing a small pale area just above fork of Rs; small marginal darkenings at ends of veins R_{4+5} to 2d A, these diffuse and more or less confluent at margin though variegated by small cream-colored droplets at ends of cells; whitish subhyaline areas chiefly in radial field, before and beyond origin of Rs, and post-stigmal in outer radial cells; a narrow oblitative streak along posterior edge of cell 1st M_2 ; veins brownish yellow, darker in clouded portions. Venation: Rs more than twice as long as m-cu, the latter at or just before midlength of M_{3+4} .

Abdomen relatively long, reddish yellow, tergites more darkened sublaterally, becoming more extensively so on outer segments, hypopygium and preceding segments uniformly dark-

ened; lateral borders of tergites narrowly buffy. Hypopygium large, massive.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Flying Bridges Temple, altitude 3,000 feet, June 1, 1938 (*Tsen*). Paratopotype, male.

Tipula (*Nippotipula*) *brevifusa* is quite distinct from its two closest allies, *T. (N.) anastomosa* Edwards, of the Federated Malay States, and *T. (N.) pulcherrima* Brunetti, of the Himalayan Region. It differs especially in the coloration of the wings and in the venation, notably the distal position of m-cu which gives the impression of a short mediocubital fusion.

TIPULA (VESTIPLEX) ERECTILOBA sp. nov. Plate 1, fig. 2; Plate 2, figs. 25 and 26.

General coloration of head and thorax gray; antennæ (male) very short, 12-segmented; mesonotal præscutum with three darker gray stripes; halteres elongate, obscure yellow, knobs weakly darkened; legs brownish black to black; wings fulvous brown, variegated with darker brown and yellowish-white areas, the latter including major markings across base of cell 1st M_2 and at near two-thirds length of cell M; inner end of cell 1st M_2 pointed; basal abdominal segments reddish brown, tergites narrowly bordered laterally with black, outer segments uniformly darkened; male hypopygium with tergite a partly blackened saucer, cephalic portion elevated into an erect median lobe; caudal border of tergite with a linear median split; inner dististyle unusually broad and simple, its beak reduced to a small triangular point.

Male.—Length, about 14 to 17 millimeters; wing, 18.5 to 22.5; antenna, about 2.3 to 2.6.

Frontal prolongation of head relatively long, black, sparsely pruinose; nasus lacking or very short and stout; palpi black. Antennæ unusually short, only a little longer than head; scape and pedicel black; basal segments of flagellum brown or weakly bicolored, obscure yellow, darker at base, outer segments passing into brownish black; in cases antennæ uniformly black; basal flagellar segment cylindrical, nearly twice as long as second; second and succeeding segments short-cylindrical, without an evident basal enlargement; verticils short, subequal in length to segments; antennæ apparently only 12-segmented, usual thirteenth segment fused with penultimate. Head brownish gray, anterior orbits broadly light gray.

Pronotum dark brown, sparsely pruinose. Mesonotal præscutum light gray, lateral margins conspicuously darkened, disc

with three darker gray stripes, lateral pair poorly differentiated against ground; median stripe very broad in front, tapering rapidly behind, posterior end more or less split, in cases posterior interspaces with narrow dark lines before suture; scutal lobes light gray, variegated with darker gray; posterior sclerites of notum gray. Pleura dark gray. Halteres unusually long, about one and one-third as long as antennæ, obscure yellow, knobs weakly darkened. Legs with coxæ and trochanters gray; femora and tibiæ uniformly black; tarsi black or brownish black; claws simple. Wings (Plate 1, fig. 2) with a fulvous brown ground, variegated with darker brown and yellowish-white areas, the former including clouds at origin of Rs, cord, and as seams along vein 2d A and outer portion of Cu; the most conspicuous subhyaline areas lie across the cord and at near two-thirds length of cell M, the latter preceded and followed by pale-brown clouds; a similar dusky wash in cell R between arculus and origin of Rs; cell C clouded; clear yellow areas before and beyond stigma; veins brown, more yellow in costal areas. Venation: R_{1+2} preserved; m and petiole of cell M_1 subequal; inner end of cell 1st M_2 pointed.

Basal segments of abdomen reddish brown, tergites narrowly bordered by black; sternites similar, posterior borders narrowly darkened; sixth and succeeding segments blackened, pruinose. Male hypopygium (Plate 2, fig. 25) relatively small and simple. Ninth tergite (Plate 2, fig. 26, 9t) with posterior half modified into a partly blackened saucer, as often occurs in the subgenus, but its structure quite distinct from that of other regional species; caudal margin of saucer heavily blackened, with a very narrow, parallel-sided median notch, lobes adjoining this median split microscopically roughened and with numerous small punctures; posterior portion of saucer yellow, only feebly chitinized except for a broad median strip which extends cephalad to form back wall of plate in restricted median portion only; viewed from the side (Plate 2, fig. 25, 9t) this narrow plate juts conspicuously above the level of the remainder of tergite as an erect lobe; posterior portion of tergite behind saucer divided medially by pale membrane, almost without punctures. Basistyle unarmed. Outer dististyle, *od*, a long-oval, flattened lobe, its apex obtuse. Inner dististyle, *id*, unusually broad and simple, the usual beak reduced to a small triangular point. Eighth sternite, 8s, unarmed.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, summit, altitude 11,000 feet May 26, 1938 (*Tsen*). Paratopotypes, 12 males.

Tipula (*Vestiplex*) *erectiloba* is very different from all other regional species of the subgenus, differing especially in the very short antennæ, elongate halteres, wing pattern, and especially the structure of the male hypopygium.

TIPULA (VESTIPLEX) FACTIOSA sp. nov. Plate 1, fig. 3; Plate 2, figs. 27 and 28.

Allied to *deserrata*; antennæ relatively short, flagellum black; mesonotal præscutum olive-gray, with four brown stripes that are more or less completely bordered by darker; posterior sclerites of notum with a capillary dark line; femora obscure yellow, tips narrowly blackened; tibiæ and tarsi black; claws (male) toothed; wings narrow, with long basal petiole, grayish brown, variegated with darker brown and subhyaline areas; cell 2d A relatively narrow; basal four abdominal segments yellow, trivittate with brownish black, outer segments blackened; male hypopygium with tergite completely divided medially, adjoining mesal-apical lobes narrow, their inner margins conspicuously serrulate; basistyle with an unusually powerful black spine; inner dististyle a broadly flattened disc, rostral portion long and slender.

Male.—Length, about 15 to 16 millimeters; wing, 17 to 20.5; antenna, about 2.8 to 3.

Frontal prolongation of head brownish yellow; nasus very long; palpi dark brown. Antennæ relatively short, only a little longer than palpi; scape and pedicel yellow, flagellum black; flagellar segments subcylindrical, not or only slightly incised, basal swelling small; verticils subequal in length to segments. Head brownish gray, anterior vertex and posterior orbits more buffy; central portion of posterior vertex with a brownish median stripe.

Pronotum olive-gray, variegated with darker. Mesonotal præscutum olive-gray, with four brown stripes, intermediate pair separated by a pale line that is narrowly bordered by darker brown, lateral stripes similarly bordered; scutum buffy yellow, variegated with brown; scutellum testaceous; mediotergite olive-gray; a nearly continuous capillary brown line extending from suture to abdomen. Pleura yellow, variegated with more grayish areas on ventral anepisternum and ventral sternopleurite. Halteres with stem obscure yellow, base of knob blackened, apex

pale. Legs with coxæ greenish yellow; trochanters yellow; femora obscure yellow, brighter at base, tips narrowly blackened; tibiæ and tarsi black; claws (male) with basal tooth. Wings (Plate 1, fig. 3) relatively narrow, prearcular field long and narrow; grayish brown, variegated with slightly darker brown and subhyaline areas; cell C uniformly yellow, Sc slightly more darkened except at outer end; stigma dark brown; paler brown clouds at origin of Rs, cord, outer end of cells R_2 and R_3 , beyond midlength of cell M, and postarcular in bases of cells R and M; the major subhyaline areas occur before and beyond the cord, postarcular in both cells R and M, before outer end of cell M, and in axillary region; smaller pale areas in outer ends of cells 1st A and 2d A; veins dark. In the female the dark pattern is somewhat heavier and more contrasted. Venation: R_{1+2} entire; m subequal to petiole of cell M_1 ; Rs from two to two and one-half times m-cu; cell 2d A relatively narrow.

Abdomen with basal four tergites yellow, with three conspicuous brown to brownish-black lines, sublateral stripes narrower than buffy margins; median stripe broader; fifth and succeeding segments more uniformly blackened, lateral borders of more basal segments pale; basal sternites pale, outer segments darkened. Genital shield of female black; cerci elongate, deep, with smooth margins. Male hypopygium with ninth tergite (Plate 2, fig. 27, 9t) completely divided on midline by pale membrane, mesal-apical angles produced into narrow blackened lobes, their inner margins conspicuously serrulate. Basistyle (Plate 2, fig. 28, b) with an unusually strong and powerful black spine, directed chiefly dorsad. Outer dististyle, *od*, a flattened clavate lobe provided with numerous setæ. Inner dististyle, *id*, with a long slender beak; posterior portion of style a flattened obtuse disc, with scattered setæ. Eighth sternite extensive, margin without armature.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Flying Bridges Temple, altitude 3,000 feet, June 1, 1938 (*Tsen*). Allotopotype, female. Paratopotypes, 3 males; paratype, male, Kwanhsien, altitude 2,000 feet, May, 1933 (*Graham*).

Most closely related to *Tipula* (*Vestiplex*) *deserrata* Alexander, agreeing in the strongly spined basistyle and in the ninth tergite being entirely divided medially by a pale membrane, with the adjacent lobes heavily blackened and serrulate. It differs especially in several features of the male hypopygium, especially

of the tergite, basistyle, and dististyles. I am placing these species in *Vestiplex* despite the nonserrated cerci. A further discussion of Indo-Chinese species of *Tipula* on the borderline between *Vestiplex* and *Oreomyza* has been published elsewhere.²

TIPULA (OREOMYZA) STERNOSETOSA sp. nov. Plate 1, fig. 4; Plate 2, figs. 29 and 30.

General coloration buffy gray, præscutum with four darker brownish-gray stripes; antennæ with scape and pedicel yellow, flagellum black; frontal prolongation of head above light yellow; apex of knob of haltere yellow; femora black, obscure yellow at base, with a conspicuous obscure yellow subterminal ring; tibiæ black; wings brown, variegated with yellow; R_{1+2} entire, m-cu shortly before fork of M_{3+4} ; abdominal tergites yellow, trivittate with black, median stripe broad and continuous, outer segments blackened; male hypopygium with outer dististyle unusually long and slender, black; basistyle on mesal face produced caudad into a strong blackened rod; eighth sternite with numerous, very long, erect, pale setæ.

Male.—Length, about 13 millimeters; wing, 15; antenna, about 4.

Female.—Length, about 17 to 18 millimeters; wing, 16 to 16.5.

Frontal prolongation of head light yellow above, slightly darker on sides; nasus distinct. Antennæ of moderate length; scape and pedicel light yellow, flagellum black; flagellar segments subcylindrical, very feebly incised, basal swellings correspondingly small; longest verticils a little shorter than segments; terminal segment small, thimble-shaped. Head buffy yellow, central portion of vertex weakly darkened.

Pronotum buffy, with a narrow brown median mark. Mesonotal præscutum buffy gray, with four darker brownish-gray stripes that are very indistinctly margined with darker; setigerous punctures pale and inconspicuous; posterior sclerites of notum gray, each scutal lobe with two darker areas; scutellum and mediotergite with a capillary darkened median line. Pleura gray. Halteres with stem yellow, knob dark brown basally, apex broadly yellow. Legs with coxæ gray; trochanters yellow; femora obscure yellow at base, more broadly so on forelegs, narrower on posterior femora; beyond base ground color black, with a narrow, obscure, yellow, subterminal ring before broader black tips; tibiæ and basitarsi black, terminal tarsal segments somewhat paler; claws (male) with an erect spine. Wings

² Philip. Journ. Sci. 57 (1935) 118, 119.

(Plate 1, fig. 4) brown, handsomely patterned with pale yellow; prearcular and costal fields deeper yellow; chief yellow areas as follows: a major area beyond postarcular darkening, in both cells R and M; before and beyond stigma; near outer end of cell M; across base of cell 1st M_2 ; basal portion of Cu and in anal cells; cell 2d A uniformly yellow with exception of a large marginal cloud at near midlength; veins pale brown, more yellowish in brightened areas. In the female the yellow areas are even more extensive. Venation: R_{1+2} entire; m-cu shortly before fork of M_{3+4} .

Abdominal tergites yellow, with a broad, continuous, blackened, median stripe and somewhat narrower sublateral stripes that are interrupted at posterior margins of segments; lateral borders of tergites gray; sternites yellow with a median dark line; outer abdominal segments passing into black. Male hypopygium (Plate 2, fig. 29) with ninth tergite, 9t, fused with sternite, 9s, on its cephalic portion; basistyle, b, with suture complete but pale and membranous on dorsal portion; apex of basistyle slightly produced. Ninth tergite (Plate 2, fig. 30, 9t) with caudal margin evenly concave, lateral lobes blackened but relatively small and low, ventrad of these lobes with further chitinized extensions; ventral surface of tergite with transverse arms that meet in middle to form an obtuse median lobe. Basistyle, b, on mesal face with a strong blackened rod. Outer dististyle, od, subequal in length to latter, unusually long and slender, dark-colored, provided with long setae that are chiefly unilateral in distribution except at tip. Inner dististyle, id, with rostral beak stout; posterior angle of style produced into a conspicuous rounded lobe. Eighth sternite, 8s, unarmed, ventral surface with numerous, very long, erect, pale setae (the punctures indicated in the figure).

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, June 17, 1938 (Tsen). Allotopotype, female. Paratopotype, female.

Tipula (*Oreomyza*) *sternosetosa* is generally similar to species such as *T. (O.) percommoda* Alexander, differing in many characters, as the yellow frontal prolongation of head, yellow femoral ring, and especially the structure of the male hypopygium, as the tergite outer dististyle, sclerotized rod of the basistyle, and the conspicuous vestiture of the eighth sternite.

TIPULA (OREOMYZA) INCISURATA sp. nov. Plate 1, fig. 5; Plate 2, figs. 31 and 32.

General coloration light gray, præscutum with four entire, more brownish stripes; antennæ relatively long, if bent backward extending to some distance beyond base of abdomen; scape and pedicel yellow, flagellum black, verticils shorter than segments; wings strongly infumed, variegated with yellow and cream-colored areas; R_{1+2} entire, R_s long; basal abdominal segments reddish yellow, narrowly trivittate with brownish black; outer abdominal segments, including hypopygium, black; male hypopygium with caudal margin of tergite with a small but deep median notch, on dorsal surface this continued cephalad as a deep median furrow for almost length of sclerite; lateral tergal lobes broad, obliquely truncated, outer lateral angles obtuse.

Male.—Length, about 14 millimeters; wing, 15; antenna, about 6.

Frontal prolongation of head black, sparsely pruinose; nasus reduced to a small lobe; palpi black. Antennæ (male) relatively long, if bent backward extending to some distance beyond base of abdomen; scape and pedicel yellow, flagellum black, first segment restrictedly brightened at base; flagellar segments moderately incised, verticils unilaterally distributed, shorter than segments, all arising from the small basal enlargement. Head yellowish gray, orbits narrowly lined with clearer gray; posterior orbits narrowly bordered internally by lines of darker brownish gray; vertical tubercle very low.

Pronotum gray, variegated with darker. Mesonotum light gray, with four entire, more brownish stripes, median interspace obscured; scutal lobes darkened; posterior sclerites of notum light gray, each with a central darker area. Pleura gray, variegated with darker gray, especially on ventral sternopleurite and meron; dorsopleural membrane dark buffy. Halteres relatively long, stem obscure yellow, knob darkened. Legs with coxæ gray; trochanters yellow; remainder of legs black, femoral bases restrictedly light yellow; femora with faintest possible indication of a more brightened subterminal ring; claws (male) with erect basal tooth. Wings (Plate 1, fig. 5) with ground color strongly infumed, variegated with more yellowish and creamy-white areas; cell Sc and most of prearcular field yellow; stigma brown, slightly darker than ground; the chief yellow areas are in bases of cells R and M, at near two-thirds length of M, immediately before origin of R_s , in outer end of

cell R, and poststigmal; smaller pale areas in cells Cu and 1st A; a more creamy-white area crosses cell 1st M₂ into base of cell M₃; veins dark, paler in brightened areas, especially obliterative ones at cord. Venation: R₁₊₂ entire, straight; Rs long, about two and one-half times m-cu; petiole of cell M₁ a little less than m.

Basal abdominal tergite pruinose basally; succeeding segments reddish yellow, narrowly trivittate with brownish black; fifth and succeeding segments, including hypopygium, passing into black. Male hypopygium (Plate 2, fig. 31) with the basistyle, *b*, entire, not produced, provided with long yellow setæ. Ninth tergite (Plate 2, fig. 32, 9*t*) with a small but deep rectangular median incision, from base of which a long furrow on dorsal surface continues cephalad for almost the entire length of the sclerite; lateral tergal lobes broad, obliquely truncated, outer lateral angles obtuse; surface of tergite with numerous black setæ, marginal setæ small and slender. Outer dististyle narrow, pale, with conspicuous setæ. Inner dististyle, *id*, with beak and a lobe beneath it heavily blackened. From base of ninth sternite on midline a small erect lobe juts ventrad. Eighth sternite narrow, simple.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, June 6, 1938 (*Tsen*). Paratopotype, male.

Tipula (*Oreomyza*) *incisurata* is quite different from all other regional species, especially in the structure of the male hypopygium, but likewise in the antennæ and in the pattern of the wings. Superficially it somewhat resembles other species of the genus belonging to various subgenera, as *T. (Vestiplex) inquinata* Alexander, *T. (Acutipula) omeiensis* Alexander, and *T. (Oreomyza) sex-lobata* Alexander.

TIPULA (OREOMYZA) INTERRITA Alexander.

Female.—Length, about 30 millimeters; wing, 9.5 by 1.3.

Characters as in male, differing most evidently in semi-atrophied wings. Nasus reduced. Antennæ 13-segmented, terminal segment small and closely applied to the penultimate. All tibiæ dirty brownish yellow, contrasting conspicuously with brownish-black femora. Wings reduced, as shown by measurements, venation correspondingly distorted; general coloration obscure yellow, stigmal region slightly more darkened; veins pale. Ovipositor with cerci very long and slender, straight,

with smooth margins; hypovalvæ much shorter and deeper, tips obtusely rounded.

Allotype, female, Mount Omei, Chu Lao Tong Temple, altitude 6,500 feet, May 26, 1938 (*Tsen*).

Two further males are from the summit of Omei, altitude 11,000 feet, May 26, 1938 (*Tsen*).

CYLINDROTOMINÆ

LIOGMA SIMPLICICORNIS sp. nov. Plate 1, fig. 6; Plate 3, figs. 33 and 34.

General coloration polished black, dorsopleural membrane conspicuously yellow; antennæ black throughout, flagellar segments only moderately produced; halteres long, knobs infuscated; femora obscure yellow, passing through brown to brownish black; wings strongly suffused with brown, small stigma darker brown; r-m present; male hypopygium with dististyle narrowed on apical third, apex cultriform; gonapophyses appearing as narrowly expanded blades, surface at apex microscopically roughened.

Male.—Length, about 12 millimeters; wing, 9.5; antenna, about 3.4.

Rostrum and palpi black. Antennæ (Plate 3, fig. 33) black throughout; flagellar segments only moderately produced. Head polished black; anterior vertex a little wider than diameter of scape.

Pronotum black, posterior portion and dorsopleural membrane yellow. Mesonotal præscutum and scutum shiny black, surface smooth; scutellum pale, parascutella blackened; mediotergite black, sparsely pruinose. Pleura black, sparsely pruinose. Halteres relatively long and slender; stem dusky, yellow at base, knob infuscated. Legs with coxæ black; trochanters yellow; femora obscure yellow basally, passing into brown, tips brownish black; tibiæ brown, tips narrowly blackened; tarsi black. Wings (Plate 1, fig. 6) with a rather strong brown suffusion; stigma small, oval, darker brown; veins brown. Venation: Sc long, extending to beyond level of r-m, tip pale to atrophied; r-m present; m-cu shortly beyond fork of M.

Abdomen elongate, black, pleural membrane and incisures restrictedly paler; hypopygium black. Male hypopygium (Plate 3, fig. 34) with dististyle, *d*, narrowed on apical third, apex cultriform. Gonapophyses, *g*, appearing as narrowly expanded blades, surface at apex microscopically roughened; inner edge of stem with several strong setæ.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, May 25, 1938 (*Tsen*).

Liogma simplicicornis is quite distinct from the other eastern Asiatic species of the genus in the reduced pectinations of the antennæ, which here approach the normal unmodified condition found in the related *Phalacrocera*. Whether it will be possible to maintain as full genera such groups as *Liogma*, *Triogma*, and *Phalacrocera* seems questionable to me.

LIMONIINÆ

LIMONIINI

LIMONIA (DICRANOMYIA) AMPLIFICATA sp. nov. Plate 1, fig. 7; Plate 3, fig. 35.

Large (wing, male, over 8 millimeters); general coloration of thorax medium brown; halteres pale yellow throughout; femora obscure yellow, tips darker; wings broad, whitish subhyaline, stigma and seams at cord and outer end of cell 1st M_2 weakly darkened; Sc_2 not far from tip of Sc_1 ; male hypopygium with a single long rostral spine on ventral dististyle, this arising from a low hemispherical blackened tubercle placed before mid-length of prolongation.

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

Rostrum brown, moderately long, about one-half remainder of head; palpi black. Antennæ brownish black; flagellar segments oval, incisures well-defined; terminal segment about one and one-half as long as penultimate. Head dark brown; anterior vertex narrow.

Pronotum dark brown. Mesonotum almost uniform medium brown, without markings; præscutal setæ black, conspicuous. Pleura medium brown, dorsopleural region darker. Halteres pale yellow throughout. Legs relatively short and stout; coxæ pale brown; trochanters pale yellow; femora obscure yellow, tips darker; remainder of legs brownish testaceous, outer tarsal segments darker; claws long, with a conspicuous basal spine; terminal tarsal segment with modified flattened setæ at base. Wings (Plate 1, fig. 7) broad, whitish subhyaline, stigma slightly darker; cord and outer end of cell 1st M_2 a trifle seamed with darker; veins brown, more yellowish in prearcular and costal fields. Venation: Sc_1 ending opposite origin of Rs , Sc_2 near its tip; free tip of Sc_2 lying shortly proximad of R_2 ; cell 1st M_2 large, about equal in length to vein M_{1+2} beyond it; m-cu at fork of M .

Abdomen brown, vaguely patterned with paler, especially on basal sternites; hypopygium dark, ventral dististyle whitened. Male hypopygium (Plate 3, fig. 35) with caudal margin of ninth tergite, 9t, emarginate, lobes broadly rounded. Basistyle, b, with ventromesal lobe extensive, provided with numerous long yellow setæ. Dorsal dististyle a powerful, angularly bent rod, its apex a long blackened spine. Ventral dististyle, vd, smaller in extent than basistyle, rostral prolongation well set off by a slightly constricted neck; prolongation heavily blackened, especially at pointed apex and along lower or cephalic margin; a single rostral spine, arising from a low hemispherical black tubercle placed before midlength of prolongation; spine black, elongate, subequal in length to rostrum. Gonapophysis, g, with mesal-apical lobe a slender, curved, blackened spine.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, June 6, 1938 (*Tsen*).

Limonia (Dicranomyia) amplificata is very distinct from the other species of the subgenus so far described. From the other forms having a single rostral spine on the ventral dististyle of the male hypopygium it is readily told by the large size and details of structure of the male hypopygium. The most similar described species is *L. (D.) montium* Alexander, of the high mountains of Formosa.

LIMONIA (GERANOMYIA) OBESISTYLA sp. nov. Plate 1, fig. 8; Plate 3, fig. 36.

General coloration plumbeous brown, præscutum with three poorly indicated darker-brown stripes; rostrum relatively short, less than twice length of antennæ; legs yellow; wings yellow, with a rather restricted, chiefly costal, brown pattern; dark area at fork of Sc prolonged backward and outward to include fork of Rs; m-cu some distance before fork of M; male hypopygium with ventral dististyle unusually large, fleshy, rostral prolongation small, pointed at apex, with two straight spines from a low common tubercle; gonapophysis with mesal-apical lobe broad, tip acute.

Male.—Length, excluding rostrum, about 7 millimeters; wing, 7.5; rostrum, about 2.3 to 2.4.

Rostrum relatively short, black throughout, less than twice as long as antennæ. Antennæ with scape and pedicel dark brown, flagellum varying from pale yellowish brown to brown, outer segments darker; flagellar segments oval; terminal seg-

ment longer than penultimate. Head black, striplike anterior vertex silvery gray, this color continued caudad onto posterior vertex.

Mesonotal præscutum plumbeous brown, with three very poorly indicated darker-brown stripes; lateral border of sclerite paling to obscure yellow; scutal lobes plumbeous brown, their mesal edges with a darker-brown line that is a posterior continuation of lateral præscutum stripes; scutellum testaceous brown; postnotum dark. Pleura almost uniformly brownish testaceous. Halteres with stem yellow, knob infuscated. Legs with coxæ testaceous yellow; trochanters yellow; remainder of legs yellow, with only terminal tarsal segments darkened. Wings (Plate 1, fig. 8) with ground color yellow, slightly brighter in prearcular and costal fields; a conspicuous brown costal pattern, as follows: first area at h, continued caudad over arculus; second area at supernumerary crossvein in cell Sc, extending from C almost to M, nearly parallel-sided; third area at origin of Rs, slightly narrower and a little longer than second; fourth area at fork of Sc, continued caudad and slightly distad to involve fork of Rs; fifth area at stigma; sixth at tip of R_3 , crossing cell to vein R_{4+5} ; dark costal areas conspicuously narrower than interspaces; additional dark seams on cord, m-cu, outer end of cell 1st M_2 and at tip of vein R_{4+5} ; barely indicated marginal clouds at ends of veins M_4 to 2d A, inclusive; a very faint darkening in cell Sc between first and second major costal areas; veins yellow, darker in patterned areas. Costal fringe relatively short. Venation: Sc unusually long, Sc_1 ending a short distance before fork of Rs, Sc_2 at its tip; free tip of Sc_2 and R_2 in virtual transverse alignment; cell 1st M_2 about as long as vein M_{1+2} beyond it; m-cu approximately its own length before fork of M; vein 2d A strongly sinuous, cell wide.

Abdominal tergites dark brown, caudal borders of segments narrowly pale; sternites more extensively yellow, slightly darkened before tips; subterminal segments, including hypopygium, uniformly infuscated; ventral dististyle very large, conspicuously yellow. Male hypopygium (Plate 3, fig. 36) with lateral lobes of tergite, 9t, low. Basistyle, b, small, its area scarcely one-fifth that of the very large and tumid ventral dististyle, vd; setæ of latter virtually lacking on mesal face; rostral prolongation small, pointed at apex, with two rostral spines from a common tubercle or from two very closely approximated tubercles; spines subequal to one another, placed close together,

straight, tips relatively blunt. Gonapophyses, *g*, dark-colored, mesal-apical lobe very broad, its tip acute, margin microscopically and irregularly toothed. *Æ*deagus, *a*, relatively narrow, the two apical lobes separated by a narrow notch.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Chu Lao Tong Temple, altitude 6,500 feet, June 6, 1938 (*Tsen*). Paratopotype, male, pinned with type.

Most generally similar to *Limonia* (*Geranomyia*) *suensoniana* Alexander, of eastern China, and to *L. (G.) radialis* Alexander, ranging from southern Japan to western China, especially in the great length of vein Sc and the basal position of m-cu. It differs in the details of pattern of the thorax and wings and especially in the structure of the male hypopygium, notably the very large ventral dististyle, the pointed apex of the rostral prolongation, and the quite distinct conformation of the lobes of the gonapophyses.

HELIUS (HELIUS) FRANCKIANUS sp. nov. Plate 1, fig. 9; Plate 3, fig. 37.

Large (wing, male, 9 millimeters); general coloration dark gray; halteres uniformly pale yellow; legs yellow; wings brownish yellow, prearcular and costal fields conspicuously light yellow; a sparse darkened pattern, including stigma, wing tip, and clouds in axillary region; Sc long, Sc₁ ending beyond fork of Rs; Rs short, oblique, subequal in length to cell 1st M₂; m-cu close to fork of M; male hypopygium with inner dististyle long and slender, much exceeding short bispinous outer dististyle.

Male.—Length, about 10 millimeters; wing, 9; antenna, about 1.2.

Rostrum a little longer than remainder of head, black throughout; palpi black. Antennæ short, a little longer than rostrum; scape and pedicel black, flagellum brown; flagellar segments oval, passing through elongate oval to attenuate; terminal segment unusually long; verticils subequal in length to segments, on basal portion of flagellum unilaterally arranged. Head dark gray; anterior vertex a little wider than diameter of scape.

Cervical region black. Pronotum and mesonotum almost uniformly blackish gray, præscutal stripes not or scarcely evident. Pleura blackish gray, including dorsopleural membrane. Halteres uniformly pale yellow. Legs with coxæ pale, fore pair a little more darkened; trochanters yellow; femora bright yellow, tips not or scarcely darkened; remainder of legs bright yellow,

terminal tarsal segments darkened; claws simple. Wings (Plate 1, fig. 9) brownish yellow, prearcular and costal fields conspicuously light yellow; stigma oval, dark brown; a scarcely apparent brown seam on anterior cord; wing tip narrowly darkened; a brown seam along basal portion of vein Cu in cell M; axillary region weakly darkened; veins pale brown, clear luteous in clearer yellow areas. Venation: Sc long, Sc₁ ending beyond fork of Rs, Sc₂ at tip; Rs short, oblique, subequal in length to cell 1st M₂; branches of Rs weakly divergent at outer ends so cell R₃ is wider at margin than cell R₂; cell 1st M₂ subrectangular, shorter than veins beyond it; m-cu close to or just beyond fork of M.

Abdomen brownish black, hypopygium a trifle brightened. Male hypopygium (Plate 3, fig. 37) with lateral lobes of tergite, 9t, appearing as oval flattened plates, apex of each produced into a long straight spine. Basistyle, b, without lobes; setæ of narrowed apical portion elongate. Outer dististyle, od, short, glabrous, bispinous at apex. Inner dististyle, id, unusually long and slender.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Flying Bridges Temple, altitude 3,000 feet, June 1, 1938 (Tsen).

I take unusual pleasure in dedicating this fine species to the Reverend Mr. George Meredith Franck, to whose friendly interest and enthusiasm we owe much of our knowledge of the Tipulidæ of western China. This conspicuous fly is very distinct from all other species so far described from Asia.

ORIMARGA (ORIMARGA) GUTTIPENNIS sp. nov. Plate 1, fig. 10; Plate 3, fig. 38.

Very large (wing, male, over 7 millimeters); general coloration dark gray; antennæ black throughout; halteres pale yellow; legs brownish black; wings pale yellow, sparsely patterned with brown; costal fringe short; numerous macrotrichia on longitudinal veins beyond cord, with exception of R₂₊₃; free tip of Sc₂ distinct; R₂₊₃ longer than R₁₊₂; male hypopygium with basistyle simple.

Male.—Length, about 11 millimeters; wing, 7.6.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval to long-oval, verticils short. Head dark gray.

Mesonotum uniformly dark gray, præscutum without stripes. Pleura dark gray, vaguely striped longitudinally with paler on dorsal sternopleurite and ventral pteropleurite. Halteres pale yellow. Legs with the coxæ dark brown, posterior pair a little

paler; trochanters testaceous; remainder of legs brownish black, femoral bases a little paler. Wings (Plate 1, fig. 10) pale yellow, sparsely patterned with brown, including spots at origin and fork of Rs, fork of Sc, free tip of Sc₂, R₂, cord, fork of M₃₊₄, and m-cu; veins yellow, brown in clouded areas. Costal fringe short; macrotrichia on longitudinal veins beyond cord with exception of R₂₊₃. Venation: Sc₁ ending a short distance beyond fork of Rs, Sc₂ close to its tip; Rs angulated at origin; free tip of Sc₂ distinct, R₁ beyond it a little longer than R₂; R₁₊₂ long, subequal to vein Sc₂ + R₁; R₂₊₃ longer than R₁₊₂; basal section of R₄₊₅ angulated at origin; m-cu about opposite three-fourths length of Rs; vein 2d A long, cell wide.

Abdomen, including hypopygium, black. Male hypopygium (Plate 3, fig. 38) with basistyle, *b*, simple; interbases, *i*, appearing as blackened rods, tips narrowed into needlelike whitened points. Outer dististyle, *od*, a simple straight rod, tip gradually narrowed to a slightly decurved point. Inner dististyle a little shorter, entirely pale, with coarse setæ. Phallosome, *p*, appearing as two very slender divergent rods that bear an outer flange of almost hyaline membrane (the latter not shown in figure).

Habitat.—China (Szechwan).

Holotype, male, Mount Owei, Flying Bridges, altitude 3,000 feet, June 2, 1938 (*Tsen*).

Orimarga (*Orimarga*) *guttipennis* is very distinct from all described regional species of the genus by the unusually large size and spotted wings. By my key to the Chinese species of *Orimarga*³ it runs to the almost equally large *O. (O.) latissima* Alexander, which is distinguished by the even wider, unpatterned wings and by the very different male hypopygium.

PEDICINI

DICRANOTA (RHAPHIDOLABIS) ANGUSTISTYLA sp. nov. Plate 1, fig. 11; Plate 3, fig. 39.

General coloration light gray; antennæ 15-segmented, segments stout and well-delimited; legs black, femoral bases obscure yellow; wings subhyaline, stigma pale brown; Rs relatively short; male hypopygium with tergite deeply bilobed, mesal angle of lobes with long setæ; interbase very large and complex in structure, at apex expanded into a multispinous head; both dististyles slender.

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

³ Philip. Journ. Sci. 54 (1934) 327.

Rostrum and palpi black. Antennæ black throughout, 15-segmented; flagellar segments stout and well-delimited, terminal segment reduced; flagellar segments with abundant white pubescence. Head gray.

Mesonotum light gray, præscutum apparently with darker stripes, but badly discolored in unique type. Halteres with stem pale, knob darkened. Legs with coxæ dark; trochanters brownish testaceous; remainder of legs black, femoral bases obscure yellow. Wings (Plate 1, fig. 11) subhyaline, stigma pale brown; veins brown. Venation: Rs relatively short, arcuated; R_{2+3+4} longer than basal section of R_5 ; m-cu more than one-half its length beyond fork of M.

Abdomen brownish black; hypopygium black. Male hypopygium (Plate 3, fig. 39) with tergite, 9t, deeply bilobed, lobes separated by a very deep U-shaped notch, opening of notch slightly narrower than base; lobes broad, outer mesal angle rounded and provided with abundant long setæ. Interbase, i, very large and complex in structure, at apex expanded into a multispinous head, one spine much longer and larger than the others. Both dististyles very slender, the outer, od, dusky, weakly sinuous, clothed with conspicuous setæ. Inner dististyle, id, a long narrow yellow blade, at base produced into a narrow lobe.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Chu Lao Tong Temple, altitude 6,500 feet, June 6, 1938 (Tsen).

Dicranota (Rhaphidolabis) angustistyla is very different from all other regional species of the subgenus having the tergite of the male hypopygium deeply lobed, as *D. (R.) biloba* Alexander and *D. (R.) præcisa* Alexander. The species is well distinguished by the narrow elongate dististyles and especially by the complex spinous interbases.

HEXATOMINI

LIMNOPHILA (LIMNOPHILA) FENESTRELLA sp. nov. Plate 1, fig. 12; Plate 3, fig. 40.

General coloration dark brown; antennæ with scape black, basal flagellar segments yellow; legs light yellow; wings pale yellow, variegated with five crossbands that consist of a darkened center surrounded by a narrower brown border that is separated from the center by a narrow line of the ground color; cell M_1 long, m short to very short; male hypopygium with tip of outer dististyle a simple acute point; gonapophyses appearing as flattened spatulate blades.

Male.—Length, about 6.5 millimeters; wing, 7.

Rostrum and palpi black. Antennæ with scape black, pedicel brown; basal flagellar segments subglobular to short-oval, yellow; outer segments somewhat darker, passing into oval, with long conspicuous verticils. Head dark grayish brown; anterior vertex broad.

Mesonotum uniformly dark brown, without stripes or other markings. Pleura black, sparsely pruinose. Halteres pale. Legs with coxæ brownish black; trochanters obscure brownish yellow; remainder of legs light yellow; terminal tarsal segments broken. Wings (Plate 1, fig. 12) pale yellow, with a handsome, very conspicuous, crossbanded and ocellate brown pattern; five crossbands, fourth at cord, fifth apical; three basal bands before cord, first at arculus, third at level of origin of Rs; all bands consisting of a central mark with a narrower brown border, separated from the main dark area by ground areas that are a little wider than the outer dark borders; basal three bands contiguous or confluent in cell M; two outer bands nearly contiguous above fork of M_{1+2} ; all bands with pale centers in cell C; a narrow but entire band of ground color before cord, separating third and fourth ocellate areas; veins yellow, darker where traversing brown bands. Venation: Sc_1 ending about opposite fork of Rs, Sc_2 near its tip; R_2 and R_{1+2} subequal; R_{2+3+4} a little shorter than basal section of R_5 ; cell M_1 shorter than its petiole; m short to very short; in left wing of type M_3 connecting M_{1+2} with M_{3+4} before fork of M_3 ; m-cu at near one-third length of cell 1st M_2 .

Abdomen brownish black, bases of segments a little brighter than tips; hypopygium brownish yellow. Male hypopygium (Plate 3, fig. 40) with basistyle, *b*, simple; setæ of mesal face long and erect. Outer dististyle slender, apex slightly decurved to a spinous point; before spine on lower face dilated into a weak flange. Inner dististyle, *id*, a short stout fleshy lobe. Gonapophyses, *g*, appearing as flattened spatulate blades, elongate heads with smooth margins. Ædeagus strongly bent before tip, subtended beneath by pale membrane.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Flying Bridges Temple, altitude 3,000 feet, June 1, 1938 (*Tsen*).

Most closely related to *Limnophila* (*Limnophila*) *aino* Alexander, of northern Japan, and *L. (L.) dicranophragmoides* Alexander, of the Riukiu Islands, differing especially in the venation and the nature of the wing pattern.

LIMNOPHILA (PRIONOLABIS) LICTOR sp. nov. Plate 1, fig. 13; Plate 3, fig. 41.

Very small (wing, male, under 5 millimeters); mesothorax polished black; basal flagellar segments obscure yellow; head dark gray; legs yellow, tips of femora, tibiae, and basitarsi darkened; wings yellow, diffusely but extensively patterned with brown; R_{2+3+4} a little longer than basal section of R_5 ; cell M_1 lacking; male hypopygium with gonapophyses blackened, appearing as stout rods, at apex expanded into subcircular heads, margin with about eleven retrorse teeth.

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

Rostrum and palpi black. Antennae with scape and pedicel black; basal flagellar segments obscure yellow, outer segments darker; flagellar segments oval, verticils slightly longer than segments. Head dark gray.

Mesothorax polished black unvariegated, dorsal pleurites a trifle more pruinose. Halteres with stem obscure yellow, knob broken. Legs with coxae blackened; trochanters obscure yellow; femora yellow, tips rather narrowly (about distal eighth) but conspicuously blackened, the amount subequal on all legs; tibiae and basitarsi yellow, tips more narrowly blackened; remainder of tarsi brownish black. Wings (Plate 1, fig. 13) with the ground color yellow, clearer yellow in prearcular and costal fields; stigma brown; an extensive but very diffuse paler-brown pattern appears as broad crossbands at level of arculus, origin of R_s and cord; apical cells slightly more infumed than ground; veins brown, yellow in luteous areas. Venation: Sc_1 ending about opposite fork of R_s , Sc_2 near its tip; R_s long, subequal in length to its anterior branch; R_{2+3+4} a little longer than basal section of R_5 ; cell M_1 lacking; m-cu at near one-third length of cell 1st M_2 .

Abdomen including hypopygium, black. Male hypopygium (Plate 3, fig. 41) with caudal border of tergite, $9t$, with a broad U-shaped notch, lobes glabrous and obtuse. Outer dististyle, od , with more than basal half dilated and with conspicuous setae, apex narrowed into a slender spinous blade. Inner dististyle, id , with base slightly swollen and setiferous, apex prolonged into a long slender yellow blade that is subequal in length and size to the beak of the outer style but with the apex more obtuse. Gonapophyses, g , blackened, appearing as stout rods, at apex expanded into subcircular heads, margin with about eleven retrorse teeth. Aedeagus, a , only feebly dilated, apex decurved.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Chu Lao Tong Temple, altitude 6,500 feet, June 6, 1938 (*Tsen*).

Limnophila (*Prionolabis*) *lictor* is very different from the other known regional species of the subgenus having cell M_1 of the wings lacking. The strongly darkened gonapophyses, with expanded macelike head, are quite different from that of all other species.

LIMNOPHILA (PRIONOLABIS) POLIOCHROA sp. nov. Plate 1, fig. 14; Plate 4, fig. 42.

General coloration dark gray, thorax without markings; halteres yellow; femora yellow, tips abruptly blackened, the amount subequal on all legs; wings brownish yellow, restrictedly patterned with brown; cell M_1 lacking; m-cu at or before midlength of cell 1st M_2 ; abdomen black; male hypopygium with gonapophyses appearing as long, slender, simple, gently curved, black rods, tips narrow and subacute, set with microscopic denticles.

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

Female.—Length, about 6 to 6.5 millimeters; wing, 6.5 to 7.

Rostrum black, sparsely pruinose; palpi black. Antennæ of moderate length, black, flagellum a little paler, scape pruinose; flagellar segments oval. Head heavily light gray pruinose.

Thorax uniformly dark gray, unpatterned. Halteres yellow, base of stem a little more infuscated. Legs with coxæ dark gray; trochanters black; femora yellow, tips rather narrowly and abruptly blackened, the amount subequal on all legs and including about the distal sixth or seventh; tibiæ obscure yellow, tips blackened; basitarsi brown, remaining tarsal segments passing into black. Wings (Plate 1, fig. 14) brownish yellow, prearcular region clearer yellow; a restricted darker-brown pattern, as follows: origin of R_s , stigma, cord, and axillary region; less evident darkenings at outer end of cell 1st M_2 and along vein Cu; veins pale brown, a little darker in clouded portions, more luteous in yellow areas. Venation: Sc_1 ending about opposite or slightly before fork of R_s , Sc_2 a short distance from its tip; R_{2+3+4} shorter than basal section of R_5 ; R_2 and R_{1+2} subequal; cell M_1 lacking; m-cu at or before midlength of lower face of cell 1st M_2 .

Abdomen black, including hypopygium; valves of ovipositor horn yellow. Male hypopygium (Plate 4, fig. 42) with caudal margin of tergite, 9t, with a broad U-shaped notch, lobes triangular in outline. Outer dististyle, *od*, moderately chitinized, basal portion weakly expanded, with long setæ; apex flattened

into a blade, terminating in a small decurved point. Inner dististyle, *id*, with base dilated, provided with coarse setæ, the long blackened beak simple, nearly straight, tip subacute. Gonapophyses, *g*, appearing as long, slender, simple, gently curved, black rods, tips narrow and subacute, set with microscopic denticles.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Hwa Nien Pin Temple, altitude 6,500 feet, June 15, 1938 (*Tsen*). Allotopotype, female. Paratopotype, 1 female.

Limnophila (*Prionolabis*) *pokiochroa* is very different from the other species of the subgenus in eastern Asia having the body coloration gray and cell M_1 of the wings lacking. The most evident specific characters are to be found in the structure of the male hypopygium, especially the gonapophyses.

LIMNOPHILA (ADELPHOMYIA) SIMPLICISTYLA sp. nov. Plate 1, fig. 15; Plate 4, fig. 43.

General coloration medium brown, præscutum subnitidous, without distinct stripes; basal flagellar segments yellow; halteres pale; legs yellow, terminal tarsal segments infuscated; wings strongly tinged with brownish yellow; sparse macrotrichia in outer ends of cells R_3 to M_4 , with exception of R_4 ; R_{2+3} and R_{1+2} subequal in length, R_2 very faintly indicated; cell M_1 about twice its petiole; m-cu at near midlength of cell 1st M_2 ; male hypopygium with outer dististyle long and slender, black, apex bifid; inner dististyle simple; gonapophyses appearing as angular hooks.

Male.—Length, about 5 millimeters; wing, 5.5; antenna, about 1.5.

Rostrum ochreous; palpi light brown. Antennæ of moderate length; scape and pedicel brownish yellow, flagellum light yellow, outer segments darker; flagellar segments with conspicuous verticils that exceed segments in length. Head pale brown, pruinose.

Pronotum yellowish brown. Mesonotum almost uniformly medium brown, præscutum subnitidous, without distinct stripes. Pleura brown. Halteres pale. Legs yellow, terminal tarsal segments infuscated. Wings (Plate 1, fig. 15) strongly tinged with brownish yellow; stigma scarcely darker; veins and macrotrichia brown. Sparse macrotrichia in outer ends of cells R_3 to M_4 , inclusive, with exception of cell R_4 (indicated in figure by

stippling). Venation: Sc moderately long, Sc₁ ending a short distance before fork of Rs, Sc₂ a short distance from its tip; R₂ very pale to subobsolete; R₂₊₃ subequal to R₁₊₂; cells beyond cord relatively deep, especially cells R₃ and M₁; veins comprising anterior cord in transverse alignment; r-m arcuated; cell M₁ nearly twice as long as its petiole; cell 1st M₂ rectangular, with m-cu at near midlength.

Abdomen light brown; hypopygium yellow. Male hypopygium (Plate 4, fig. 43) with caudal margin of tergite transverse or feebly emarginate, without lobes. Outer dististyle, *od*, long and slender, blackened, outer portion strongly curved and narrowed, apex unequally bifid. Inner dististyle, *id*, shorter than outer, simple, lower face with abundant long setæ. Interbases, *i*, appearing as short plates, tips obtusely rounded. Gonapophyses appearing as strongly angulate hooks, the long points decussate across ædeagus.

Habitat.—China (Szechwan).

Holotype male, Mount Omei, Hwa Nien Pin Temple, altitude 6,500 feet, June 15, 1938 (*Tsen*).

I am referring this fly to the subgenus *Adelphomyia* Bergroth (*Tricholimnophila* Alexander) because of the structure of the antennæ and presence of macrotrichia in the outer wing cells. It differs from the other known species of the subgenus in the structure of the male hypopygium, notably the simple inner dististyle.

ELEPHANTOMYIA INSOLITA sp. nov. Plate 1, fig. 16.

General coloration dull black; rostrum unusually long, subequal to either body or wing; fore femora extensively blackened, posterior femora with tips narrowly darkened; all tibiæ and tarsi yellow; wings yellowish brown, unmarked except for a slightly darker brown stigma.

Female.—Length, excluding rostrum, about 9 millimeters; wing, 9; rostrum, about 9.

Rostrum brown, of unusual length, about equal in length to remainder of body or wing. Antennæ with scape and pedicel black, flagellum brown; flagellar segments cylindrical, outer segments more elongate; basal segment of flagellum more than one and one-half times as long as second; first and third subequal; terminal segment nearly as long as penultimate. Head light gray; eyes large; vertex reduced to a narrow stripe that is a little less than diameter of scape.

Thorax uniformly black, with a gray pruinosity to produce a plumbeous appearance; dorsopleural membrane restrictedly obscure yellow. Halteres brownish yellow, base of stem somewhat clearer yellow. Legs with coxæ yellow, fore pair a little darkened; trochanters yellow; femora obscure yellow basally, passing into brownish black, the latter very broadly so on fore and middle legs, on posterior legs tips narrowly darkened; tibiæ slightly infumed basally, soon passing into yellow; tarsi yellow; tibial spurs lacking; claws simple. Wings (Plate 1, fig. 16) strongly tinged with yellowish brown, prearcular field restrictedly yellow; stigma long-oval, pale brown, only a little darker than ground; veins pale brown. Venation: Sc_1 ending opposite fork of Rs, Sc_2 a little longer, near its tip; Rs relatively short, less than cell 1st M_2 , angulated and short-spurred at origin; branches of Rs generally parallel to one another; m-cu shortly beyond midlength of cell 1st M_2 ; cell 2d A relatively narrow.

Abdomen, including genital shield, black; valves of ovipositor horn-yellow, hypovalvæ blackened at bases.

Habitat.—China (Szechwan).

Holotype, female, Mount Omei, Chu Lao Tong Temple, altitude 6,500 feet, June 6, 1938 (*Tsen*).

The nearest ally of the present fly is *Elephantomyia carbo* Alexander, likewise from the mountains of western China, differing especially in the polished black thorax, darkened tibiæ, and conspicuously patterned wings.

ERIOPTERINI

LIPSOTHRIX MIRABILIS sp. nov. Plate 1, fig. 17; Plate 4, fig. 44.

General coloration polished black; antennæ (male) elongate; legs black, terminal tarsal segments somewhat paler; wings yellowish brown, conspicuously patterned with darker brown, including costal border and broad seams along cord, outer end of cell 1st M_2 , and vein Cu; R_{2+3+4} suberect, unusually short, less than basal section of R_5 ; Rs long, subequal to vein R_4 ; male hypopygium with interbases unusually long and slender, at near midlength bent into a right angle, tip acute.

Male.—Length, about 9 millimeters; wing, 9.5; antenna, about 3.5.

Rostrum and palpi black. Antennæ black throughout, elongate (male) as shown by measurements; flagellar segments subcylindrical, verticils shorter than segments; terminal segment about one-third penultimate. Head black, heavily pruinose, especially on broad anterior vertex.

Thorax polished black, notum glabrous. Halteres with stem pale, knob weakly darkened. Legs with coxæ polished black; trochanters abruptly yellow; remainder of legs black, femoral bases very narrowly yellow, outer tarsal segments paling to brown; claws conspicuously toothed, including a larger spine before midlength and a smaller, more basal one. Wings (Plate 1, fig. 17) yellowish brown, conspicuously patterned with darker brown, including cells C and Sc, and seams on R_2 , R_{1+2} , cord, and outer end of cell 1st M_2 , with a longitudinal seam along vein Cu; outer radial field more vaguely darkened; veins beyond cord, as well as posterior wing margin, indistinctly clouded; posterior prearcular field clear yellow; veins brown, more yellowish in the more basal unclouded portions. Macrotrichia of veins relatively long and conspicuous on veins beyond cord, less numerous elsewhere, including a few on outer ends of Rs and 2d A. Venation: Sc long, Sc_1 ending beyond fork of R_{2+3+4} , Sc_2 at its tip; Rs long, subequal to R_4 ; R_{2+3+4} unusually short and suberect, less than basal section of R_5 ; cell M_1 lacking; cell 1st M_2 relatively large, subrectangular, with oblique m-cu at near one-fourth its length.

Abdomen, including hypopygium, black. Male hypopygium (Plate 4, fig. 44) of normal structure; inner dististyle, *id*, longer than outer, *od*, pointed at tip. Interbase, *i*, long and slender, bent at right angle at near midlength, tip acute.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, June 7, 1938 (*Tsen*).

Lipsothrix mirabilis is entirely different from all species of the genus hitherto made known. It is most similar to *L. pluto* Alexander, of the higher mountains of Formosa, which has a similarly blackened thorax and elongate antennæ in the male sex. The present fly differs conspicuously in the patterned wings and in the venation, as the unusually short R_{2+3+4} . In its general appearance the fly suggests species of *Limnophila* belonging to the subgenus *Prionolabis* Osten Sacken. It is the first species of *Lipsothrix* to be reported from China.

GONOMYIA (IDIOCERA) MULTIARMATA sp. nov. Plate 1, fig. 18; Plate 4, fig. 45.

General coloration gray, præscutum with two intermediate brown stripes; legs obscure yellow; wings brownish yellow, restrictedly patterned with darker brown, including stigma, wing tip and restricted seams at origin of Rs, cord and m-cu; Sc short, Sc_1 ending about opposite one-fifth length of Rs; male

hypopygium with all three dististyles bearing conspicuous branches; ædeagus elongate, simple.

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

Rostrum and palpi black. Antennæ with basal segments yellow; flagellar segments beyond first black; basal flagellar segments subcylindrical, outer segments more fusiform, with truncated ends. Head gray.

Pronotum light gray. Mesonotal præscutum gray, humeral and lateral portions pale yellow; two intermediate brown stripes that are more expanded behind, interspace more obscured; pseudosutural foveæ pale; scutum with lobes grayish brown; scutellum dark brown, sparsely pruinose, caudal margin obscure yellow; mediotergite dark gray. Pleura dark gray, with a conspicuous, pale, longitudinal stripe involving dorsal sternopleurite, continued caudad and becoming more expanded behind, reaching base of abdomen; dorsopleural membrane pale. Halteres with stem yellow, knob weakly darkened. Legs with coxæ and trochanters yellow; remainder of legs brownish yellow to obscure yellow, outer tarsal segments darker. Wings (Plate 1, fig. 18) tinged with brownish yellow, restrictedly patterned with darker brown, including stigma; conspicuous wing tip in outer ends of cells R_3 and R_4 ; small seams at origin of R_s , cord, and m-cu; veins yellow, dark brown in clouded areas. Venation: Sc relatively short, Sc_1 ending about opposite one-fifth length of R_s , Sc_2 opposite origin of latter; R_3 moderately oblique, distance on margin between R_{1+2} and R_3 about one-third length of latter; m-cu a little more than its own length before fork of M.

Abdomen, including hypopygium, dark brown. Male hypopygium (Plate 4, fig. 45) with apical lobe of basistyle, *b*, elongate. Outer dististyle, *od*, a slender rod terminating in an acute point, on outer margin at near one-third length bearing a long strong spine; shortly before apex with a much smaller appressed spine. Intermediate dististyle, *md*, elongate, bifid, longest arm a flattened, twisted ribbon, longer than other elements of styli; at near midlength the style bears a small curved lateral arm. Inner dististyle, *id*, deeply bifid, outer arm a longer, gently curved spine; inner arm a straight spinous rod, tip acute, near apex with a few setæ. Ædeagus, *a*, elongate, simple, slender.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Flying Bridges Temple, altitude 3,000 feet, June 1, 1938 (*Tsen*).

Gonomyia (Idiocera) multiarmata is entirely different from other, now numerous, species of the subgenus in eastern Asia. It is well distinguished by the patterned wings and the unusual armature of the male hypopygium, especially the strongly bifid inner dististyle.

ERIOPTERA (TELENEURA) PERLUGUBRIS sp. nov. Plate 1, fig. 19.

General coloration black, including palpi, antennæ, and halteres; wings strongly blackened; Rs relatively long, about twice length of R_{2+3+4} ; abdomen black; ovipositor with strongly upcurved cerci horn-yellow.

Female.—Length, about 5 millimeters; wing, 5.8.

Rostrum and palpi black. Antennæ black, outer flagellar segments paling to dark brown; flagellar segments passing through oval to elongate. Head black.

Thorax uniformly black. Halteres black, base of stem restrictedly obscure yellow. Legs with coxæ blackened; trochanters testaceous yellow; remainder of legs obscure yellowish brown, with a vestiture of still darker setæ and linear scales; tarsi dark. Wings (Plate 1, fig. 19) relatively long and narrow, strongly blackened; veins and trichia still darker. Venation: Rs relatively long, about twice R_{2+3+4} , cells beyond cord long and narrow, as in subgenus.

Abdomen black; ovipositor with strongly upcurved cerci horn-yellow.

Habitat.—China (Szechwan).

Holotype, female, Mount Omei, Chu Lao Tong Temple, altitude 6,500 feet, June 6, 1938 (*Tsen*).

Erioptera (Teleneura) perlugubris is entirely distinct from the other described Chinese species, differing especially in the black coloration of the body and the darkened tarsi. It is most similar to the subgenotype, *E. (T.) fusca* de Meijere, of the Austramalyan islands, which differs in the much smaller size and the different venation, Rs being subequal in length to R_{2+3+4} .

ERIOPTERA (EMPEDA) BRACHYCLADA sp. nov. Plate 1, fig. 20; Plate 4, fig. 46.

General coloration light gray; antennæ black; halteres uniformly pale yellow; femora and tibiæ brownish yellow, tips a little darkened; no scales on legs; wings very pale yellow, especially basal and costal portions; veins yellow, brown in darker outer portions; stigma pale brownish yellow; Rs relatively short, subequal to R_4 ; abdomen, including hypopygium, black; male

hypopygium with stem of outer dististyle unusually short, outer arm shorter than inner, appearing as a curved spine, tip acute; inner arm expanded at apex; inner dististyle pale, at apex dilated into a high glabrous crest.

Male.—Length, about 4.2 to 4.5 millimeters; wing, 4.6 to 5.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval. Head dark gray.

Thorax light gray, præscutum without stripes. Pleura gray, dorsopleural region only restrictedly brightened. Halteres uniformly pale yellow. Legs with coxæ reddish brown; trochanters obscure yellow; femora and tibiæ brownish yellow, tips a little darkened; tarsi dark brown to brownish black; legs without scales. Wings (Plate 1, fig. 20) very pale yellow, prearcular and costal fields paler and clearer yellow; cells beyond cord and anal field a little more darkened, best evidenced by darker veins, those in basal portions clear light yellow, including most of R_s ; stigma pale brownish yellow. Venation: Sc of moderate length, Sc_1 ending opposite or just beyond midlength of R_s , Sc_2 somewhat variable in position, in cases at near middistance between origin of R_s and tip of Sc_1 , in other specimens lying more distad; R_s relatively short, subequal to vein R_4 ; R_3 oblique, m-cu close to fork of M .

Abdomen, including hypopygium, black. Male hypopygium (Plate 4, fig. 46) with stem of outer dististyle, *od*, unusually short; outer arm shorter than inner, appearing as a curved spine, tip acute, inner or concave edge with a low flange; inner arm expanded at apex. Inner dististyle, *id*, pale, at apex dilated into a high glabrous crest.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, summit, altitude 10,800 to 11,000 feet, June 16, 1938 (*Tsen*). Paratopotype, several males, May 26 to June 16, 1938 (*Tsen*).

Erioptera (Empeda) brachyclada is most similar to *E. (E.) sulfureoclavata* Alexander, differing especially in the blackened hypopygium with the details of structure distinct. *E. (E.) nigrostylata* Alexander has numerous flattened scales on the legs, and the structure of the male hypopygium quite distinct.

ERIOPTERA (EMPEDA) FUSCOCINCTA sp. nov. Plate 1, fig. 21; Plate 4, fig. 47.

Large (wing, male, over 5 millimeters); general coloration clear gray; legs brownish black, without scales; wings tinged with yellow, with a broad brown seam along cord; Sc relatively long, Sc_1 ending beyond four-fifths length of long R_s ; R_3 lon-

gitudinal in position; male hypopygium with outer dististyle darkened, deeply bifid, both arms obtuse at tips; gonapophyses appearing as broad pale plates.

Male.—Length, about 5 millimeters; wing, 5.4.

Rostrum and palpi black. Antennæ with scape black, succeeding segments dark brown; basal flagellar segments long-oval, outer segments more elongate and attenuate. Head gray.

Mesonotal præscutum gray, præscutum with poorly indicated pale-brown stripes; scutal lobes weakly darkened. Pleura clear gray. Halteres light orange yellow. Legs brownish black, coxæ pruinose; legs without scales. Wings (Plate 1, fig. 21) tinged with yellow, basal portions even brighter; stigma and a broad confluent seam on cord brown; extreme wing tip infumed; veins pale brown, more yellowish in basal portions. Venation: Sc relatively long, Sc₁ ending beyond four-fifths length of long Rs, Sc₂ a short distance from its tip; R₂₊₃₊₄ a trifle longer than R₂; R₃ longitudinal in position; m-cu at or immediately before fork of M.

Abdomen, including hypopygium, black, pruinose. Male hypopygium (Plate 4, fig. 47) with basistyle terminating in two lobes, stouter lobe with long setæ that equal or exceed the dististyle in length; second lobe smaller, with abundant dense setulæ and a very few long terminal setæ. Outer dististyle, *od*, darkened, deeply bifid, stem subequal in length to longest arm; one arm a little longer than the other, tips of both broadly obtuse. Inner dististyle, *id*, a simple blade, gradually narrowed to subacute tip, surface with several microscopic punctures. Gonapophyses, *g*, appearing as unusually broad and flattened pale plates.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Flying Bridges Temple, altitude 3,000 feet, June 1, 1938 (*Tsen*).

Erioptera (Empeda) fuscocincta is readily told from all other regional species of the subgenus by the conspicuously banded wings.

ORMOSIA (ORMOSIA) SUBDUCALIS sp. nov. Plate 1, fig. 22.

Allied to *ducalis*; large (wing, female, over 6.5 millimeters); general coloration black, including antennæ and legs; halteres orange yellow; wings brownish yellow, base clearer yellow; a restricted brown pattern, including stigma, a broad seam entire length of vein Cu, cord and base of vein M₃; cell M₂ open by

atrophy of m; ovipositor with cerci short, strongly upcurved, black at base, tips horn-yellow.

Female.—Length, about 6 to 6.5 millimeters; wing, 7 to 7.8.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval. Head gray; anterior vertex broad.

Thorax black throughout. Halteres orange yellow. Legs black, extreme bases of femora more brightened. Wings (Plate 1, fig. 22) brownish yellow, base clearer yellow; stigma more infuscated; a broad dusky seam entire length of veins Cu and Cu₁; more restricted dark clouds on cord and along vein M₃; veins pale brown, more yellowish in brightened basal portions. Macrotrichia of wing cells abundant, in all cells beyond arculus with exception of base of Sc (shown in figure by stippling). Venation: Sc₂ far from tip of Sc₁, about opposite one-fifth length of long straight Rs; R₂ subequal to R₂₊₃; cell M₂ open by atrophy of m; cell M₃ moderately deep, its petiole and m-cu subequal; m-cu at fork of M; vein 2d A nearly straight.

Abdomen black, including genital shield and bases of short, strongly upcurved cerci, tips of the latter horn-yellow.

Habitat.—China (Szechwan).

Holotype, female, Mount Omei, White Cloud Temple, altitude 9,000 feet, May 25, 1938 (*Tsen*). Paratype, female, Mount Omei, Chu Lao Tong Temple, altitude 6,500 feet, August 5, 1935 (*Graham*); U. S. Nat. Mus.

The nearest described ally is *Ormosia* (*Ormosia*) *ducalis* Alexander, of northern Korea, which has the same general size, coloration, and venation, differing especially in the uniformly darkened wings, with slight differences in venation, especially in the shorter veins, R₂₊₃₊₄ and M₃₊₄.

ORMOSIA (ORMOSIA) INÆQUISPINA sp. nov. Plate 1, fig. 23; Plate 4, fig. 48.

Belongs to the *similis* group; general coloration dark brown; antennæ (male) elongate, exceeding one-half length of body; flagellar segments fusiform, with conspicuous, erect, dark-colored setæ; wings with a brownish tinge, stigma darker; vein 2d A sinuous; male hypopygium with gonapophyses appearing as long, slender, curved spines, on outer margin beyond base bearing a long, slender, nearly straight spine.

Male.—Length, about 4 millimeters; wing, 4.7; antenna, about 2.5.

Rostrum dark brown; palpi black. Antennæ black throughout, elongate, if bent backward extending to beyond base of abdomen; flagellar segments fusiform, with conspicuous, erect,

dark-colored setæ that are subequal to length of segments. Head dark brown.

Thorax dark brown, pleura sparsely pruinose. Halteres dusky, with golden-yellow setæ. Legs with coxæ dark brown; trochanters testaceous; remainder of legs dark brown. Wings (Plate 1, fig. 23) with a brown tinge, stigma darker brown; veins pale brown. Macrotrichia of cells abundant (indicated in figure by stippling). Venation: Sc_1 ending opposite or just beyond R_2 ; Rs relatively short, subequal to R_3 ; R_2 at fork of R_{2+3+4} ; cell M_2 open by atrophy of basal section of M_3 ; m-cu at fork of M ; vein 2d A sinuous.

Abdomen, including hypopygium, dark brown. Male hypopygium (Plate 4, fig. 48) with both dististyles dusky; outer style, *od*, unusually small, oval in outline; inner style, *id*, prolonged into a slender apical point. Gonapophysis, *g*, appearing as long, slender, curved spines, blackened tips acute; on outer margin beyond base a long, slender, nearly straight, acute spine, entirely pale and about one-half as long as major axial apophysis.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Chu Lao Tong Temple, altitude 6,500 feet, June 6, 1938 (*Tsen*).

Ormosia (*Ormosia*) *inæquispina* is closest to *O. (O.) tenuispinosa* Alexander, which has somewhat similar antennæ in the male but the flagellar setæ pale and inconspicuous though long. The male hypopygium, especially the gonapophyses, is quite different in the two flies.

ORMOSIA (ORMOSIA) DECORATA sp. nov. Plate 1, fig. 24; Plate 4, fig. 49.

Belongs to the *similis* group; general coloration of thorax uniformly dark gray; antennæ (male) moderately long, if bent backwards extending to beyond wing root; femora brownish yellow basally, at near midlength passing into dark brown; wings yellow, heavily patterned with darker, including major areas at origin of Rs and on cord; cell M_2 open by atrophy of basal section of M_3 ; vein 2d A weakly sinuous on distal third; male hypopygium with outer gonapophysis a strongly bent rod, long apical portion gradually narrowed into a needlelike spine; inner gonapophysis shorter, very strongly curved, tip blackened and acute.

Male.—Length, about 4 millimeters; wing, 4.5; antenna, about 1.1.

Rostrum black, sparsely pruinose; palpi black. Antennæ moderately long, if bent backward extending to beyond wing

root, black throughout; flagellar segments long-oval, longest verticils much exceeding segments and unilaterally distributed; in addition to verticils, segments with a conspicuous white pubescence. Head dark gray.

Mesonotum uniformly dark gray, with yellow setæ; tuberculate pits black. Pleura black, gray pruinose. Halteres pale yellow. Legs with coxæ plumbeous; trochanters yellow; femora brownish yellow basally, at near midlength passing into dark brown; tibiæ and tarsi dark brown. Wings (Plate 1, fig. 24) with ground color yellow, heavily patterned with darker, including a major area at fork of Sc and origin of Rs, extending caudad virtually to vein M; stigma and a broad confluent seam on cord; smaller dark marginal clouds at ends of longitudinal veins, largest at 2d A; base of cell Cu and fork of M less distinctly clouded; veins yellow, infuscated in clouded portions. Numerous conspicuous macrotrichia in cells of wing (indicated in figure by stippling). Venation: Sc₁ ending a short distance beyond R₂, Sc₂ about opposite one-third to one-fourth length of Rs; R₂ subequal to R₂₊₃; cell M₂ open by atrophy of basal section of M₃; vein 2d A weakly sinuous on distal third.

Abdomen, including hypopygium, brownish black. Male hypopygium (Plate 4, fig. 49) with outer dististyle, *od*, relatively small and slender, the surface with rows of appressed spines, as in group. Inner dististyle, *id*, with apical beak moderately elongate. Outer gonapophysis, *og*, appearing as strongly bent rods, long apical portion very gradually narrowed into a needle-like spine. Inner gonapophysis, *ig*, shorter, very strongly curved, tip blackened and acute.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, June 6, 1938 (*Tsen*). Paratopotype, male, Hwa Nien Pin Temple, altitude 6,500 feet, June 15, 1938 (*Tsen*).

Ormosia (*Ormosia*) *decorata* is readily told by the conspicuously patterned wings, darkened legs, and, especially, the structure of the male hypopygium, notably of the gonapophyses. It superficially resembles *O. (O.) auricosta* Alexander and *O. (O.) beatifica* Alexander, but is entirely distinct.

MOLOPHILUS (MOLOPHILUS) TSENI sp. nov. Plate 1, fig. 50.

Belongs to the *gracilis* group and subgroup; general coloration of thorax black, præscutum dark reddish brown; halteres pale yellow; legs brownish black: wings with a yellowish-brown

tinge; male hypopygium with the dorsal lobe of basistyle divided into two points, one a nearly straight blackened spine, the other a broader flattened blade; ventral lobe of basistyle unusually small and slender; outer dististyle a glabrous curved hook from a dilated base; inner dististyle smaller, a simple sigmoid rod; phallosomic plate obtuse at apex, surface glabrous.

Male.—Length, about 4 millimeters; wing, about 4.6.

Rostrum and palpi black. Antennæ black throughout. Head dark gray.

Mesonotal præscutum dark reddish brown, contrasting with the black scutum, scutellum, postnotum, and pleura. Halteres pale yellow. Legs with coxæ and trochanters black; remainder of legs brownish black. Wings with a yellowish brown tinge; veins darker brown; trichia, including costal fringe, brownish black. Venation: R_2 lying shortly distad of level of r-m; petiole of cell M_3 more than three times m-cu; vein 2d A long, sinuous, ending about opposite midlength of petiole of cell M_3 .

Abdomen black, hypopygium, especially dististyles, a little brightened. Male hypopygium (Plate 4, fig. 50) with dorsal lobe of basistyle, *db*, terminating in two conspicuous points, one a nearly straight blackened spine, the other a little shorter and broader, appearing as a dusky flattened blade, apex obtuse; mesal lobe low and broad; ventral lobe, *vb*, unusually small and slender, with coarse retrorse setæ. Outer dististyle, *od*, a strongly curved, simple hook from a dilated base, distal half narrowed into a long spine, surface of style glabrous. Inner dististyle, *id*, a little shorter, appearing as a simple sigmoid rod, apical third a long straight spine, at point of flexure and on base of apical point with about fifteen setigerous punctures. Phallosomic plate, *p*, obtuse at apex, surface glabrous.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Chu Lao Tong Temple, altitude 6,500 feet, June 6, 1938 (*Tsen*).

Molophilus (Molophilus) tseni is named in honor of the collector of this important series of Tipulidæ from Mount Omei, Mr. Tsen Bao-chi. It is readily told from allied generally similar black species by the brightened præscutum and by the structure of the male hypopygium, notably the bifid dorsal lobe of the basistyle, the unusually small and slender ventral lobe, and the conformation of the dististyles.

ILLUSTRATIONS

[Legend: *a*, Aedeagus; *b*, basistyle; *db*, dorsal lobe of basistyle; *g*, gonapophysis; *i*, interbase; *id*, inner dististyle; *iw*, inner gonapophysis; *md*, intermediate dististyle; *od*, outer dististyle; *og*, outer gonapophysis; *p*, phallosome; *s*, sternite; *t*, tergite; *vb*, ventral lobe of basistyle; *vd*, ventral dististyle.]

PLATE 1

- FIG. 1. *Tipula* (*Nippotipula*) *brevifusa* sp. nov.; venation.
2. *Tipula* (*Vestiplex*) *erectiloba* sp. nov.; venation.
3. *Tipula* (*Vestiplex*) *factiosa* sp. nov.; venation.
4. *Tipula* (*Oreomyza*) *sternosetosa* sp. nov.; venation.
5. *Tipula* (*Oreomyza*) *incisurata* sp. nov.; venation.
6. *Liogma simplicicornis* sp. nov.; venation.
7. *Limonia* (*Dicranomyia*) *amplificata* sp. nov.; venation.
8. *Limonia* (*Geranomyia*) *obesistyla* sp. nov.; venation.
9. *Helius* (*Helius*) *franckianus* sp. nov.; venation.
10. *Orimarga* (*Orimarga*) *guttipennis* sp. nov.; venation.
11. *Dicranota* (*Rhaphidolabis*) *angustistyla* sp. nov.; venation.
12. *Limnophila* (*Limnophila*) *fenestrella* sp. nov.; venation.
13. *Limnophila* (*Prionolabis*) *lictor* sp. nov.; venation.
14. *Limnophila* (*Prionolabis*) *poliochroa* sp. nov.; venation.
15. *Limnophila* (*Adelphomyia*) *simplicistyla* sp. nov.; venation.
16. *Elephantomyia insolita* sp. nov.; venation. ,
17. *Lipsothrix mirabilis* sp. nov.; venation.
18. *Gonomyia* (*Idiocera*) *multiarmata* sp. nov.; venation.
19. *Erioptera* (*Teleneura*) *perlugubris* sp. nov.; venation.
20. *Erioptera* (*Empeda*) *brachyclada* sp. nov.; venation.
21. *Erioptera* (*Empeda*) *fuscocincta* sp. nov.; venation.
22. *Ormosia* (*Ormosia*) *subducalis* sp. nov.; venation.
23. *Ormosia* (*Ormosia*) *inæquispina* sp. nov.; venation.
24. *Ormosia* (*Ormosia*) *decorata* sp. nov.; venation.

PLATE 2

- FIG. 25. *Tipula* (*Vestiplex*) *erectiloba* sp. nov.; male hypopygium, lateral.
26. *Tipula* (*Vestiplex*) *erectiloba* sp. nov.; male hypopygium, ninth tergite.
27. *Tipula* (*Vestiplex*) *factiosa* sp. nov.; male hypopygium, ninth tergite.
28. *Tipula* (*Vestiplex*) *factiosa* sp. nov.; male hypopygium, styli.
29. *Tipula* (*Oreomyza*) *sternosetosa* sp. nov.; male hypopygium, lateral.
30. *Tipula* (*Oreomyza*) *sternosetosa* sp. nov.; male hypopygium, details.
31. *Tipula* (*Oreomyza*) *incisurata* sp. nov.; male hypopygium, lateral.
32. *Tipula* (*Oreomyza*) *incisurata* sp. nov.; male hypopygium, ninth tergite.

PLATE 3

FIG. 33. *Liogma simplicicornis* sp. nov.; antenna, male.

34. *Liogma simplicicornis* sp. nov.; male hypopygium.

35. *Limonia* (*Dicranomyia*) *amplificata* sp. nov.; male hypopygium.

36. *Limonia* (*Geranomyia*) *obesistyla* sp. nov.; male hypopygium.

37. *Helius* (*Helius*) *franckianus* sp. nov.; male hypopygium.

38. *Orimarga* (*Orimarga*) *guttipennis* sp. nov.; male hypopygium.

39. *Dicranota* (*Rhaphidolabis*) *angustistyla* sp. nov.; male hypopygium.

40. *Limnophila* (*Limnophila*) *fenestrella* sp. nov.; male hypopygium.

41. *Limnophila* (*Prionolabis*) *lictor* sp. nov.; male hypopygium.

PLATE 4

FIG. 42. *Limnophila* (*Prionolabis*) *poliochroa* sp. nov.; male hypopygium.

43. *Limnophila* (*Adelphomyia*) *simplicistyla* sp. nov.; male hypopygium.

44. *Lipsothrix mirabilis* sp. nov.; male hypopygium.

45. *Gonomyia* (*Idiocera*) *multiarmata* sp. nov.; male hypopygium.

46. *Erioptera* (*Empeda*) *brachyclada* sp. nov.; male hypopygium.

47. *Erioptera* (*Empeda*) *fuscocincta* sp. nov.; male hypopygium.

48. *Ormosia* (*Ormosia*) *inæquispina* sp. nov.; male hypopygium.

49. *Ormosia* (*Ormosia*) *decorata* sp. nov.; male hypopygium.

50. *Molophilus* (*Molophilus*) *tseni* sp. nov.; male hypopygium.

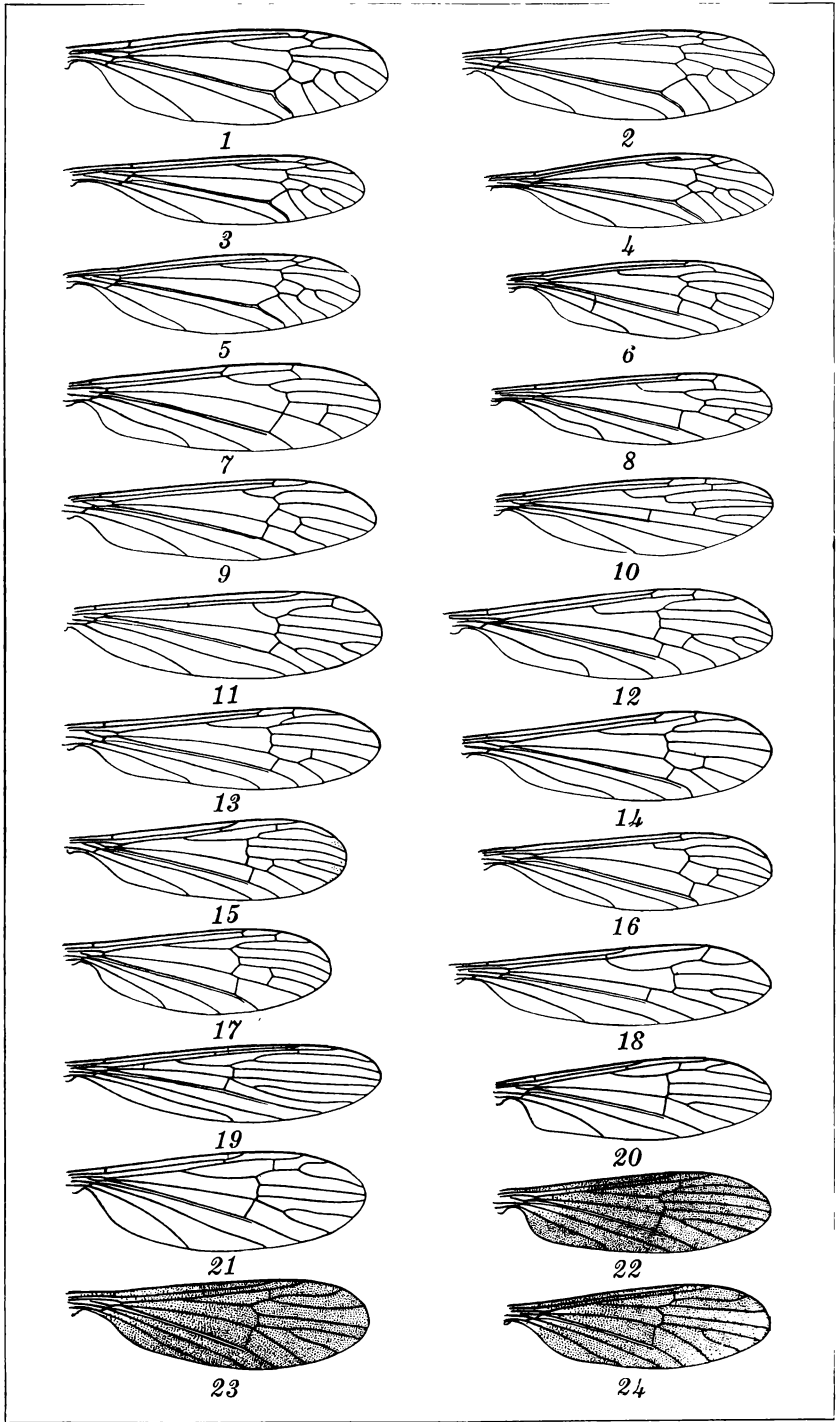


PLATE 1.

